Assessing Students' Knowledge of Bloom's Revised Taxonomy in Reading Comprehension Questions

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Abstract

In Myanmar, English has been taught as a compulsory subject for years. Skills required in learning a foreign language_ reading, writing, listening, and speaking_ are taught since in the primary level. Although reading has been taught as one of the essential skills for over ten years, students' reading skills are found to be weak. The aim of this research was to assess MUFL Second Year English Specialization students' knowledge of Bloom's Revised Taxonomy in reading comprehension questions. The objectives were to investigate students' understanding in Bloom's Revised Taxonomy and to assess students' cognitive knowledge in tackling the comprehension questions. The method used in this research paper was mixed method. The subjects were second year English specialization students, reading at Mandalay University of Foreign Languages in 2018-2019 Academic Year. They were siven discussions about Bloom's Revised Taxonomy for a week. Question sets including (55) questions were prepared to use in this research. All the comprehension questions are from the Prescribed Reading Text, Eng-2102, for second year English specialization students. The means of the performance of students in assessing their knowledge of Bloom's Revised Taxonomy were calculated and found as follow: the mean of remembering is 39.6, understanding, 19.85, applying, 17.82, analyzing, 15.45 and evaluating 23.64 respectively. The mean of remembering, 39.6 is the highest and that of analyzing, 15.45 is the lowest. Students' performance of assessing their knowledge of Bloom's Revised Taxonomy is not statistically significant because their interest in this kind of question type is low since these are not exam-oriented questions, familiar to most students. It is recommended that teachers should raise students' awareness of the advantages of Bloom's Revised Taxonomy, which is useful for assessing in teaching and learning environment.
Keywords: reading skills, reading comprehension, Bloom's Revised Taxonomy

Introduction

The second language learners need reading skills as academic skills since reading has always been an important focus of English language teaching programmes. Today, the role of English plays in the Information and Communication Age has promoted a rethinking of approaches to the teaching of reading. Moreover, it is also stated that literal skills play a vital role in people's lives at home, at work, at school and in their communities. In a single day, an adult may use reading for many different purposes. Besides, the ability to read effectively for academic purposes is crucial for many readers, particularly for the medium of the millions of international students enrolled worldwide in college and universities where English is the medium of instruction. (Richards, 2015)

Reading is an essential skill critical to most, if not all, academic learning and success at tertiary level. (Veeravagu, et al., 2010) According to Badrawi (1992:16), reading is not only a product but also a process. It is more than just accepting meaning in a literary sense. It involves introducing an individual's entire life experiences and thinking powers.

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Reading is defined as a cognitive process that involves decoding symbols to arrive at meaning. Reading is an active process of constructing meanings of words. Reading with a purpose helps the reader to direct information towards a goal and focuses their attention. Although the reasons for reading may vary, the primary purpose of reading is to understand the text. (https://study.com/academy/lesson/what-is-reading-definition-process.html)

Smith (1982:42) regards reading as a process that involves both the extraction and the supplying of information and suggests that the latter may be more important than the former.

In Myanmar, English has been taught as a foreign language and as a compulsory subject in schools for years. Children of nowadays have been exposed to English language of different forms- nursery rhymes, songs, poems, lullabies, dialogues, and so on- since they were born. They can be said that they had greater and better opportunities in learning English as a foreign language than those children of years ago. For this reason, the selected students were expected to have higher learning skills in doing reading exercises.

To be effective in reading, certain reading strategies are necessary but these strategies have been largely familiar with the students for their academic purposes. However, students today are being conditioned to do self-learning because of mobile devices and online course materials apart from their classroom course books. That is why to choose that kind of self-learning materials correctly becomes a crucial thing for them. To do so, having the knowledge of Bloom's Revised Taxonomy may help them to some extent. So this particular fact motivates the researcher to carry out this research. It is especially intended for the teachers as well as for students who want to approach the way of assessing the levels of reading comprehension questions.

Literature Review

Richards (2015:447) describes that it is easy to say what reading is _ the process of making meaning from a text _ but it is not so easy to describe what comprehension of a text entails and how comprehension is achieved. Several different types of knowledge – grammatical knowledge, vocabulary knowledge and prior knowledge are involved in understanding a text.

John, et al. (2013) did a study on "A Critical Study of English Language Question Papers, used for Evaluation of Language Skills of Intermediate (Xii Year) Students by the Board of Intermediate Education, Karachi". In their study, mixed method was used. Their study's aim was to critically analyze the demographic information, language learning skills focused, vocabulary used and number of questions related to different levels of cognitive domain given in the examination papers. The findings in their study showed that the Board of Intermediate Education, Karachi provide a focus for writing skills more than other language skills i.e. listening, speaking and reading which are as important as writing skills in communication process.

In addition, in 2010, Veeravagu, et al. conducted a research on "Using Bloom's Taxonomy to gauge students' Reading Comprehension Performance". This paper studied the relationship between the level of thinking processes in comprehension questions and the students` performance. They found that the level of questions designed according to Bloom's Taxonomy influence the students' performance in answering comprehension questions and it showed that

there's a relationship between the level of thinking processes needed and the students' ability to answer these questions correctly. Finally, they conclude that higher-order thinking occurs when students look beyond the surface of the text they are reading to figure out an answer or to attain comprehension. Making predictions, drawing conclusions and making inferences are examples of reading strategies that typically elicit higher-order thinking. While there is a recognized demand to have higher-order thinking practice in the classroom, there is also a recognized instructional struggle with bringing higher-order thinking to life in the classroom.

For the above discussion, these two research papers are intended for evaluating the performance of students in answering comprehension questions. But, there might not have been any research on assessing students' awareness of Bloom's Revised Taxonomy. For the purpose of filling this gap, this research was carried out. To conduct the research, the theory proposed by Anderson, et al. (2001) was used.

Bloom's Revised Taxonomy

Bloom's Revised Taxonomy 2001 has been used as a reference for educators globally. It is divided into six cognitive levels: remembering, understanding, applying, analyzing, evaluating and creating.

Remembering
This level includes recognizing or recalling knowledge from memory.

Understanding
It involves constructing meaning from different types of functions like interpreting, summarizing, inferring and explaining.

Applying
It relates to or refers to situations where learned material is used through products like presentation. In other words, it includes using information in another familiar situation.

Analyzing
It consists of breaking information into parts to explore understanding and relationships.

Evaluating
It includes making judgments based of criteria and standards through checking and critiquing.

Creating
It is the highest level of cognitive thinking. It includes putting elements together to form coherent or functional whole; recognizing elements into a new pattern of structure through generating, planning, or producing.

Aim and objectives
The aim of this research was to assess students' knowledge of Bloom's Revised Taxonomy in reading comprehension questions. The objectives are to investigate students' understanding in Bloom's Revised Taxonomy and to assess students' cognitive knowledge in tackling the comprehension questions.

Research Methodology

To carry out this research, the second year students were chosen and their age range were from 17 to 18. As they were specializing in English at MUFL, their language skills were expected to be at higher levels. The method used in this

research was mixed method. The subjects were second year English specialization students, reading at Mandalay University of Foreign Languages in 2018-2019 Academic Year. They were given a one-week lecture on the theory by Anderson et.al (2001) called Bloom's Revised Taxonomy. It was followed by the discussion for a period of 50 minutes. On the following day they were asked to sit for the test within a period of 50 minutes. A question set including (55) questions which was used in this research. All the comprehension questions are from the text book – Strategic Reading 2 by Jack C. Richards and Samuela Eckstut Didier – prescribed for second year English specialization students. All the passages to do with the comprehension questions had already been done in their academic year. To carry out the study, referring to their knowledge of Bloom's Revised Taxonomy the students were asked to choose the correct domain of the given reading questions from the text book. This research used Bloom's Revised Taxonomy (2001) assessment sheet retrieved from <http://www.kurwomgbss.qld.edu.au/thinking/ Bloom/blooms.htm> to decide whether the questions fall into the correct domain. Also, the researcher had already decided which question belonged to which domain according to the theory and Bloom's Revised Taxonomy (2001) assessment sheet. After that the percentage of each domain for all questions were calculated to know which domain occurs most and least. After the test, the data were collected and calculated the percentage of the students' performance in assessing the six different cognitive domains of Bloom's Revised Taxonomy.

Research Questions

1. How many higher-order thinking skills questions are included?

2. How well do the students understand Bloom's Revised Taxonomy?

3. How well can the students perform in choosing the correct cognitive domain of the given reading questions from the text book?

Findings and Discussion
After analyzing the data, the following results are found.

Table1: Percentage of Cognitive Domains included in the Question Set.

Sr. No	Domains	No. of Questions	Percentage of Questions
1	Remembering	18	32.73%
2	Understanding	12	21.82%
3	Applying	10	18.18%
4	Analyzing	14	25.45%
5	Evaluating	1	1.82%
6	Creating	-	-
	Total	55	100%

Table 1 shows the total number and percentage of questions used in this study. According to the table, out of six domains, five domains except creating were found. The number of remembering questions is 18. The occurrence of remembering domain is (32.73%) is highest. The second most frequent domain is analyzing (25.45%), the third one, understanding (21.82%), the fourth one (18.18%) and the least one (1.82%) respectively.

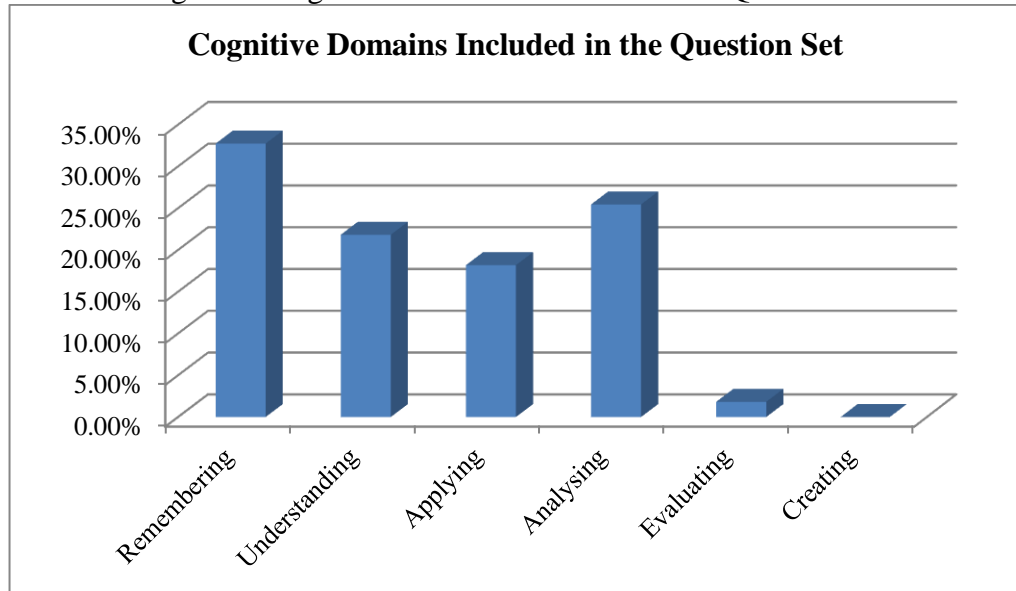Figure 1: Cognitive Domains Included in the Question set

Table 1 and Figure 1 show cognitive domains included in the question set. According to the results, the first research question, "How many higher-order thinking skills questions are included? " can be answered. Surprisingly, any question for the domain creating is not found although the questions are intended for the tertiary level students. Among higher-order thinking skills such as analyzing, evaluating and creating, even analyzing skill is found at 25.45%. The prescribed material was published in Cambridge University Press. In the introduction of the book it is stated that the passages contained have been gathered from different genres such as novels, plays, magazines, textbooks, websites, poetry, newspapers and, editorials and the texts increase gradually in length and difficulty so as to progress students' reading skills through this book. In fact, this prescribed text from which the questions are extracted should be included more amount of higher order thinking skills because its purpose is to develop the reading, vocabulary-building and critical thinking skills of learners of English. In reality, the comprehension questions are mostly at the lower order thinking skills. It may be because this textbook is meant only for EFL students in Asian countries.

Table 2: The Means of the Performance of Students in Assessing their Knowledge of Bloom's Revised Taxonomy

Sr. No	Domain	No. of Question items	No. of Students	Marks to Score	Marks Scored	Mean
1	Remembering	18	55	990	392	39.6
2	Understanding	12	55	660	131	19.85
3	Applying	10	55	550	98	17.82
4	Analyzing	14	55	770	119	15.45
5	Evaluating	1	55	55	13	23.64
6	Creating	-	-	-	-	-

Table 2 shows the means of the performance of students in assessing their knowledge of Bloom's Revised Taxonomy. According to the table the mean of remembering is 39.6, understanding, 19.85, applying, 17.82, analyzing, 15.45 and evaluating 23.64 respectively. As there is no question of creating, there is no mean in the highest level of creating.

Figure 2: The Mean of the Performance of Students in Assessing their Knowledge of Bloom's Revised Taxonomy
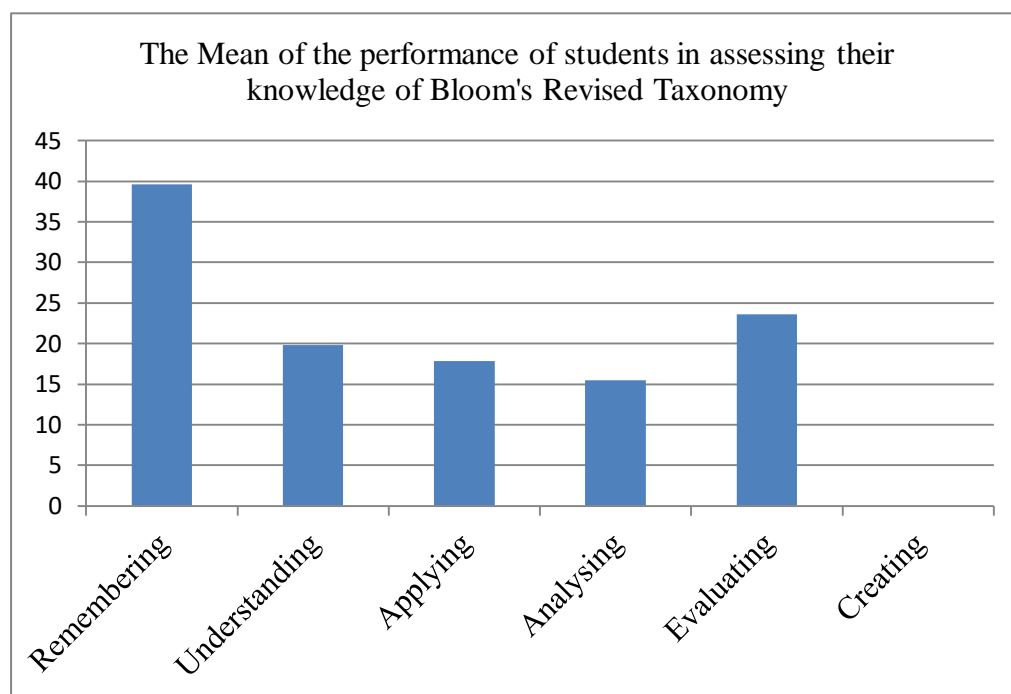
As shown in table 2 and Figure 2, the mean of assessing remembering question, 39.6 is the highest and that of analyzing, 15.45 is the lowest. Students can seemingly perform better in assessing lower order thinking skills questions. But surprisingly, the mean of one of the higher-order thinking skills, evaluating is the second most corrected domain. This may be because among the 55 questions, there is only one evaluating question type. Besides, the nature of this particular type of question is easy enough for the students to assess. On the other hand, although understanding and applying questions are in lower order thinking skills, students' performance of assessing their knowledge of Bloom's Revised Taxonomy is not quite satisfying.

From the facts above, the second question "How well do the students understand Bloom's Revised Taxonomy?" can be answered as follows. In spite of being given exposure to the knowledge of Bloom's Revised Taxonomy for a week, they could not fully understand to choose the correct domain of the questions given.

To answer the third question "How well can the students perform in choosing the correct cognitive domain of the given reading questions from the text book?" ,the students could not perform well unlike the expected outcomes. It can even be said that they are weak in choosing the correct answers. This might

be because they are less interested in this kind of question type as these are not exam-oriented questions which most students are usually engaged in and they all know that they are not included in their exam. So it can be suggested that any teacher should make students raise the awareness of the advantages of Bloom's Revised Taxonomy which is useful for assessing in teaching and learning environments.

Conclusion

Bloom's Revised Taxonomy is a teaching tool that can be used for teachers to set and grade questions relevant for the intended students. As for students, as they perceive the level of the questions they have to deal with, they may perform well in answering them.

This research investigates the students' awareness of Bloom's Revised Taxonomy by using the (55) comprehension questions included in the prescribed text of Strategic Reading-2. As Bloom's Revised Taxonomy is an organizational hierarchy, it categorizes thinking skills ranging from remembering, the most basic skill, to creating, which involves generating new ideas. Bloom's Revised Taxonomy

helps teachers to create lesson plans and tests that encourage students to improve their critical thinking skills. For students, they need skills that will help them solve problems and think critically both in and out of the classroom. Thinking critically helps them to connect what they have learned in the past to what they are learning today. To do so, students need higher order thinking skills to become self-directed learners. To meet this need, students should be aware of the knowledge of Bloom's Revised Taxonomy.

It can, therefore, be concluded that Bloom's Revised Taxonomy fits extremely well into lesson planning, dynamic teaching and assessing for teachers as well as deeper level of learning and making good judgments on what are being learnt for students. In this study, it was attempted to assess the awareness of students' knowledge of Bloom's Revised Taxonomy by using only the comprehension questions of reading passages. Further researches may be done on other types of questions in the course book.

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