# An Analysis of The Cognitive Level of Teachers' Questions to Students at SMAN 2 Kendari

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**ABSTRACT**

This research aims to investigate the cognitive level of oral and written questions used by English teacher at SMAN 2 Kendari. The researcher applied qualitative data of descriptive study. The data source was collected from the teaching process by three English teachers who teach at SMAN 2 Kendari. The researcher conducted observation to collect the data. The instruments used in this research were classroom observation and interview. The questions were collected, listed, and analyzed according to Bloom's Taxonomy: low order thinking skills: knowledge, comprehension, and application, and high order thinking skills: analysis, synthesis, and evaluation. The findings showed that there were 99 oral questions in which 15% was knowledge level (C1), 45% was comprehension (C2), 12% was application (C3), 10% was analysis (C4), however synthesis level (C5) was 5%, 13% was evaluation (C6). The results indicate that the knowledge and comprehension questions were frequently asked by the teachers, respectively while it left little opportunity for synthesis and evaluation levels. Further, there were 16 written test questions in which 38% was application (C3), 6% was analysis (C4), 25% were synthesis level (C5), and 31% was evaluation (C6). There was not questions in knowledge and comprehension level.

*Keywords:*
*questioning, cognitive level of question, Bloom's taxonomy*

## 1. Introduction

Education has already entered the personal digitization information age, where many changes in classroom teaching and the students' activities. Classroom activities become more interesting. It demands the teacher to use the best teaching technique and strategies to make good teaching. There are many teaching techniques that the teacher can apply in the class to involve the students in learning. One of them is teachers' questions as it can helps teacher to gain students' responses and to stimulate their critical thinking.

Question is an important component in teaching learning process. As we know all of our knowledge has come from questions. In the learning process, questioning can be the bridge to the teacher and students to create interaction. Questioning has been mentioned as one of the most needed and important techniques during the learning process. Questioning is used to evaluate students' knowledge and understanding the material, it also can help teacher to review students essential content in a subject. Questioning is usually used as one kind of common exchange teaching skills between the teacher and students. It has been used extensively in teaching till now. Teachers want to get students' responses and the first step is to answer questions. Through reliable dialog and communication again, the teacher can

get the answers they want and evaluate the students. Teacher questioning not only plays role as a communicative tool, but also can be used to increase students' linguistic ability.

There are many reasons why teacher use question in their classroom activity. Teachers use question for helping students to build their understanding and to promote students to think about and work upon the material. Teacher also uses question to ask individual pupils, to the entire class, to small groups to produce curiosity, focus attention, develop an active approach, stimulate pupils, structure the task, diagnose difficulties, communicate expectation, help children reflect, develop thinking skills, help group reflection, provoke discussion and show interest in pupils' ideas.

That is why teachers' questions can be beneficial to help students' learning the material. Weimer (2011) states that question can provide feedback. If the teacher asks questions in the class, the students will think and try to respond to it at the time, teacher can see how far the students understand the lesson. Unfortunately, the problem is teacher cannot vary their cognitive level of classroom questions. Most of questions that teachers ask sometimes are not suitable with the students' cognitive level. Teachers indicate that memory and comprehension as two low levels is the most commonly used in classroom discourse. Therefore, teacher questioning is important since the use of higher level of question can help students' improve their comprehension on the learning material.

Several researchers have investigated this issue Matra (2014) and Alzu'bi (2014) and they come with a conclusion that teachers' questions are categorized as lower level questions. So, they need to improve their questioning in teaching learning process. Most of English teachers asked question as "did you still remember?",or "can you mention what is the professor name?", while actually the higher level of question "do you agree with the writer opinion ? State your reasons?" this question can help students to have more creative thinking. Therefore, examining teachers question is important since the use of higher level of question can help students to improve their comprehension on the learning material.

This phenomenon motivates the researcher to conduct a descriptive study to observe the cognitive level of teachers' questions in SMAN 2 Kendari. Researcher chose the school because the researcher had observed the English teachers' teaching and researcher saw that the teachers did not really optimize the practice of questions especially the used of cognitive level of question based on Bloom's taxonomy.

## 2. Methods

The researcher analyzed the cognitive of oral and written question which were used by English teachers at SMAN 2 Kendari based on Bloom Taxonomy. In order to address the research question, this study employed a qualitative research which is a descriptive study as a method to investigate the research concern. Then the researcher collected the data by recording teachers' question in the form of audio. The procedures were as follows:
1. Arranging observation schedules based on the teachers' time and the English class schedule.

2. Recording the learning process three times in different classes. Each observation took around 40-50 minutes long.

3. Noting down the teacher questions based on the observation protocol. During the process of noting in this research, the researcher made a transcript based on teachers' questions to ease the researcher in identifying and analyzing the cognitive level of questions based on Bloom's Taxonomy.

During the recording period, students were not aware that their interactions with the teacher as well as with each other were being recorded. The teacher of the class did his best not to alter or to modify his instruction for the purpose of the study so that classroom interactions can be as natural as possible. Therefore, it was expected that the study had almost no impact on classroom interaction, one part of which is teacher questioning.

To analyze the data, the researcher employed the stages of qualitative data analysis by using a technique called content analysis. The steps of the activity relate to this content analysis are as follows:

1. Collecting the teachers' oral and written questions.

2. Classifying the teachers' questions from the observation. Their frequency was examined into six levels of cognition based on Bloom's taxonomy, which are knowledge, comprehension, application, analysis, synthesis, and evaluation.

3. Calculating and converting into percentage to make the data more readable. In calculating the frequency of each questions, the researcher employed the following formula:

$P = \frac{Fx}{N} \times 100\%$
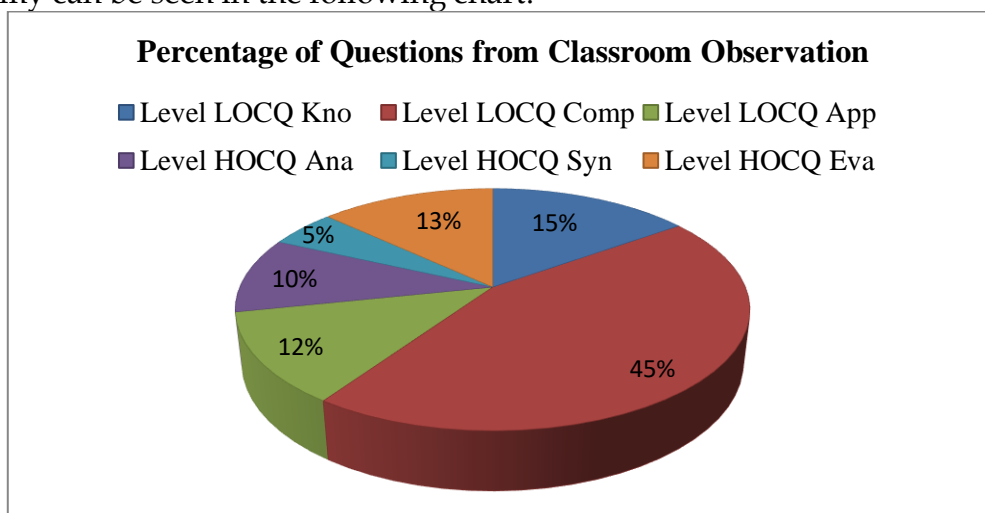
P  : percentage of each type
Fx : the frequency of each category appearance
N  : the total amount of all category appearance

After calculating data, they were divided into two categories namely higher and lower order and displayed on a chart.
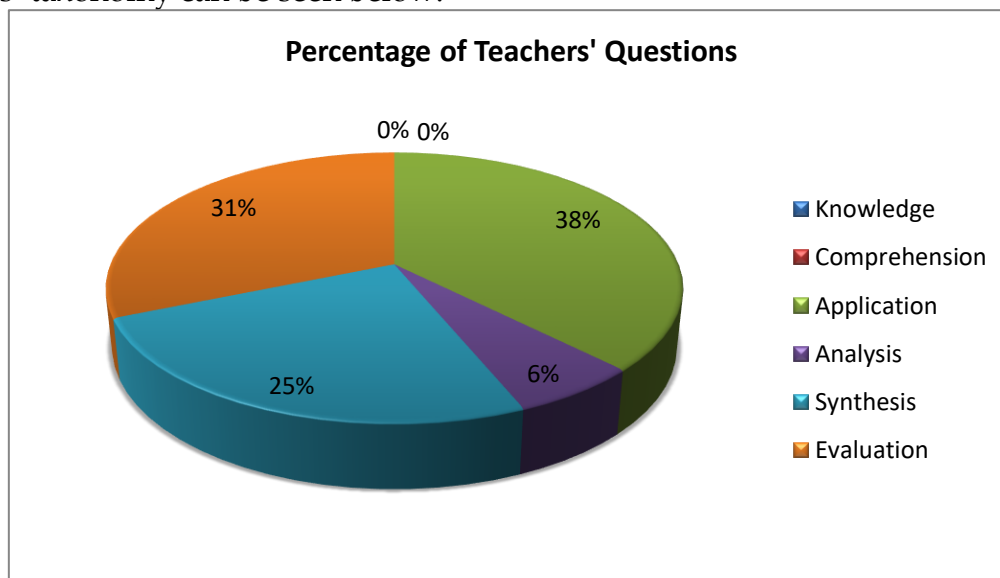
## 3. Result

Findings of cognitive level of oral questions used by teachers based on bloom taxonomy can be seen in the following chart.



Percentage of Questions from Classroom Observation

- Level LOCQ Kno
- Level LOCQ Comp
- Level LOCQ App
- Level HOCQ Ana
- Level HOCQ Syn
- Level HOCQ Eva

15%, 45%, 12%, 10%, 5%, 13%

As shown by chart above, the questions asked by the teachers are mostly in comprehension level and categorized as lower order of cognition. The second most frequently used is application level. The evaluation level is the highest level rarely used. Among 99 questions, there are 15% for knowledge level (C1), 45% for comprehension (C2), 12%for application (C3), 10% for analysis (C4), however synthesis level (C5) for 5%, and 13% for evaluation (C6).

Findings of cognitive level of written questions used by teachers based on blooms' taxonomy can be seen below.



Based on the chart above, it shows that the result of the written questions asked by the teachers are mostly in application level and categorized as lower order of cognition. The other questions most frequently used are in evaluation level. The analysis and synthesis level as higher level were rarely used, and knowledge and comprehension level are not used. Among 16 questions, there are not knowledge level (C1) and comprehension (C2), 38% for application (C3), 6% for analysis (C4), 25% for synthesis level (C5), and 31% for evaluation (C6).

## 4. Discussion

The focus of this study is on analyzing the cognitive level of questions used by the English teachers. There are six cognitive levels of Bloom's Taxonomy which are knowledge, comprehension, application, analysis, synthesis and evaluation. Findings in the present study showed that there was different frequency of teachers questions based on Bloom's taxonomy. Based on the results of study, it is known that most frequently use oral questions are questions on comprehension level where they are classified as lower cognitive level, and questions on written test that teacher used are questions on application level where they are included as lower cognitive level based on Bloom's Taxonomy. An overall conclusion that can be drawn from the results of this analysis is that of 99 oral and 16 written questions during 13 observations the dominant emphasis on oral questions are lower level questions and written questions are higher level question.

In the contrary, for the oral questions with higher cognitive level are rarely used by the teachers in the class but in written test, teacher lean to use high level of

questions such analysis (C4), Synthesis (C5), and Evaluation (C6). Regarding this issue, Matra (2014) in her study reported that teachers' used various cognitive levels of questions, but they mostly used lower cognitive level of questions which is knowledge and comprehension questions. Teacher asked the lowest cognitive level question is also found by Khorsand (2009). Teacher tends to apply comprehension level on oral question to get responses from the questions because the students can answer the questions if they have lower level. So teacher asked on lower level to get feedback and it can make interaction in the class.

From this study it can be learn that teachers can use varieties of cognitive level of questions to help students achieve their optimum learning. The types of questions asked are determined by the pedagogical purposes and students' level.

## 5. Conclusion

Based on the result of this study, it can be concluded that oral questions addressed by English teachers are categorized as lower level questions and written questions addressed by English teachers are categorized as higher order questions.

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