

# COGNITIVE DOMAIN OF REVISED BLOOM TAXONOMY IN ENGLISH STUDENT BOOK

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**Abstract:** The presence of Cognitive Domains in the instructions of learning activities in the textbook is essential, especially for developing students' thinking skills. This research aimed to investigate the cognitive process dimensions and knowledge dimension of Bloom's Revised Taxonomy represented in all of the instructions of learning activities provided in the "English in Mind Starter Second Edition (Student's Book) Special Edition" written by Herbert Puchta and Jeff Stranks. This research is qualitative descriptive with content analysis design. To collect data, the table adapted from Anderson and Krathwohl's taxonomy table are used. The study revealed that: (1) All levels in Cognitive Process Dimension of BRT are existed in instructions with the most used level of Cognitive Process Dimension was Remember, with 233 times of occurrence (50%), and (2) Three of Four Knowledge Dimension are existed in the instructions, the Factual Knowledge was the most dominantly distributed 247 times with 53% of percentage, while Metacognitive Knowledge is absent. The findings revealed show how the instructions of learning activities in this textbook put more emphasis on LOTS rather than HOTS. Based on the findings, the researcher suggested that textbook writers and teachers need to provide more balanced cognitive domain distribution and focus on higher-level thinking rather than lower-order level thinking.

**Keywords:** *Cognitive Domain, Cognitive Process Dimension, Knowledge Dimension, HOTS, LOTS, Bloom's Revised Taxonomy.*

## 1. INTRODUCTION

Cognitive Domain is a classification system of six levels: remembering, understanding, applying, analyzing, evaluating and creating. (Schultz, 2005). The cognitive domain deals with recall or recognition of knowledge and the development of understandings and intellectual abilities and skills. It consists of two aspects, the cognitive process dimension and the knowledge dimension (Krathwohl, 2002). Cognitive Domain in the questions is important aspect in developing students' thinking skills in particular through textbook (Igbaria, 2013). As one of the requirements, the learning activities are not always representing and emphasizing higher level of thinking to support the demand of the curriculum itself

in this case the 2013 curriculum that has become the newest curriculum applied in Indonesia (Dharma et.al, 2018).

Bloom's Taxonomy is a framework, which has some categories. These categories are one of basic principles in the taxonomy itself (Anderson, Krathwohl, 2001). The framework for describing learning objectives by the type of knowledge to be gained and the cognitive process employed to facilitate the actual learning (Splinder, 2015). The revised taxonomy is considered to be an effective tool for writing, organizing and analyzing learning goals and objectives (Blumberg, 2009).

On the school context, many teachers use textbooks as the main source of

materials for their students. The most obvious and most common form of material support for language instruction comes through textbooks (Brown H, 2001, p. 136). The textbook is an important source of input and a great opportunity for EFL learners to communicate in the target language (Tok, 2010). A good textbook should be accurate. The materials in the textbook should not present wrong information or presented in error grammatical language and incorrectly words (Yasid & Kuswardani, 2014, p. 3).

In designing instructional materials, the authors of textbook should consider the Principles of Language Teaching such as the materials designed for teaching should provide and help learners to be more mature, more critically astute, more creative, more constructive, more collaborative, more capable, and more confident as a result of the course (Harwood, 2010, p. 96).

The purpose of the study is to analyze the learning activity in the textbook to determine whether the learning activities in the textbook emphasized on lower or higher order thinking skills, the result of these study mostly show that the lower level cognitive domain more frequently appears in the textbook rather than higher order level.

## 2. REVIEW OF LITERATURE

English teachers usually use textbooks as main teaching material on learning process. They take many tasks/materials from textbooks to make them easier to create activities for the students. There were so many materials taken from different sources in teaching and learning English. However, Brown (2007) stated that textbook is common form of material support for language instruction.

Textbook provide the content of the lesson, what skills to be taught, and what kinds of language that students need to learn (Richards, 2001). Textbooks can be a resource for independent learning, an effective source for introducing materials to the teachers, a source of ideas and

activities, a reference source for students, and as a syllabus that reflects learning objectives, as noted in Tomlinson (2012).

### Components of the Textbook

The textbook provides a variety of learning resources, because they are accompanied by workbooks, cassette tapes, or CD-ROMs, and a teacher's guide which provide various resource for teachers and students (Suryani, 2018). Task is one of the components of textbooks and play important role for English teachers in teaching and learning process. Student's activities in the classroom are usually taken from some tasks in the textbooks (Nunan, 2004).

Richards and Rodgers (2001:224) stated that task is an activity that is carried out using language such as finding a solution to a puzzle, reading a map, making a telephone call, writing a letter, and reading a set of instruction. The activity in a task should accommodate the learner's need

### Cognitive Domain

Cognitive Domain is related with the process of thinking. Bloom defined it as a part of Knowledge and the development of thinking skill (Kasilingam et al., 2014, p.28). Cognitive domain also called cognitive process because those are consisting of some different level of thinking. Cognitive process is one of dimensions in Revised Bloom's Taxonomy that consist of six parts (Krathwohl, 2002).

As Huitt (2011) states, the significant principle of the taxonomy is that educators' requirement of learners' knowledge can be organized in a hierarchy from less to more complex cognitive processes (i.e., remembering, understanding, applying, analyzing, evaluating, and creating).

In order to fit the modern learning outcomes, in the 1990's, a former student of Bloom's, Lorin Anderson, led a new assembly which met for the purpose of updating the taxonomy, hoping to add relevance for 21st century students and teachers. (Anderson, & Krathwohl, 2001). The number of categories was the same, but

some significant modifications were made including switching the names of the levels from nouns to active verbs to adjust for the way they are employed in objectives, and reversing the order of the highest two levels (see Krathwohl, 2002 for an overview).

The Bloom’s Taxonomy improved from one dimension to two dimension (Krathwohl, 2002). The first dimension is Cognitive Process Dimension, consisting of remember, understand, and apply which included in Lower Order Thinking Skills (LOTS), while Higher Order Thinking Skills (HOTS) are analyze, evaluate, and create. The second is Knowledge Dimension, consisting of factual knowledge, conceptual knowledge, procedural knowledge, and metacognitive knowledge.

### 3. RESEARCH METHODOLOGY

This research is categorized as content analysis since this study examined and analysed a textbook as the main source of data. By using this approach, the researcher tries to identify and analyse the Instructional of all learning activities contain in the textbook entitled English in Mind Starter Second Edition (Student’s Book) Special Edition.

#### Data and Data Source

The data of this study includes all of the instruction of all learning activities contained in the textbook.

The source of the data is the selected English textbook used by the teachers in Jakarta, published by a well-known publisher Cambridge entitled English in Mind Starter Second Edition (Student’s Book) Special Edition for Junior High School.

The instrument of the study is the table checklist adapted from Anderson and Krathwohl’s taxonomy table. The table provides an analysis to learning complex kinds of knowledge dimension and cognitive processes (Krathwohl, 2002, p.216). Below is the formulated instrument to collect the data of instructions in the selected textbook.

Table 0 2. Analysis Table of the instructions of learning activities in English in Mind Starter Second Edition (Student’s Book) Special Edition based on Cognitive Domain of Bloom’s Revised Taxonomy.

No	Instruction	Cognitive Process	Description
1	Match the singular and plural nouns	B2	The learning activity considered as the process of cognitive domain <b>understand</b> , it is because the students need to understand about the concept of singular and plural. The knowledge dimension is <b>conceptual knowledge</b> , because the learning activity deals with knowledge of structures.

These are the procedures for collecting the data:

1. Find the book entitled “English in Mind second edition Student’s Book Starter” for Junior High School
2. Select the data and decide the cognitive process used in the analysis.

3. Select the data and decide the knowledge dimension used the analysis.
4. List all of the instructions in all learning activities into the table of analysis to analyze its cognitive process and knowledge dimension.

The collected data are analyzed through certain procedures as followed:

1. Examine all the collected data that is all of the instructions in all of the learning activities in the textbook based on criteria.
2. The data grouped based on the keywords into the table of analysis to seek for its cognitive and knowledge domain referring to Revised Bloom's Taxonomy.
3. Give a description about what makes all the instructional questions are considered to represent certain cognitive and knowledge dimension as the findings.
4. Count the frequency of each cognitive and knowledge dimension. The implication of the frequency gives an indication about the significance of cognitive domain in the learning activities.
5. Describe the finding and conclusions.
6. Write a qualitative description on the dominant frequencies in the learning activities based on the cognitive process and knowledge dimension.

### 3. FINDINGS AND DISCUSSION

#### Cognitive Process Dimensions

The findings of total level of cognitive processes used in the instruction of the learning activities in the textbook reveals that all of the levels of cognitive process are used in the instruction of the learning activities. The most used cognitive process in the learning activities is Remember occurs 233 times. The second is cognitive process of Analyze occurs 91. The third is cognitive process of Apply occurs 67 times. Next, is the cognitive process of Create occurs 40 times. Then, Understand with 29

times of occurrence. Lastly, the lowest number of cognitive process dimension used in the textbook is Evaluate with 6 times of occurrences.

#### Knowledge Dimension

The finding shows that from 466 instructions of learning activities in the textbook, there are only three knowledge dimensions existed, while Metacognitive Knowledge is absent. Factual Knowledge has the highest percentage of distribution in the learning activities of the textbook with 247 times of occurrence with the percentage of 53%. Followed by Procedural Knowledge occurs 114 times with 24,46%. Then the lowest number distribution of the Knowledge Dimension in the textbook is Conceptual Knowledge with the times of occurrence 105 times with the percentage of 22,53%. Meanwhile, the Metacognitive Knowledge do not present in the instruction of learning activities of the textbook.

#### Discussion

The findings revealed that the instructions of learning activities in the English in Mind Starter Second Edition (Student's Book) Special Edition textbook put emphasis on LOTS (Remember, Understand, Apply) rather than HOTS (Analyse, Evaluate, Create). This proved by Remember level occurs 233 times (50%) followed by Analyze occurs 91 times (19,5%). The Knowledge Dimensions (Factual Knowledge, Conceptual Knowledge, Procedural Knowledge, and Metacognitive Knowledge) are not equally distributed in the textbook, it is proven that only three Knowledge Dimensions are presented, the Metacognitive Knowledge is absent. The most frequently appeared is Factual Knowledge with 246 times of occurrence.

The findings also correspond study conducted by Hei, J, X (2017), The result of this study show that the authors of the textbook emphasize on the lower level of cognitive process especially Understand category. The study by Hasan AbdRabbah (2016) The result reveal that questions included in grade eight Arabic language textbook focus on the first two lower levels

of the taxonomy (remember and understand) rather than higher level category with the percentages of 31.73% and 39.23%. The finding shows that the distribution of Revised Bloom's Taxonomy categories in each text type was not balanced. The category in the low levels of thinking had higher portion than the category in the high levels of thinking.

#### 4. CONCLUSION

Cognitive Domain should be presented in the learning activities, since it is important to develop students' thinking skills. The textbook, attempts to some extent to develop students' higher thinking processes. However, the author of this textbook put more emphasis mainly on the lower thinking processes especially Remember with the most dominant number. All levels of Cognitive Process Dimension are used in the instruction of all learning activities, which are Remember, Understand, Apply, Analyse, Evaluate, and Create. The stage of Remember used 233 times is the most frequently used followed by Analyse used 91 times, then Apply used 67 times, Create used 40 times, then Understand used 29 times, and the lowest number of used is Evaluate with the occurrences of 6 times. there were three of Knowledge Dimension presented in the instruction of learning activities of the textbook, which are Factual Knowledge, Conceptual Knowledge, and Procedural Knowledge, while Metacognitive Knowledge is absent. The Factual Knowledge was the most dominantly distributed 247 times with 53% of percentage, Procedural Knowledge distributed 114 times, with 24,46% of percentage, and Conceptual Knowledge distributed 105 times with 22,53% of percentage. It can be concluded that the most dominant Knowledge Dimension distributed in the instruction of learning activities was Factual Knowledge with more than fifty percent of occurrence.

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