

Using Bloom's Revised Cognitive Skills Taxonomy To Evaluate Iranian Students' Pre-University English Textbook and University Entrance Exams

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Abstract. The priority attributed to the use of Bloom's revised cognitive skills taxonomy in any educational system and the scarcity of research on this type of topic in our EFL context, the researchers attempted to conduct this study. Our primary objectives revolved around these dimensions. To examine if the pre-university teaching materials (English 1 and 2) assigned and employed by the teachers to teach their students at Shiraz followed Bloom's hierarchy. Likewise, the researchers attempted to check if the University Entrance Exams administered every year of screening the registered candidates to enter the universities

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in Iran was compatible with this taxonomy. Finally, to check if the differences between the two dichotomies (lower and higher) in the textbook were statistically significant. To achieve these goals, the content of the textbook and that of general and English majors' tests were evaluated against Bloom's Revised Taxonomy. Analyzing the data through descriptive statistics and a Chi-square test applied to data gathered from the English book, the results showed that the content of the book was not aligned with the order of Bloom's thinking skills. The hierarchy starts from lower order: remembering, understanding, and applying towards higher order: analyzing, evaluating, and creating. Likewise, the analysis of the university entrance exams' content did not reveal any congruity with Bloom's hierarchy. So no agreement between the two sources of input with Bloom's learning objectives was witnessed. Pedagogical implications and recommendations are presented.

Keywords: Teaching materials, university entrance exams, Bloom's revised taxonomy, textbook evaluation

1. Introduction

One of the crucial goals of an educational system is believed to nourish learners' mental or thinking capacity. Language learners in general and EFL learners in particular need to be taught creative and critical thinking in some domains, including English language learning Adams (2015). This aspect of language learning requires particular attention when the students' learning output is assessed based on a taxonomy of learning objectives emphasizing the thinking aspects of learning, Bloom's Taxonomy. On the other hand, textbooks, as the primary sources of input in educational systems around the world in general and our country Iran in particular but to some extent, have been under careful investigation and evaluation to check if the contents fulfill the objectives of teaching and learning or not. Ur (1996) believes that textbooks play a central role in any educational system helping to attain the school curriculum and make the national plan possible. The materials designed appropriately can establish a base for teaching and learning in classroom settings. Experts in the field believe that the selection of textbooks is of fundamental significance to become practical and functional in the sense that it will create the opportunity for the learners to obtain communicative competence and the process of language teaching

and learning will be facilitated Sahragard, R., & Rahimi, S. A. (2018), Yarmohammadi (2002) and Hutchinson and Torres, E. (1994). Towards this goal, researchers have developed different models and frameworks against which the teaching materials can be evaluated. One of the frameworks which have been used widely to evaluate the teaching materials is Bloom's Revised Taxonomy (BRT) (2005) employed in this study. The framework chosen helps us to examine how much of the contents of the pre-university English textbook and the University Entrance Exams (UEEs) administered by the Iran Education Ministry every year are in line with the lower order thinking skills (LOTS) and the Upper Order Thinking Skills (HOTS) as subcategorized by Bloom.

2. Purpose of the Study

This study aims to examine if the pre-university English textbook and the university entrance exams as high-stakes tests sponsored by the Ministry of Education follow the BRT, which may, in turn, influence the ways through which the students learn English and the EFL teachers teach that language. In other words, this study's objective is to find out whether or not the textbook, available and used during the last year of high schools, as well as the UEEs, both follow the BRT to support each other. In other words, are they aligned with the objectives of EFL learning in Iran checked against the BRT? To restate the aims of this study, the researchers have tried to investigate if the English textbook and the UEEs follow exactly the established sequence of cognitive skills by Bloom as a higher and lower order of thinking skills or not. In other words, do they show any concordance in terms of the two subcategories as higher order (analyzing, evaluating, creating) and lower order (remembering, understanding, applying) thinking skills hierarchies?

Following the above objectives, the research questions under investigation are as follows:

1. Do the teaching materials used in the fourth grade (pre-university) of high schools show their alignment with Bloom's Revised Cognitive Skills Taxonomy?

2. Do the university entrance exams follow the same established hierarchies using Bloom's Revised Cognitive Skills Taxonomy?

3. Is the distinction between the two dichotomies found in the book (lower and higher) of Bloom's taxonomy statistically significant?

Based on the above research questions, the following null hypotheses are proposed:

1. The teaching materials used in the fourth grade of high schools are not aligned with Bloom's Revised Cognitive Skills Taxonomy.

2. The university entrance exams do not cope with Bloom's Revised Cognitive Skills Taxonomy.

3. The distinction between the two levels (higher/lower) of Bloom's taxonomy found in the textbook is not statistically significant.

3. Significance of the Study

The significance of this study can be found in the statement of Wagner (2008, p. 21) who states that students "need to master seven survival skills: critical thinking and problem solving, collaboration and leadership, effective oral and written communication, accessing and analyzing information, curiosity, and imagination." Likewise, Shavinia (cited in Yamin, 2013) contends that the stakeholders who think critically and creatively are "guarantees of political stability, economic growth, scientific and cultural enrichment, psychological health, and the general prosperity of any society in the 21st century" (abstract).

Considering these two statements, our educational system in Iran is to a large extent different. Most of the high school students in Iran claim that they are poor in listening, speaking, and writing. However, they rarely complain about grammatical structures. The reason is that at Iranian high schools vocabulary and grammatical learning rules are paid due attention, but other activities related to the higher order of cognitive skills are almost neglected. Iranian students are not able to use English for communication. In other words, not only they do not attain full competence in the English language, but also they cannot interact with others with confidence. The results of this study can be useful for language teachers in deciding which path to take in order to

increase the proficiency level of the Iranian learners of English. It would also be helpful for material developers in designing the textbooks which could be suitable for the students' learning objectives. Finally, it would be beneficial for test designers and test makers to devise tests which lead to a better teaching and learning condition for both teachers and students. These issues are crucial, especially in Iran, where the concept of the university entrance exams is so embarrassing for the students, and accordingly, teachers try to teach to test while ignoring the above skills required for the learners to be equipped with cognitive abilities to think critically, act collaboratively, and solve their problems independently.

4. Background Literature

4.1 Theoretical

4.1.1 Iran's high school textbooks background

As Caringer (2001) believes, the significant difference between English as a foreign language (EFL) and English as a second language (ESL) context is that in ESL contexts English is the medium of instruction whereas, in EFL contexts, the subjects in schools are not taught in English. In Iran, English is taught as a foreign language, and learning occurs in classroom contexts with the use of specific textbooks and the teachers' management of classroom work. Due to the Islamic Revolution in 1979, English was incorporated into the educational system from the 2nd grade of junior high schools. However, currently, English education starts from the 1st grade of junior high schools.

Before the 1990s, the focus of English education was on reading and helping the students translate materials in English. The revised curriculum in the last decade emphasized communicative competence. However, it is still far from being communicative in our EFL context, Iran. Teachers use the grammar-translation method through English textbooks and ignore listening and speaking activities (Hosseini, 2007). According to him, the reason is the national exams.

4.1.2 Role of textbooks in EFL/ESL contexts

Sheldon (1987) defined textbooks as a kind of published book which was designed to improve the linguistic and communicative abilities of the language learners. Furthermore, Ur (1996) believed that textbooks could be

used as supporting teaching instruments. Tomlinson (2008) stated that textbooks were usually accompanied by workbooks, a teachers' book, or some other additional texts for reference. He also mentioned that textbooks could give cohesion to the teaching and learning process by providing support and those kinds of activities that would foster quick learning of the language.

Although researchers have agreed upon the importance of textbooks in ELT, different researchers have different opinions on whether textbooks can help or hinder teaching and learning processes. In the following section, the advantages and disadvantages of using textbooks are discussed.

4.1.3 Advantages and disadvantages of the use of textbooks

Some scholars believe that textbooks can provide ready material for the teachers not to spend time and energy preparing the materials (Edge and Wharton, 1998). Moreover, Allwright (1981) and Lee (1997) state that textbooks can enhance language learning and make it more effective. On behalf of teachers, textbooks can be used as a reference point so that they can manage their teaching progress (Tomlinson, 2008). According to him, textbooks are like maps that can provide guidance and direction in delivering the lessons. Textbooks are more useful for in-experienced and novice teachers as they can provide support and security. In EFL contexts where finding motivating and authentic materials is difficult, the issue of readily available textbooks becomes more prominent (McDonough and Shaw, 1993). O'Neil (1982) believes that students benefit from textbooks as well. Students can rely on their textbooks as a reference point and can monitor and keep track of their learning process. Textbooks can be used as a tool in a way that students can become familiar with what is going to be taught. Additionally, textbooks offer great help to the students in case of having incompetent teachers. According to Cunningsworth (1995), textbooks are useful because the students can learn and study by themselves without teachers.

Besides the above-mentioned advantages, some researchers highlighted the negative aspects of textbooks. The rationale behind the anti-textbook voices is going to be discussed. Tomlinson (2008) and Ur (1996)

argued against the use of textbooks as they believed that teachers would become uncreative in teaching and uncritical of contents of the textbooks. They believed that no textbook could address different learning styles, individual differences among students, and the requirements of different settings and environments. Tomlinson (2008) stated that teachers might teach the book rather than the language when relying too much on the textbooks. Lee (1997) and Tomlinson (2008) mentioned that in some exam-oriented cultures such as Hong Kong, textbooks were just used as a practice for the students' exams rather than as a tool for helping the students learn a language. Moreover, McGrath (2002) believed that too much reliance on textbooks might result in the fact that teachers might think that the activities and tasks of the textbooks would be superior to their creativity and opinions. Tomlinson (2008) mentioned that most of the textbook writers would not apply language acquisition principles in their textbooks and they merely relied on their intuition as what to be the best for language learning.

4.1.4 Need for textbook evaluation

Textbook evaluation is an essential issue since by selecting textbooks, teachers might have a significant influence on the teaching and learning process while referring to the selected textbooks (Cunningsworth 1995, McGrath 2002). Even in a more general sense, it can affect the entire EFL syllabus. In other words, the success or failure of an ELT course is affected by the textbooks. McGrath (2002) believes that little attention is paid to the pedagogical value of a textbook and mostly a textbook might be selected based on the attractive covers, or the prestige of the author or the publisher, or by the marketing of the publishers.

According to Tomlinson (2003, 2008 & 2010), ELT textbooks are not written based on language acquisitions and development principles, instead of commercial purposes and the financial success of the authors. Therefore, instead of having positive effects on the learning of the students, textbooks can lead to learners' failure. Tomlinson (2008) proposed two reasons for this issue. The first one would be the fact that since commercial success would become an essential factor, the textbooks were written based on the liking of the teachers, parents, and administrators with a focus on lexical items rather than providing communicative

opportunities for learners to learn a language communicatively. The second reason is the fact that textbooks are not based on the real needs of the learners but the perceived needs of them.

Given the above, it is crucial to conduct EFL textbook evaluation to ensure that the ELT textbooks can lead to teaching objectives, and at the same time, be economically viable to teachers and students. The wrong choice of textbooks can have adverse effects on both teaching and learning (Mukundan 2007, Sheldon 1988).

4.1.5 Textbook evaluation as a pedagogical process

Textbook evaluation involves measuring the potential value of a set of learning materials by making judgments about the effect of the materials on the people using them (Tomlinson & Masuhara 2004). The area of ELT textbook evaluation has lots of gaps which have to be filled by the researchers (Sheldon 1988, Litz 2005). Cunnings-worth (1995) and Ur (1996) suggested that for evaluating textbooks, there should be a leveled approach in which the first step would be to evaluate impressionistically and then in-depth evaluation.

Some researchers such as Daoud & Celce-Murcia, 1979; Ellis, 1997; Grant, 1987; and Mukudan, 2007 believe that textbook evaluation can take place at three different stages: pre-use, while-in-use and after use. Each of these stages has its benefits. Tomlinson (2003) states that pre-use evaluation facilitates textbook selection and its value on behalf of the teachers. Whilst-in-use evaluation is useful in examining the suitability of the textbooks by observing how it is used. After-use evaluation can help to indicate the short and long term implications of the use of a specific textbook. Textbook evaluation should be a cyclical process and should be evaluated in all of the above three stages (Allwright, 1981).

4.1.6 Bloom's taxonomy and its revised version: Theoretical framework

Bloom's initial taxonomy included six cognitive levels naming knowledge, comprehension, application, analysis, synthesis, and evaluation each of which had other subcategories except application. The following table shows the levels and their subcategories:

Table 1: Bloom's Original Taxonomy Adopted from Roohani, Taheri, Poorzangeneh, 2014

1. Knowledge
1.1. Knowledge of Specifics
1.1.1. Knowledge of Terminology
1.1.2. Knowledge of Specific Facts
1.2. Knowledge of Ways and Means of Dealing With Specifics
1.2.1. Knowledge of Conventions
1.2.2. Knowledge of Trends and Sequences
1.2.3. Knowledge of Classifications and Categories
1.2.4. Knowledge of Criteria
1.2.5. Knowledge of Methodology
1.3. Knowledge of Universals and Abstractions in a Field
1.3.1. Knowledge of Principles and Generalizations
1.3.2. Knowledge of Theories and Structures
2. Comprehension
2.1. Translation
2.2. Interpretation
2.3. Extrapolation
3. Application
4. Analysis
4.1. Analysis of Elements
4.2. Analysis of Relationships
4.3. Analysis of Organizational Principles
5. Synthesis
5.1. Production of a Unique Communication
5.2. Production of a Plan, or Proposed Set of Operations
5.3. Derivation of a Set of Abstract Relations
6. Evaluation
6.1. Evaluation in Terms of Internal Evidence
6.2. Judgments in Terms of External Criteria

The six main categories start from the most straightforward behavior to the most complex one. The categories can be considered as degrees of difficulties. That is the first one must be mastered before the next one can occur. Figure 1.2. shows the original taxonomy by Bloom (1956):

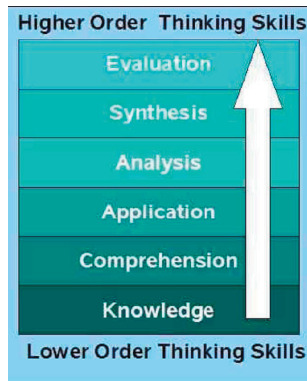


Figure 1. Bloom's Original Taxonomy adopted from (Razmjoo and Kazempourfard, 2012, p.6)

According to Marzano & Kendall (2007), when the focus on higher-level thinking in the 1980s became stronger, the need for revising the taxonomy emerged. Anderson & Krathwohl, 2001 used a framework to revise the taxonomy. Based on their modifications all the category names changed to verb forms to adjust for the way they were employed in objectives.

According to them, comprehension was changed to 'understand' and synthesis was changed to 'create' because they believed that creative thinking was a more complex cognitive process than critical thinking. In other words, one could be critical without necessarily being creative, but creative production often required critical thinking. Furthermore, they rearranged the categories as shown in the figure below comparing the original taxonomy with the revised one:

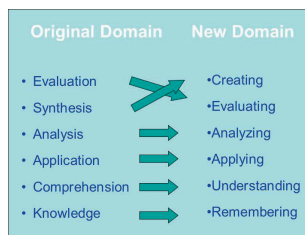


Figure 2. Comparison of the original taxonomy with the revised one adopted from (Churches, 2007, p.2)

This new taxonomy reflects a more active form of thinking and is perhaps more accurate. For quite a long time, other educators have built on Bloom's taxonomy, notably Anderson and Krathwohl (2001). What follows is some elaboration of these sub-skills which take the learner from lower level thinking to a higher level thinking.

1. Understanding: When we read or listen to a text, we process it and then try to understand it. In our native language, this is merely an instance of knowing what we are reading, seeing or listening to. For an EFL learner to do this in a foreign language, it takes longer time. Their teacher might ask questions like 'What kind of text, is it? Is it from a newspaper? Where would you read it?'

2. Applying: Studying a text, we take the new information and apply it to something. In the language classroom, this often means answering some comprehension questions or filling in a table with some facts or figures in the text. In other words, it is about task completion with the new information that we have understood.

3. Analyzing: In the analysis stage, we go back to the text and begin asking how the author's information is given. For instance, the learners may have observed information in the text, then we want them to support the main point(s) through proving some reasonings. Often this type of task requires to recognize how a text or its arguments are built up. That is to say, students are becoming more critical of the text and not accepting it at face value.

4. Evaluating: Evaluating is one of the key 'higher-order' critical thinking skills. At this stage students isolate the writer's arguments and views and evaluate whether the information valid and relevant or not. This necessitates asking students to check how much of the text is substantiated by evidence and how much belongs to the author ideas. If they try to use the information found in the text to support their writing, then their validity and relevance should be ensured. Perhaps it is the most complex stage for many language learners as it needs very high-level language skills.

5. Creating: This is the last of the five sub-skills. Studying a topic by drawing on many texts, students have to apply their new knowledge to make up something of their own out of it. For example, maybe they

are writing an essay stating their own idea but based on the facts and evidence they have investigated. Alternatively, perhaps they do a group presentation with other classmates where they present all the arguments for and against a view before then presenting their conclusions. What is missing from the above sub-skills is the remembering stage. It is an initial step of lower thinking skills in the Bloom's Revised Taxonomy, used for the retention and storage of the information gathered by the learners to be utilized in due time to help them to understand the new information in conjunction with those previously stored in their long term memory.

The above sub-skills can be shown as a set of linear steps or stairway progressing steadily upwards in order of difficulty and sophistication.

4.2 Review of related studies on Bloom's revised taxonomy

What follows is a review of the related literature on studies which have been carried out on the cognitive level of the English textbooks covering diverse subjects and diverse countries using Bloom's taxonomy as a guideline to classify the materials. Karns, Burton, and Martin (1993) analyzed the content of economic texts and the teacher's manuals. Their goal was to check if the content of the manual followed the course objectives specified in Bloom's taxonomy. Their results showed that the first three levels of thinking skills, remembering, understanding, and applying as lower level were given more priority in comparison with the higher order of analyzing, evaluating, and creating.

Another study by Ibrahim (1998) using Bloom's taxonomy, analyzed the questions in the history of six-graders in Iraq. The findings reported that the majority of the questions measured the low level of remembering and understanding, while only 2.2% evaluation and a 0% score was given to applying, evaluating, and creating.

Riazi and Mosalaejad (2010) studied Bloom's taxonomy using Iranian high school English textbooks. They concluded that the lower-order cognitive skills were more frequent on comprehension, application and remembering. The least obtained frequency belonged to the level of evaluating and in between came analyzing and creating.

Razmjoo and Kazempourfard (2012) employed the Interchange series

analyzing the activities and the exercises. Their analysis was based on three units of each of the four Course-books examining the six levels of Bloom's Revised Taxonomy. The results revealed that the course-books applied Bloom's lower order cognitive skills most frequently. Remembering was the most frequent code followed by applying. Understanding and evaluating cognitive knowledge had the lowest frequency carrying 0% of the distribution.

Igbaria (2013) measured the six units of the 9th grade of the English textbook Horizons. His main domain of analysis was the WH-questions believing that through questions, students' thinking skills can be enhanced. The results revealed that out of the 381 WH-questions in the investigated materials, the percentages ranged from 29.66%-2.36% attributed to the thinking levels of comprehension and evaluation respectively.

In the same vein, Shukran and Abdul Manaf (2017) attempted to find out if Bloom's Taxonomy of Educational Objectives show any relevance in the teaching of creative and critical thinking among students in Malaysia. Also, they tried to identify those missing elements in Bloom's taxonomy in teaching English literature as a subject. The results showed that the learning of English Literature involves the processing of Bloom's bottom low-order thinking skills, being EFL students in a non-English speaking setting. They believe that this type, of course, should nourish creative and critical thinking skills besides English language proficiency. They concluded that the teaching and learning of English Literature subject should be designed in a way to equip their students with the skills enabling them to analyze, evaluate, and synthesize coping with Bloom's higher order cognitive abilities as well. They also recommended that their students need not only Bloom's six levels of thinking skills but also other abilities like positive values towards learning English.

Another study conducted by Assaly and Smadi (2015) used Bloom's Taxonomy as a tool to classify the thinking levels of the questions at the end of the reading texts of Master Class textbook in Israel. The results showed that about 40% of the textbook's questions emphasized higher-order thinking skills, aligned with the objectives of the curriculum, while 60% covered the lower level. However, the proportions of the two levels

were not as balanced as expected.

Put it all together, almost all the researchers in the literature reviewed above have agreed upon the fact that the use of Bloom's taxonomy in educational systems around the globe would help language learners in the domain of English language to achieve their learning objectives. It would help them to become cognitively well-prepared to tackle the probable problems they may encounter in achieving their learning objectives analytically and creatively. Most of them found that the priority and emphasis were given to the use of lower order of Bloom's taxonomy in the materials analyzed and highly recommended the application of more higher order levels of analyzing, evaluating, and creating in their teaching and learning materials to enhance the students' higher thinking abilities.

5. University Entrance Exams (UEEs) in Iran

The UEEs, as a national enterprise, take place every year late June to screen the candidates who hold diplomas in different fields: Natural Sciences, Mathematics, Humanities, Arts, and Foreign Languages to enter state universities, Islamic Azad universities, and different Institutes of Higher Education across the country. The primary purpose behind such an exam is to select those participants who satisfy the requirements of the exam and possess enough knowledge of the particular fields of their choice and interest. This national exam has two main parts: A general test and a specific-field related test. The general test includes subjects such as Persian language and literature, Arabic, and English language plus the knowledge of Islamic culture studies. Each subject contains 25 multiple choice questions, 100 questions in total to be done in 75 minutes. The specific-field related tests try to measure the knowledge of their particular fields, and each specific test contains 70 questions to be done in 105 minutes. These sorts of information have been gathered through observing and studying the exams administered within the last three years, i.e. 2014/1393, 2015/1394, and 2016/1395 all over the country.

5.1 General test

The participants' general knowledge of these four areas is measured through 25 questions on each. The order of the tests is from the Persian language and literature, Arabic language, Islamic culture and studies, and finally the English language. Since our primary goal in this study is to concentrate on the English test and the different sections on each category to which they have been exposed during the seven years of junior and high schools, we elaborate more on this test. It has become a routine to start the 25 multiple choice English questions from number 76-100. The sections start from Grammar and Vocabulary (Part A) with 12 items, followed by Cloze Test (Part B) with five items, and finally Reading Comprehension (Part C) including two reading passages each with four items. Time allocated to finish the test is 20 minutes. This information can be found in the following table very briefly.

Table 2: Description of General English Test

Categories		3 Categories		
Grammar & Vocabulary	Cloze Test	Reading Comprehension	Total	Time
12	5	8	25	20m.

5.2 English Majors' test

After the administration of the general test in English, the group of Foreign Languages field (English, French, and German) will have tests on their main fields. Regarding these three Foreign language groups, the English group has a special test of English to measure the knowledge of their special main courses in English Language and Literature, English as a Foreign Language (EFL), and Translation Studies. In the special test of English, 70 questions are starting from numbers 101-170 with the allocated 105 minutes to do the job. The special test starts with Grammar (Part A) 10, Vocabulary (Part B) 15, Sentence Structure (Part C) 5, Language Functions (Part D) 10, Cloze Test (Part E) 15, and Reading Comprehension, 3 passages, (Part F) 15 (5 questions from each passage), questions, respectively. All of the questions, regardless of being general or special English, focus on the recognition of the correct answers ignor-

ing the production and the candidates' abilities to evaluate and create anything on their own. The following table illustrates the components of the English tests.

Table 3: Description of English Majors' Test

Category & Frequency	Category & frequency	Category & Frequency	Category & Frequency	Category & Frequency	Category & Frequency	6 Categories
Grammar	Vocabulary	Sentence Structure	Language Functions	Cloze Test	Reading Comprehension	Total No. of Questions
10	15	5	10	15	15	70

The above two tables (2 & 3) and their descriptions classify the categories and frequencies of the items in the two types of tests in English as UEEs screening the registered candidates to enter a university if they satisfy the requirements.

6. Method

6.1 Design

To conduct this study, the researchers employed a quantitatively-designed descriptive approach in which no human participants were involved. Instead, the pre-university English textbook (1 and 2) was chosen and analyzed content-wise against Bloom's Revised Cognitive Skills Taxonomy. The data extracted from the text were codified and quantified to check its alignment with the hierarchy. Likewise, the university entrance exams' samples were checked against Bloom's taxonomy for the same reason.

6.2 Materials

The teaching materials taught during the last year of high schools located at the Education Office District No. ONE in Shiraz, Iran and used for this study was English textbook (1 and 2) evaluated content-wise. There were eight lessons in each volume. Each lesson contained six parts. They were checked against the BRT (2005) elaborated more in table 4 below. The new version of Bloom's Taxonomy, with examples and keywords, is shown below.

Table 4: Examples and Keywords of the New Version of Bloom's Taxonomy Adopted from Clark, D.R., 2015

Category	Definition	Keywords	examples
Remembering	Recall or retrieve previously learned information.	defines, describes, identifies, knows, labels, lists, matches, names, outlines, recalls, recognizes, reproduces, selects, states	Fill in the blanks with appropriate words
Understanding	Comprehending the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.	comprehends, distinguishes, estimates, explains, extends, generalizes, gives an example, infers, interprets, paraphrases, predicts, rewrites, summarizes, translates	Answer the questions according to the reading
Applying	Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the workplace.	applies, changes, computes, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses	Make sentences using the given pattern and words.
Analyzing	Separates material or concepts into parts so that its organizational structure may be understood. Distinguishes between facts and inferences	analyzes, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates	Compare the following words to see how they sound differently.
Evaluating	Make judgments about the value of ideas or materials.	appraises, compares, concludes, contrasts, criticizes, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarizes, supports	Which of the following is the best answer to the question? Why? On the scale, show how you evaluate the words.
Creating	Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.	Categorizes, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organizes, plans, rearranges, reconstructs, relates, reorganizes, revises, rewrites, summarizes, tells, writes	Make sentences using the scrambled words.

Regarding the content of the UEEs, all of the questions in the two types of tests, General English and English majors' test, are prepared to test the candidates' recognition and understanding with no items to measure their English language production ability. Mostly they concentrate on the lower levels of their cognitive skills or abilities (tables 2 and 3). This is directly against the teaching and learning objectives of any educational system which is, in turn, against Bloom's Revised Taxonomy.

6.3 Instrument

An evaluation instrument, against which the English fourth year high school textbook (English 1 and 2) was evaluated, was Bloom's (2005) Revised Cognitive Skills Taxonomy as shown in table 4 above. Using a coding scheme, all parts in the pre-university English textbook (grade 4) were coded and calculated in terms of learning objectives and the frequency of each learning objective.

6.4 Data collection procedure

The BRT was used to develop a coding scheme for classifying and evaluating the content of the textbook. Based on Bloom's definitions of different levels of the cognitive domain, the critical word examples were extracted and used. The coding scheme represented the six levels of learning objectives from the lowest level of remembering and understanding, through more complex and abstract mental levels of creation and evaluation. The coding categories were labeled as 1) remembering 2) understanding 3) applying 4) analyzing 5) evaluating 6) creating. Each coding category included important words that represented intellectual activity on each for each level shown in Table 4 above. Remembering, understanding, and applying are referred to as lower levels of thinking skills while analyzing, evaluating, and creating are said to belong to the higher order of thinking skills.

The reliability of the coding scheme was examined through inter- and intra-coder reliability. Intra-coder reliability was 0.97, and the inter-coder reliability was 0.92. For the inter-coder reliability, three MA students of TEFL at Shiraz University codified the lessons. To check the inter-coder reliability, the correlational analysis in the SPSS which revealed the agreement between the averages of the coders. To verify the

intra-coder reliability, the same amount of data was coded twice by the researchers, and the degree of consistency in the two coding attempts was found to be 97%.

7. Results

7.1 Result of the pre-university english textbook analysis

The following table illustrates the number of lessons in the textbook, the length of the texts, the readability score of the texts, the number of the parts in each lesson, and the skills which are included in the textbook.

Table 5: Overall Feature of the Pre-university English Textbook

Pre-University textbooks (grade 4)	Number of lessons	Average Text Length	Readability score	Number of parts in a lesson	Skills
	8	562.45	55.4	6	Reading Grammar Vocabulary

Table 6 below illustrates the frequency and percentage of learning objectives and the distribution of different levels of the BRT in the English textbook. These results were obtained through the codification of the whole content of the textbook including the exercises.

Table 6: Distribution of Different Levels of Bloom's Revised Taxonomy in the Pre-university English Textbook

Learning Objective	Remembering	Understanding	Applying	Analyzing	Evaluating	Creating
Frequency	36	62	18	5	23	15
Percentage	23.1 %	38.6 %	11.3%	3.6 %	14%	9.4%

As shown in the above table, the most common learning objective is understanding as a low level of thinking skill, while the least frequent one is Analyzing as the higher order of thinking skill. The above table represents that remembering, understanding, and applying as lower levels of

cognitive skill constitute 116 instances (73%), while analyzing, evaluating, and creating carry 43 instances (27.00%). This result indicates that 73% on the content of the textbook is allocated to the lower order of thinking or cognitive skills while only 27% of the materials in the textbook is involved in the higher order of thinking skills. The results shown in the above table are in sharp contrast with the BRT and the universal belief in the educational systems which emphasize the fostering of the higher levels of cognitive skills to train and empower learners to become independent and autonomous when they finish their high schools. The overall results of the two categories are shown in table 7 below.

The six levels of the BRT can be categorized into two groups, namely 'lower' and 'higher' order cognitive skills. Therefore, the information can be rewritten in the following form as shown in Table 7.

Table 7: Statistical Description of frequency, mean, standard deviation

Categories	frequency	Mean	Standard Deviation
Lower order: Remembering, Understanding, Applying	116	38.66	54.10
Higher order: Analyzing, Evaluating, Creating	43	14.3	20.27

The above table represents that 'remembering' 'understanding,' and 'applying' as lower levels of cognitive skills constitute 116 instances (73%), while 'analyzing,' 'evaluating,' and 'creating' carry 43 instances (27.00%). This result indicates that 73% of the content of the textbook is allocated to the lower order of thinking or cognitive skills while only 27% of the content in the textbook is involved in the higher order of thinking skills. The results shown in the above table indicate adverse with the BRT and the universal belief in the educational systems which emphasize that educational authorities and teachers should foster the higher levels of cognitive skills to train and promote the learners' abilities to become autonomous when they graduate. Likewise, according to the above table, lower-order cognitive skills, 'remembering', 'understanding', and 'applying' are more frequent in the pre-university textbook than the higher-order cognitive skills as 'analyzing', 'evaluating', and 'creating,'

showing that teachers and materials developers paid their utmost attention to focus more on the former rather than on the latter to teach their students and prepare their teaching materials, respectively.

A Chi-square test was run to examine if the two means of the two cognitive skills were statistically significant, shown in table 8 below.

Table 8: Chi-Square analysis, a comparison between the two means of higher and lower order cognitive skills

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	159.000 ^a	5	.000
Likelihood Ratio	185.615	5	.000
Linear-by-Linear Association	67.879	1	.000
N of Valid Cases	159		

a. 4 cells (33.3%) have expected count less than 5.
The minimum expected count is 1.35.

The result of the comparison between the two means ($\chi^2(5) = 159.000$, $P < 0.05$) indicates that the distinction between the lower and higher orders of cognitive skills (remembering, understanding, and applying versus analyzing, evaluating, and creating) is statistically significant at .05 level. Therefore, it can be concluded that there is a statistically significant difference between the lower and higher cognitive skills in the pre-university textbook and the null hypothesis is rejected.

7.2 Results of the content analysis of UEEs

As the categories and frequencies of the items in the two types of tests in Tables 2 and 3 have shown, the UEEs do not cope with what is suggested and emphasized by experts in the field of language teaching and learning including Bloom himself. He says that teachers and the test materials employed by them should be implemented in such a way that they can enhance their students higher cognitive level to become able to perform creatively in their academic environment. Moreover, they can analyze, evaluate, and find solutions to the problems during their academic careers. The evaluation of the pre-university textbook and outside materials employed and taught to the students are mainly geared towards the success in the entrance exam of the universities without paying least attention to the higher order of thinking/ cognitive skills such

as analyzing, evaluating, and creating specified in the Bloom's Revised Taxonomy. This selection of the teaching materials is geared towards the format of the UEEs which have been designed in a way that the items in the tests mainly focus on memorization and understanding, ignoring the cognitive/thinking skills specified in the BRT.

8. Discussion of the Results

In the previous section, the analyses of the data collected through the BRT were presented, and the related results were reported in each section. In what follows, the research questions of the study are answered. Then, the findings will be compared with those of the past studies in each section.

To answer the first research question, looking for agreement/concordance between the pre-university English book and the BRT, the whole content of the textbook including the exercises were codified using the BRT. The items in tables 7 and 8 indicated that lower-order cognitive levels were more prominent in the pre-university English textbook. The understanding level was observed to be the most common objective while remembering was the second. Furthermore, it should be noted that higher-order skills were present in the English pre-university textbook although they were not frequent enough revealing that attention to higher-order cognitive skills was neglected in the pre-university textbook. This could be attributed to the result of the educational system of Iran, which emphasized rote learning and memorization supporting Riazi and Mosalanejad (2010) contention. Instead of paying attention to higher-order skills such as 'analyzing,' 'evaluating,' and 'creating,' the book focused on lower-order skills. In other words, the students were not asked to produce or use the language; rather they were asked to memorize the materials for the university entrance examination as a high-stakes test in which all the items have incorporated four multiple choice options to be selected by the participants. The results of this study were in line with Riazi (2010) who mentioned that students, teachers, and textbook developers were affected by the way teachers teach to prepare the students to enable them to get accepted in the university entrance exam. Students did not analyze, evaluate, or create

the content of the textbook. The teachers did not feel to be responsible for going through these higher-order cognitive skills and instead worked on grammatical items and memorization of the vocabulary items in the reading sections of the book geared towards the objectives of the national exam to enter the universities if they satisfy the requirements of each of them. Textbook developers write this kind of textbooks in favor of these lower-cognitive levels. It is obvious that textbook developers, teachers, and university exam test makers are all following the same route ignoring the stakeholders' teaching and learning objectives. Our results also corroborated those of Igbario (2013), Karns, Burton, & Martin (1993), Ibrahim (98), Shukran, & Abul Manaf (2017) from different countries indicating more emphasis on the Bloom's lower order thinking skills at the cost of less stress on the higher order thinking skills. The response to the second question, asking if the lower and higher thinking skills hierarchy in the two types of test follows the BRT, is negative due to the fact that the format of all the items in the tests, whether General English or Special English for all majors in English language, has been designed in four multiple-choice items looking for the recognition of the correct answers on the part of the candidates who take part in the entrance exam each year. This is sharply against the hierarchy provided in the BRT as shown above. Moreover, in our Iranian context, more emphasis has been put on structure and grammar ignoring other modes of English language learning and teaching lacking an integrated approach which most probably would lead to more skillful students in their academic and real-life achievements. As Hosseini (2007) stated: "In Iran, teachers continue to use the grammar-translation method through textbooks which lack listening and speaking activities and deploy grammatical exercises disguising as 'writing' activities. They may do so because the standardized national exams are still mostly structural in orientation" (p.133). Moreover, Dahmardeh (2009) states that in Iran the focus of most English courses is on reading skills and one of the important channels of obtaining information and knowledge, i.e., the aural channel is mostly overlooked. The results of our study by analyzing the English textbook at the pre-university level and UEEs are in line with these research results.

9. Concluding Remarks

Researchers in our EFL setting have contended that the majority of students in our schools cannot make connections between what they are learning and how their knowledge will be used. This problem is attributed to the traditional learning environment in which learning is solely a product of machinelike input and output with no chance given to the learners to cooperate with their classmates or their teachers and share their ideas (cf. Hosseini, 2007; Riazi and Mosalanejad, 2003, 2010; Yarmohammadi 2002). Furthermore, students cannot carry out activities and solve problems in a way that reflects the nature of learning tasks in the real world. In this sense, contextual learning, as a very influential factor in meaningful learning (Bergman et al., 2012) has been ignored in our school environment. Contextual, collaborative, and constructive teaching approaches leading most probably to higher students' satisfaction, motivation, and effective self-regulative learning are absent in our Iranian context in general, school setting in particular. In this way, students cannot discover meaningful relationships among abstract theoretical information and practical applications in the context of the real world.

The development of problem-solving skills is another important factor in academic success as well. Helping students learn how to solve a problem is a critical skill for school readiness and academic achievement (Chipman & Segal, 2013; Pianta, 1999). For example, students with high problem-solving skills might monitor, evaluate, and regulate their learning. There are some necessary steps to problems solving: (a) identify the problem, (b) list of possible solutions, (c) weigh the possible solutions, (d) choose a solution to try, (d) put the solution into practice, and (e) evaluate the impacts of solution (Chipman and Sagal, 2013). For having good problem-solving skills, problem discovery is one of the most significant stages of the problem-solving sequence. To be a reasonable problem finder, students need to be highly creative and motivated. For instance, if students have difficulties in understanding the nature of problems, they might not be able to develop well-organized and to think of problem-solving strategies. In this sense, students should ex-

pand awareness of general problem-solving strategies with the help of teachers (expert knowledge) and peers. Unexpectedly, this opportunity for our high school students in Iran is provided neither in their teaching materials nor in the UEEs and in their teachers' approaches to teach them the way experts in the field of language learning and teaching and cognitive psychology have emphasized and suggested.

Therefore, it is very significant for educators and learners to understand and document the effects of human cognition on learning and teaching objectives starting from the lower level towards the higher level of cognitive skills devised and emphasized by Bloom (2005). It has been highly recommended that teachers, practitioners, and learners in most educational settings around the world, including our educational system in Iran become aware of such advantages and apply them effectively. Practical usage of cognitive theories in education will help us to have better learning environments for our future generations. In our country, it is highly recommended that our education authorities around the country pay more and closer attention to these very vital and crucial findings of the experts in the fields of language learning and teaching, cognitive psychology, and other related disciplines. What the high ranking authorities, teachers, and practitioners in Iran need to do is to help revise the present curriculum, and language planning for our students to provide them with appropriate and useful opportunities to achieve a higher order of thinking skills in academic and real-life situations. Likewise, EFL texts should incorporate teaching materials of diverse mental demands to help EFL learners to do highly thinking activities in English at the school and university level. In the same vein, textbooks writers and test developers should pay attention to the different mental abilities of the learners and their needs based on their grade level. They should also be aware of the changes in the curriculum whenever they want to write new English textbooks and test items following the recommended teaching and learning objectives.

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