

Analyzing Cognitive Processes and Multiple Intelligences in the *Top-Notch* Textbooks

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Abstract

This study aimed to analyze the *Top-Notch* series (*Fundamentals*, *Top-Notch 1*, *Top-Notch 2*, *Top-Notch 3*, *Summit 1*, and *Summit 2*) to find out the extent to which these ELT textbooks could represent the six cognitive processes (i.e., remembering, understanding, applying, analyzing, evaluating, and creating), as well as multiple intelligences (i.e., verbal, logical, spatial, bodily, musical, interpersonal, intrapersonal, naturalist, and existential) drawing on revised Bloom's taxonomy (BRT) and multiple intelligence (MI) frameworks. To this end, content analysis was done to obtain the frequencies and percentages of various cognitive processes, ranging from lower- to higher-order levels, and nine intelligences. Results showed that remembering and evaluating processes received the highest and the least percentages of cognitive processes in all the six textbooks; applying, understanding, creating, and analyzing came in between. Moreover, the higher-order processes (i.e., analyzing, evaluating, and creating) were less frequently represented in the *Top-Notch* textbooks than lower-order ones (i.e., remembering, understanding, and applying). Furthermore, verbal and existential intelligences received the highest and the least percentages of multiple intelligences in *Top-Notch* series. The results imply that there is a need to improve the *Top-Notch* textbooks in terms of higher-order cognitive processes and provide ground to develop various types of intelligences.

Keywords: Cognitive Processes; Multiple Intelligences; *Top-Notch* Textbooks

1. Introduction

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According to Tomlinson (2003), materials are considered anything which is used to help language learning. Among teaching materials, textbooks play an important role in the realm of language education (Richards, 2001), and, following the teacher variable, they are considered as the second important factor in language classrooms (Riasati & Zare, 2010); language learners can rely on them as a self-study source and they can be useful tool in the hands of the language teachers, especially the novice teachers (Wen-Cheng, Chien-Hung, & Chung-Chieh, 2011). Textbooks are “an important means of satisfying the range of needs that emerge from the classroom and its wider context” (Hutchinson & Torres, 1994, p.327). Second/foreign language (L2) textbook is “an almost universal element of [language] teaching” (Hutchinson & Torres, 1994, p.315). They represent the visible heart of any English language teaching (ELT) program (Sheldon, 1988) and can reflect trends in ELT, learners’ diverse intelligences, or the pedagogic, psychological, and linguistic preferences and biases of their authors (Allwright, 1982); they can display (in)consistencies between ‘educational aspects’ and ‘commercial roles’ (Graves, 2000). Therefore, it is so important for us to know not only how to use L2 textbooks, including ELT textbooks, but also how effective they can be (Sheldon, 1988).

L2 textbook selection is not an easy task for the teacher. As White (1997) states, “the selection of a textbook is one of the most important decisions a teacher will make in shaping the content and nature of teaching and learning” (p. 2); it sometimes requires that the teacher fully considers learners’ needs and styles, gathering information on the levels of their cognitive learning and thinking processes and intelligences, identifying how strength or weak learners are in each intelligence, and making serious attempts to minimize their weaknesses in any specific intelligence to bring about motivation in learners. Perhaps, one way to know which L2 textbooks are effective and establish pedagogical values to make a right choice for adopting a textbook for our L2 teaching is through textbook analysis and evaluation. Textbook evaluation is a method that includes measuring the value of a set of learning materials, and making judgments about the impact of the materials on the individuals utilizing them (Tomlinson, 2003). Also, as Genesee (2001) states, “evaluation enables us to make informed decisions through which student achievement will increase and educational programs will be more successful” (p. 150). In this light, it is logical to evaluate ELT textbooks in terms of levels of cognitive processes which can engage L2 learners in thinking skills, and the types of intelligences (e.g., verbal, logical, interpersonal, and so on) they tend to foster.

The revised Bloom's taxonomy (RBT) is a useful instrument for textbook evaluation and analysis of the cognitive processes in ELT textbooks. 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). The RBT can be a good choice to assess the basic skills and aligning language teaching materials and learning activities with the cognitive thinking processes. It is a practical tool for course evaluation (Marzano & Kendall, 2007) and assists L2 teachers form alignment between evaluation and course objectives (Krathwohl, 2002).

In addition to the RBT, another tool which is useful for analysis of ELT textbooks is drawing on multiple intelligences (MI) theory. "MI theory focuses on the individuality of the learners and their different capabilities. It helps students learn the way they are more skilled at" (Razmjo & Jozaghi, 2010, p. 60). As Stefanakis (2002) asserts, every individual has several intelligences and, to make the instruction more effective; it is the instructor should use the abilities of the individual from the very beginning through activities in instructional textbooks. According to Armstrong (2009), MI theory can influence language learners' behavior in the classroom simply by creating an environment where learners' needs are recognized and attended to throughout the school day. Thus, it is potentially worth shedding light on the contribution of MI theory in evaluating the suitability of an ELT textbook for a specific situation.

L2 textbooks are psychologically essential for L2 learners since their language progress and achievement can be measured when we use textbooks (Haycraft, 1998). In sum, the analysis of L2 textbooks requires close examination of texts, exercises, and activities in terms of the level of cognitive processes which a textbook offers to learners and give insights into cognitive levels. Besides, to actively engage learners in L2 learning, we should consider the multiple ways learners can learn the target language through L2 textbooks and tapping into a variety of multiple intelligences as a way of increasing learners' participation. Therefore, this study is intended to analyze the *Top-Notch* series, which is commonly used in the language schools and institutes, to see the extent to which this ELT textbook series can engage cognitive processes and intelligences through the activities provided in them. The results may call a need to supplement these ELT textbooks to best enhance all the

intelligences and cognitive processes. They may also help EFL teachers choose textbooks that are suitable for their learners in applying MI theory and RBT to their teaching.

2. Literature Review

2.1. Bloom's Taxonomy

Bloom (1956) challenged teachers to categorize their current curriculum focused on cognitive processes in order to implicate missing parts when they were creating a curriculum. Bloom also declared that by “comparing the goals of their present curriculum with the range of possible outcomes [this comparison] may suggest additional goals they may wish to include” (p. 2). He developed taxonomy of educational objectives in terms of six-level description of thinking, which has been widely adapted and used in variants contexts ever since. Bloom initially stated that the cognitive domain revolves around knowledge, comprehension, application, analysis, synthesis, and evaluation. Emphasizing higher-level thinking and a movement to standards-based curriculum, Anderson (2000), a former student of Bloom, led a new group and changed the order of objectives. Anderson and Krathwohl (2001), and Krathwohl (2002) later updated the taxonomy and called it the revised Bloom's taxonomy (RBT) which consisted of remembering, understanding, applying, analyzing, evaluation, and creating. As Hanna (2007) states, they defined cognition as thinking (an active process), used verbs (instead of nouns) to describe the action involved in thinking (see Figure 1 which displays the difference between old and new versions of Bloom's taxonomy).

According to Anderson and Krathwohl (2001, pp. 67-68), the cognitive processes of the RBT are ordered from simple remembering to higher-order critical and creative thinking processes:

- Remembering: retrieve relevant knowledge from long-term memory.
- Understanding: construct meaning from instructional messages, including oral, written, and graphic communication long-term memory.
- Applying: carry out or use a procedure in a given situation.
- Analyzing: Break materials into parts and determine how the parts relate.
- Evaluating: Make judgments based on criteria and standards.

- Creating: Put elements together to form a coherent or functional whole.

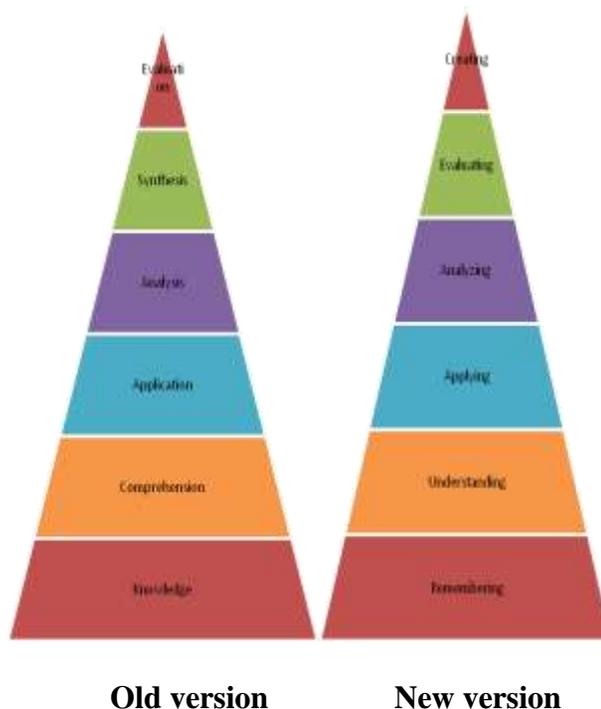


Figure 1. The old and new versions of Bloom's taxonomy.

2.2. MI Theory

Binet's and Simon's IQ test in 1904, which was intended to identify learners' remedial attention, was the primary incentive of Gardner (1983) to develop the theory of multiple intelligences. IQ tests were deemed appropriate measurement instruments for achievement and success predictions for about a hundred years (Gardner, 1999). Gardner (1983), however, criticized this view of single static intelligence and introduced his alternative theory called multiple intelligences. Gardner (1983) took the advantages of previous research on biological sciences, developmental psychology, logical analysis and traditional psychological research to introduce seven intelligences:

- Verbal/linguistic intelligence refers to the degree of efficiency of the language used by an individual.
- Logical/Mathematical intelligence refers to the degree of efficiency of reasoning and using numbers.

- Spatial/visual intelligence refers to individuals' abilities to visualize and judge shapes, colors, etc through mental or graphical capacities.
- Bodily/kinesthetic intelligence refers to the individuals' using of body movements and gestures to convey meaning or with the aim of problem solving.
- Musical intelligence refers to the capacity of an individual to use music in order to let out feelings.
- Interpersonal intelligence refers to the individual's ability to take part in interactive situations and participate in the negotiation of meaning.
- Intrapersonal intelligences refer to the individual's ability to understand him/her.

Later, Gardner (1999) introduced two other intelligences, called naturalist and existential. Naturalist intelligence is "the ability to make use of nature and develop classifications of natural phenomena and species with the aim of understanding nature" (Gardner, 1999, p. 33). As for existential intelligence, Gardner (1999) asserted it is:

The capacity to locate oneself with respect to the furthest reaches of the cosmos ... and the related capacity to locate oneself with respect to such existential features of the human condition as the significance of life ... and such profound experiences as love of another person or total immersion in a work of art. (p. 60)

Evaluating ELT materials has been a concern of some researchers in the field of L2 learning. The review of literature on textbook evaluation shows that most of the studies are concerned with the overall suitability or suitability of L2 textbooks with respect to the language components and skill. For instance, Hamiloğlu and Karlıova (2009) analyzed the five selected ELT textbooks, *Countdown to First Certificate*, *Advanced Master class*, *Grammar in Context 2*, *New Headway Advanced*, and *Top-Notch 2*, in terms of vocabulary selection and teaching techniques in the textbooks. In another study, Jahangard (2007) tried to evaluate four EFL textbooks, which were used in Iranian senior high schools by the Ministry of Education, based on 13 overall criteria which were extracted from various evaluation checklists. Likewise, Riasati and Zare (2010) evaluated *New Interchange* textbooks to determine overall suitability of these textbooks through Litz's (2005) questionnaire.

Other studies have focused on the significance of visual elements and literacy in ELT (e.g., Roohani & Zarei, 2013), gender or the status of sexism (e.g., Ansary & Babaii, 2003), culture (e.g., Tajeddin & Teimournezhad, 2014), and racism (Lee, 2009), among others. The review shows that there are studies which have applied Bloom's taxonomy and MI approach to evaluate the ELT textbooks; however, such studies are comparatively quite small in number. For instance, Razmjoo and Kazempourfard (2012) conducted a study to analyze *Interchange* textbooks based on the RBT framework. They wanted to find out to what extent *Interchange* textbooks were consistent with the taxonomy. After collecting data, Razmjoo and Kazempourfard revealed that the lower-order processes of the RBT were the most prevalent learning processes in these textbooks. Also, Roohani, Taheri, and Poorzanganeh (2014) analyzed *Four Corners* in the light of the RBT to see to what extent these textbooks cover the cognitive processes of the RBT. They found that remembering process was the most frequent level and creating process was the least frequent level.

As for studies on evaluating the ELT textbooks based on MI theory, Rezvani and Amiri (2012) were interested in discovering to what extent eight English textbooks, published by SAMT, covered MI theory. The evaluation indicated that textbook activities generally involved four intelligences: verbal, intrapersonal, logical, and spatial intelligences; moreover, these textbooks were not responsive to the diversity of intelligences. Moreover, using Botelho's (2003) checklist, Taase (2012) worked on ELT textbooks used in guidance school of Iranian education to see to what extent MI theory had been met. He found that verbal and visual intelligences were the most predominant ones; he did not find any activity which promoted bodily, musical, and naturalistic intelligences.

All in all, the above textbook studies highlight some pedagogical and academic perspectives toward L2 (including EFL) learning through the analysis done on the L2 textbooks. But, there is still more needs for evaluating ELT textbooks used in academic courses and language programs in terms of cognitive processes of the RBT and MI theory, particularly in the context where English is used as a foreign language. Also, the close examination of the review literature indicates that many L2 textbooks cannot satisfy learners' needs and personal abilities. Given the effectiveness of Bloom's taxonomy and contribution of MI theory, this study seeks to find out which processes of the RBT and individual intelligences are more prevalent or dominant in the *Top-Notch* series.

This way, it examines the extent to which these ELT textbooks reflect the cognitive processes of the RBT as well as multiple intelligences (i.e., intelligence diversity in these textbooks). Additionally, it examines these ELT textbooks in terms of the lower-order (i.e., remembering, understanding, and applying) and higher-order (i.e., analyzing, evaluating, and creating) cognitive processes. Accordingly, following research questions have been developed:

1. Which processes of the RBT are prevalent in the *Top-Notch* series?
2. How are *Top-Notch* series evaluated in terms of lower-order and higher-order cognitive processes?
3. Which individual intelligences are predominant in the *Top-Notch* series?

3. Methodology

3.1. Materials

For the purposes of this study, *Top-Notch* series (Saslow & Ascher, 2012), which was commonly used in many English language institutes, was selected. According to Saslow and Ascher (2012), *Top-Notch* series is designed for a six-level communicative course. Six textbooks selected for the purpose of the present study include: *Fundamentals* (Saslow & Ascher, 2012a), *Top-Notch 1* (Saslow & Ascher, 2012b), *Top-Notch 2* (Saslow & Ascher, 2012c), *Top-Notch 3* (Saslow & Ascher, 2012d), *Summit 1* (Saslow & Ascher, 2012e), and *Summit 2* (Saslow & Ascher, 2012f). Each textbook consists of 10 units, except for *Fundamentals* which contains 14 units. Half of the units are covered in section A and the other half in section B. Each unit is covered in four sessions and made up of four two-page lessons, a Preview section (except for *Fundamentals*), and a Review section, in which every two-page lesson is designed for one class session. Each lesson provides vocabulary, grammar, and social language contextualized in all four skills.

3.2. Procedure

In order to collect data, the content analysis was done in the qualitative and quantitative manners. To do so, five units of each *Top-Notch* textbook were first randomly selected to find out the dominant cognitive process(s) and intelligence(s) and the extent to which cognitive processes of the RBT and MI were covered. The units randomly selected were 2, 4,

6, 8, 12 from *Fundamentals*; 1, 3, 5, 7, 9 from *Top-Notch 1*; 1, 3, 5, 6, 8 from *Top-Notch 2*; 1, 3, 7, 8, 10 from *Top-Notch 3*; 3, 5, 6, 8, 9 from *Summit 1*; and 2, 4, 6, 8, 10 from *Summit 2*. It was assumed that selecting five units from each textbook could represent the profile of cognitive processes and MI for the whole textbook; the reason was that the structure of the units was the same and types of activities were similar in other units.

Second, the content analysis of *Top-Notch* textbooks activities was done based on the RBT by three raters. The revised Bloom's definitions of different processes of the cognitive domain were carefully studied and key-word examples were taken out. As very briefly shown in Appendix A, the framework represents the six processes of the cognitive domain from the simple recalling or recognizing of facts (as the lowest process) through increasingly more complex and abstract mental processes of evaluating and creating. The frequency and percentage of each process were counted through the randomly-selected units in each textbook by the three raters.

Third, regarding MI theory, the content analysis of *Top-Notch* series activities was also done by using Botelho's (2003) checklist, which was developed based upon definitions of intelligences (see Appendix B for a summary of the checklist). The raters analyzed each activity of the randomly-selected units to count the frequency and percentage of each of nine intelligences.

Meanwhile, in order to ensure that the content analysis was reliable, a training session was held in which the RBT and MI frameworks were discussed by the raters. Also, they analyzed one complete unit of *Top-Notch 1* in terms of the above mentioned frameworks. Also, current researcher employed inter-rater and intra-rater reliability. Inter-rater reliability was obtained; the agreement coefficient was found to be high (above .95). Regarding to ensuring intra-rater reliability, the raters did the content analysis twice with a three-week time interval; the degree of consistency in the two analysis attempts was found to be high (above .95).

3.3. Sample Activities

To better understand data analysis procedures, two sample activities, along with some explanation for analyzing the activities in the light of the RBT and MI frameworks, are presented below. Figure 2 shows one sample activity which caters basically for lower-order cognitive processes.

Review

A ^{4:17} **Listening comprehension** Listen to each conversation and circle the occasion or the people they are talking about. Then circle T if the statement is true or F if it is false. Correct any false statements.

<p>1 an engagement / a reception / a honeymoon</p> <p>2 an engagement / a reception / a honeymoon</p> <p>3 a bride / a groom / relatives</p> <p>4 a bride / a groom / relatives</p>	<p>T F The man who is speaking is the groom.</p> <p>T F The man who is speaking is the groom.</p> <p>T F The woman who is speaking is the bride.</p> <p>T F The woman who is speaking is a guest.</p>
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B Complete each statement, using the unit Vocabulary. Then write the name of a holiday or celebration you know for each statement.

Name a holiday when people . . .	Examples
1 _____ fireworks.	
2 _____ in parades.	
3 _____ picnics.	
4 _____ time with their families.	
5 wear _____	
6 give _____ gifts.	
7 _____ other well.	

C Complete each sentence with an adjective clause.

- 1 A groom is a man who has just gotten married _____
- 2 Eid al-Adha is a religious holiday _____
- 3 A honeymoon is a vacation _____
- 4 A hanbok is a traditional dress _____
- 5 A wedding reception is a party _____
- 6 Chuseok is a holiday _____

Figure 2. A sample shot of review activity.
(taken from *Top-Notch 3 B*, p. 84)

The review activity displayed in Figure 2 addresses several skills and involves several cognitive processes. The first part (part A) is tagged as *listening comprehension*, which contains two practices: learners should listen to a conversation and circle names events, and then check the statement as true or false. Based on the descriptions of the RBT, these types of activities include comprehension (i.e., the understanding process); they engage learners in understanding the audio and answering questions. According to Bloom (1956), by means of understanding process, learners can demonstrate understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions, and stating the main ideas; translation, interpretation, and extrapolation belong to comprehension (i.e., understanding).

In the subsequent parts (Parts B and C), learners are supposed to apply their previous knowledge in order to answer the questions, which triggers the third category of the cognitive processes, that is, applying process. According to Bloom (1956), applying level enables learners to

apply new knowledge and solve problems in new situations by applying acquired knowledge, facts, techniques and rules in a different way. Additionally, learners should write the names of holidays they know in their own country. In other words, they should recall the names of holidays i.e., knowledge of specific terminology and conventions. Therefore, the remembering process of the cognitive domain is also involved. Bloom (1956) states that learners can show the memory of previously learned materials by recalling facts, terms, basic concepts, and answers (e.g., knowledge of specific terminology, specific facts, knowledge of ways and means of dealing with conventions, trends and sequences, classifications and categories, criteria, methodology, and knowledge of the universals and abstractions in a field).

Figure 3 demonstrates one sample activity which basically caters for verbal intelligence.



Figure 3. A sample shot of *vocabulary* activity.
(taken from *Fundamentals A*, p. 30)

The activity displayed in Figure 3 requires L2 learners to listen to an audio and repeat new vocabulary while looking at the pictures. The learners use their verbal intelligence to describe the people. The general goal of *vocabulary* activity is to boost vocabulary knowledge of learners and develop listening skill. This activity which invites EFL learners to increase linguistic knowledge is said to engage verbal intelligence, that is, the efficiency of the language used by an individual (Gardner, 1983). As Bottelho (2003) states, verbal intelligence is involved when learners practice listening and speaking. In addition, this activity invites L2 learners to listen to the audio along with their pictures. They can use their ability to visualize and judge illustrations. They may, thus, use their spatial intelligence to identify the people.

4. Results

To address the first research question of the study, the frequencies and percentages of the processes of the RBT were calculated in *Fundamentals*, *Top-Notch 1*, *Top-Notch 2*, *Top-Notch 3*, *Summit 1*, and *Summit 2*. The results are summarized in Table 1.

Table 1. *Frequencies and Percentages of the RBT in the Top-Notch Series*

Cognitive Processes	<i>Fundamentals</i>		<i>Top-Notch 1</i>		<i>Top-Notch 2</i>		<i>Top-Notch 3</i>		<i>Summit 1</i>		<i>Summit 2</i>	
	N	%	N	%	N	%	N	%	N	%	N	%
Remembering	94	47.00	113	35.76	94	32.75	88	30.35	69	25.09	66	25.19
Understanding	26	13.00	67	21.20	47	16.37	68	23.45	48	17.45	44	16.80
Applying	61	30.50	69	21.83	51	17.77	45	15.51	52	18.91	49	18.70
Analyzing	7	3.50	17	5.38	43	15.00	27	9.31	27	9.82	29	11.07
Evaluating	5	2.50	22	6.97	17	5.92	20	6.90	33	12.00	31	11.83
Creating	7	3.50	28	8.86	35	12.19	42	14.48	46	16.73	43	16.41
Total	200	100	316	100	287	100	290	100	275	100	262	100

According to Table 1, remembering process was found to be the most frequent level of the cognitive processes of the RBT in *Fundamentals* (N = 94, 47%), *Top-Notch 1* (N = 113, 35.76%), *Top-Notch 2* (N = 94, 32.75%), *Top-Notch 3* (N = 88, 30.35%), *Summit 1* (N = 69, 25.09%), and *Summit 2* (N = 66, 25.19%). Evaluating process was found to be the least frequent level of the cognitive processes of the RBT in *Fundamentals* (N = 5, 2.5%), *Top-Notch 2* (N = 17, 5.92%), and *Top-Notch 3* (N = 20, 6.90%). Moreover, Analyzing process was found to be the least frequent level of the cognitive processes of the RBT in *Top-Notch 1* (N = 17, 5.38%), *Summit 1* (N = 27, 9.82%), and *Summit 2* (N = 29, 11.07%).

The second most frequent level, however, was not the same in all the six textbooks. While understanding process was the second frequent cognitive level in *Top-Notch 3*, in *Fundamentals*, *Top-Notch 1*, *Top-*

Notch 2, Summit 1, and Summit 2, applying process was found to be the second most represented level of the cognitive processes of the RBT.

In order to compare cognitive processes of the RBT represented in the *Top-Notch* series, the average percentage of each process contained and displayed in Figure 4.

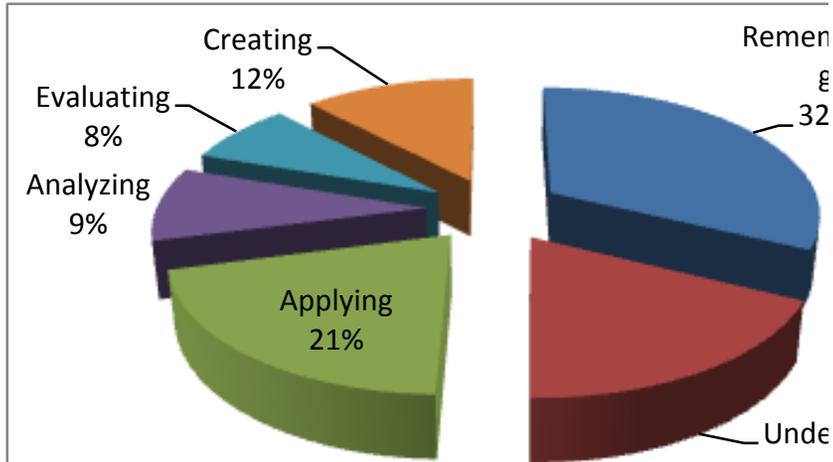


Figure 4. Pie apple graph of percentages of six cognitive processes in the *Top-Notch* series.

According to Figure 2, the average percentage of remembering process was 32%, constituting a high proportion representative of the lower-order levels. Evaluating process was found to be the least frequent process with 8% of distribution. In between, there were, applying (21%), understanding (18%), creating (9%), and analyzing (12%) processes.

To address the second research question of the study, the frequencies and percentages of the cognitive processes related to the activities representative of the lower-order and higher-order processes were obtained (see Table 2).

As shown in Table 2, *Fundamentals* was to a high degree representative of the lower-order processes (N = 181, 90.5%), and *Summit 2* had the least representation of the lower-order processes (N = 159, 60.69%). In addition, as for higher-order processes, *Summit 2* had the largest representation (N = 103, 39.31%), and *Fundamentals* had the least representation (N = 19, 9.5%).

Table 2.
Frequencies and Percentages of Lower-Order and Higher-Order Cognitive Processes in the Top-Notch Series

Cognitive Processes	<i>Fundamentals</i>		<i>Top-Notch 1</i>		<i>Top-Notch 2</i>		<i>Top-Notch 3</i>		<i>Summit 1</i>		<i>Summit 2</i>	
	N	%	N	%	N	%	N	%	N	%	N	%
Lower-order	181	90.5	24	78.7	19	66.8	20	69.3	16	61.4	15	60.6
Higher-order	19	9.5	9	21.2	2	33.1	1	30.6	9	38.5	9	39.3
			67	1	95	1	89	9	10	5	10	3
								6	5	3	1	1

To test the significance of the difference in the frequency of lower-order and higher-order processes in all the six textbooks, Chi-Square test of significance was carried out. The result of Chi-Square test depicted that there was a significant difference between the frequencies of the lower-order and higher-order cognitive processes ($\chi^2 = 74.02$, $df = 5$, * $p < .05$). Table 3 reports the results of Chi-Square test on the frequencies of the lower-order and higher-order processes in each of the textbooks. According to Table 3, in each textbook of *Top-Notch* series, there was a significant difference between the frequencies of the lower-order and higher-order cognitive processes (* $p < .05$), too.

Table 3. *Chi-Square Test for the Lower-Order and Higher-Order Cognitive Processes*

	Chi-Square value	<i>df</i>	<i>p</i>
<i>Fundamentals</i>	129.6	1	.000
<i>Top-Notch 1</i>	103.68	1	.000
<i>Top-Notch 2</i>	32.12	1	.000
<i>Top-Notch 3</i>	42.48	1	.000
<i>Summit 1</i>	13.98	1	.000
<i>Summit 2</i>	11.54	1	.000

To address the third research question of the study, the frequencies and percentages of different intelligences were calculated in

Fundamentals, *Top-Notch 1*, *Top-Notch 2*, *Top-Notch 3*, *Summit 1*, and *Summit 2*. The results are summarized in Table 1.

Table 4.

Frequencies and Percentages of the MI Profiles in the Top-Notch Textbooks

MI Profiles	<i>Fundamentals</i>		<i>Top-Notch 1</i>		<i>Top-Notch 2</i>		<i>Top-Notch 3</i>		<i>Summit 1</i>		<i>Summit 2</i>	
	N	%	N	%	N	%	N	%	N	%	N	%
Verbal	167	38.93	171	34.13	177	33.02	199	36.92	179	36.00	173	37.44
Logical	42	9.79	74	14.77	83	15.48	73	13.54	95	19.06	101	21.86
Spatial	78	18.18	84	16.76	52	9.70	54	10.02	34	6.82	29	6.28
Bodily	16	3.73	28	5.58	41	7.65	21	3.90	11	2.20	8	1.73
Musical	61	14.28	63	12.57	56	10.45	64	11.88	41	8.23	54	11.69
Interpersonal	51	11.89	46	9.18	54	10.08	55	10.20	53	10.64	38	8.23
Intrapersonal	14	3.26	27	5.39	58	10.82	58	10.76	74	14.85	47	10.17
Naturalist	0	0.00	8	1.59	12	2.24	15	2.78	11	2.20	12	2.60
Existential	0	0.00	0	0.00	3	0.56	0	0.00	0	0.00	0	0.00
Total	429	100	501	100	536	100	539	100	498	100	462	100

As can be seen from Table 4, verbal intelligence was the most frequent intelligence in *Fundamentals* (N = 167, 38.93%), *Top-Notch 1* (N = 171, 34.13%), *Top-Notch 2* (N = 177, 33.02%), *Top-Notch 3* (N = 199, 36.92%), *Summit 1* (N = 179, 36%), and *Summit 2* (N = 173, 37.44%). But, naturalist and existential intelligences were the least frequent intelligences (N = 0,%) in *Fundamentals*, and existential intelligence was the least frequent intelligence in *Top-Notch 1*, *Top-Notch 3*, *Summit 1*, *Summit 2* (N = 0%), and *Top-Notch 2* (N = 30.56%).

In order to provide a better picture to compare the representation of intelligences in *Top-Notch* series, the average percentage of each intelligence was displayed in Figure 4.

As Figure 4 reports, verbal intelligence received the highest percentage of intelligences in all six textbooks (36%), and existential intelligence was almost absent in all six textbooks. Logical, musical, spatial, interpersonal, intrapersonal, bodily, and naturalist intelligences came in between (with 16%, 12%, 11%, 10%, 9%, 4%, and 2%, respectively).

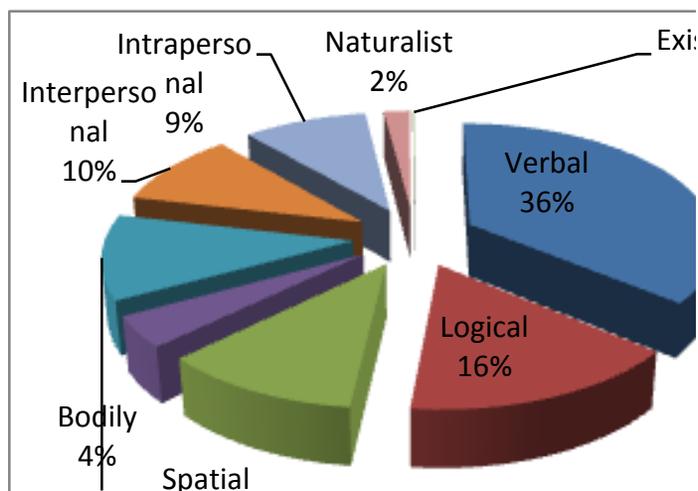


Figure 4. Pie apple graph of percentages of nine intelligences in the *Top-Notch* series.

5. Discussion

One major finding of this study is that remembering process was found to be the most frequent level of the cognitive processes in all six textbooks of *Top-Notch* series. Activities which included remembering process in *Top-Notch* series were, for example, conversational model, vocabulary activities, and reading activities. Also, learners were supposed to do activities such as listening to an audio to practice pronunciation examples or to memorize some sorts of information. One plausible reason for this major finding may be due to the importance of remembering process as the basic level of cognitive processes of the RBT in the ELT textbooks. This may be justified by Bloom's (1956) claim about the importance of knowledge. Bloom (1956) believes that knowledge is one of the most important learning objectives because once a person's knowledge or information increases; there is also "a development of his acquaintance with reality" (p. 32). In addition, knowledge, in Krathwohl's (2002) terms, is regarded as a basis for the other purposes of education such as understanding the environment, applying recently acquired information in new situation, and critically thinking about issues. Marzano and Kendall (2007) believe that critical thinking or problem solving, as higher-order levels of cognitive processes, must be based upon knowledge of our realities, that is, what we remember. According to Anderson and Krathwohl (2001), remembering process must basically be developed and practiced so that other levels of learning objectives can be

achieved by classroom learners and teachers. Thus, it could be asserted that developers or writers of *Top-Notch* series were aware of basic levels of learning objectives and their key roles in L2 learning.

Almost, the same results were found in other studies on ELT textbook evaluation. For example, Roohani et al. (2014) found that remembering process was the most frequent process in *Four Corners, Book 2* and *book 3* (Richards & Bohlke, 2012). Moreover, Riazi and Mosalanejad (2010) analyzed Iranian high school and pre-university ELT textbooks in terms of Bloom's taxonomy representation and concluded the same results that is to say; knowledge process (i.e., remembering process) was the most frequent process.

In the present study, evaluating and analyzing processes were the least frequently-represented levels of cognitive processes. There can be several reasons for this major finding. For instance, one plausible reason is that in the most ELT curricula, the most common, and perhaps, the most general educational objectives are related to knowledge and remembering level and this can be reflected in textbooks including ELT ones such the ones used in the current study. The *Top-Notch* series, in general, focus less on doing problem-solving tasks; in most activities, students' attainment is mostly measured thorough recalling and remembering the facts or given materials and less assessment is done through their abilities to do problem-solving tasks. The other reason might be related to the difficulty on the parts of the textbook writers to develop activities to access higher levels of intellectual development. It is easier for an L2 textbook writer to include a lower number of activities including analyzing and evaluating processes.

However, the importance of analyzing and evaluating processes have been accentuated by Paul (1985) who believes that analysis (i.e., analyzing) and evaluation (i.e., evaluating) are essential to education at all levels. To learn how to think critically, in this view, is to learn how to ask and answer questions of analysis, and evaluation. According to Mayer (2002), the goal of many fields of study is to "improve learners' skills in analyzing educational communications" (p. 230). Moreover, Bloom (1956) has discussed the importance of analysis (i.e., analyzing) process:

Skill in analysis may be found as an objective of any field of study. It is frequently expressed as one of their important objectives by teachers of science, social studies ... They wish, for example, to develop in learners the ability to distinguish fact from hypothesis in a communication, ... to distinguish relevant from

extraneous material, to note how one idea relates to another, ... to distinguish dominant from subordinate ideas. (p. 144)

Moreover, in every one of the six textbooks of *Top-Notch* series, lower-order cognitive processes (i.e. remembering, understanding, and applying) were discovered to be more frequent than higher-order ones. This finding may be unjustified by many researchers. For example, McGregor (1994) believes that by higher-order cognitive processes of the RBT, one can go beyond the information given, adopt a critical stance, evaluate, and have meta-cognitive awareness and problem solving capacities. According to Thomas and Thorne (2009), higher-order cognitive process is thinking on a level that is higher than memorizing facts or telling something back to someone exactly the way it was told to you. They require learners to do something with the facts, understand them, infer from them, connect them to other facts and concepts, categorize them, manipulate them, put them together in new or novel ways, and apply them as we seek new solutions to new problems.

Among all six textbooks of *Top-Notch* series, *Summit 2*, the textbook for proficient learners, mostly catered for higher-order cognitive processes. In fact, the percentage of higher-order cognitive processes increased from 9.5% in *Fundamentals*, which is written for beginner learners, to 41.61% in *Summit 2*. Such a result is expected on the grounds that learners with larger amount of language proficiency must be able to perform more difficult cognitive activities of analyzing, evaluating and creating. In other words, it is natural to expect more basic cognitive levels and lower-order thinking processes for those at the lower levels of English proficiency before do problem-solving language activities and get involved in more complex thinking processes in the next higher level. All in all, higher-order thinking processes, in Mabrouk's (2010) terms, promote learners to be independent in learning by making them to be curious in learning processes. Moreover, Rashid and Hashim (2008) have reported a positive relationship between language proficiency and higher-order thinking processes. These textbooks, however, could have benefited more from the higher-order levels of learning, especially in an era in which critical thinking is of such a great importance.

By and large, the above finding finds support the results of the majority of the previous studies. For instance, Roohani et al. (2014) concluded that lower-order cognitive processes were more dominant than higher-order ones in *Four Corners* textbooks. Moreover, Mosallanejad (2008) came to such a finding and found that lower levels of cognitive skills were more frequent in Iranian senior high school and pre-university English textbooks. Also, Gordani (2008) found that lower-order

cognitive skills were more prevalent than higher order ones in guidance school English textbooks.

As for MI theory results, the activities in the *Top-Notch* series were mainly representative of the verbal intelligence followed by the logical one. It can be argued that fostering verbal intelligence is of utmost importance for ELT textbook writers; As Gardner (1993) state, people who have verbal intelligence find it easy to read, pick up new vocabulary, understand more complex language, and express themselves in speaking and writing. They would be able to make ideas clearer for other people through their writing and verbal explanations. It is justified that an L2 textbook to include some activities catering for verbal intelligence type; L2 textbooks can comprise language skills like reading, writing, speaking and listening, as well as language areas such as grammar, pronunciation and vocabulary. Also, given that the dominant intelligences were verbal and logical types, the possibility exists that that the ELT textbook authors focused more on the traditional view of intelligence and, perhaps, view of language learning. The above finding is in line with previous research; Bottelho (2003) also found that verbal intelligence was the most dominant intelligence in *New Interchange* textbooks (Richards, Hull, & Proctor, 2005).

Bodily, naturalist, and existential intelligences were given little attention, compared with other intelligences. One possibility is that it is generally thought that the ability to use skillfully one's body for the expression of ideas and feelings (bodily), one's ability of communicating with other creatures and classifying individuals and ecological relationships (naturalist), and ones' ability to understand ultimate and philosophical issues (existential) have less to do with language learning, in general, and L2 learning, in particular; hence, they were represented for comparatively less than other types in the aforementioned textbooks. Nonetheless, some scholars have stressed the significance of affective and physical sides of learners in L2 learning. For instance, Hannaford (1995) has argued for the relationship between body movement and better L2 performance. Also, Roohani and Heidari (2013) have accentuated the potentials of bodily intelligence in the use of strategies in oral communication. Thus, a higher representation of the above-mentioned intelligences, especially bodily/kinesthetic intelligence, in these ELT textbooks could have been expected.

6. Conclusion and Suggestions

This study investigated the extent to which *Top-Notch* series demonstrated six cognitive categories of the BRT (i.e. remembering,

understanding, applying, analyzing, evaluating, and creating) in their activities. The findings have revealed the high representation of the process of remembering and a low frequency of the evaluation process in the *Top-Notch* textbooks. This finding indicates that more evaluative activities and tasks should be provided to the EFL learners so that the learners will have the opportunity to express their opinions, feelings, and attitudes which pave the way for them to be creative and innovative thinkers. Also, *Top-Notch* textbooks are mostly limited to lower-order levels of cognitive processes of the RBT and representation of two intelligences i.e., verbal and logical. More particularly, much against expectation, higher-order levels of the RBT are less frequently represented in the advanced level of *Top-Notch* series; since textbooks are one of the richest educational means through which critical thinking should be expanded, by implication, these ELT textbooks should benefit from higher levels of learning, i.e. analyzing, evaluating and creating through adapting some of the activities to include more higher-order thinking skills (such as using contextual clues and guessing meaning of words, evaluating texts critically, recognizing authors' position and bias, distinguishing between facts and opinions, and understanding authors' attitude).

The *Top-Notch* series was, to a high degree, representative of the verbal, and to some degree, logical, and musical intelligences. This could be regarded as a promising point for some EFL learners. However, the greater parts of these textbooks fail to offer the innovativeness in planning multiple activities and exercises to foster other types of intelligences, which may mean less satisfaction for some EFL learners. It seems reasonable to suggest that L2 teachers supplement these ELT textbooks with extra materials or activities to celebrate diversity. Using charts, graphs, and diagrams, video clips, power point slides, movies, visual puzzles, imaginative storytelling, idea sketching, visual thinking exercises, mind mapping, and color cueing can be greatly helpful.

References

- Allwright, R.L. (1982). Perceiving and pursuing learners' needs. In M. Geddes & G. Sturtridge (Eds.). *Individualisation* (pp. 24-31). London: Modern English Publications.
- Anderson, L., & Krathwohl, D. A. (2001). *Taxonomy for learning, teaching and assessing: A revision of Bloom's taxonomy of educational objectives*. New York: Longman.

- Ansary, H., & Babaii, E. (2002). Universal characteristics of EFL/ESL textbooks: A step towards systematic textbook evaluation. *TESL Journal*, 8(2), 1-8.
- Armstrong, T. (2009). *Multiple intelligences in the classroom*. Alexandria, VA: ASCD.
- Bloom, B. S. (Ed.). (1956). *Taxonomy of educational objectives handbook: Cognitive domain*. New York: McKay.
- Botelho, M. (2003). *Multiple intelligences theory in English language teaching: An analysis of current textbooks, materials, and teachers' perceptions*. Unpublished master's thesis. University of Ohio, Ohio, the U.S.
- Gardner, H. (1983). *Frames of mind: The theory of multiple intelligences*. New York: Basic Books.
- Gardner, H. (1999). *Intelligence reframed: Multiple intelligences for the 21st Century*. New York: Basic Books.
- Genesee, F. (2001). Evaluation. In R. Carter, & D. Nunan (Eds.), *The Cambridge guide to teaching English to speakers of other languages* (pp. 144-150). Cambridge: Cambridge University Press.
- Gordani, Y. (2008). *A content analysis of guidance school English textbooks with regard to Bloom's levels of learning*. Unpublished master's thesis, Shiraz University, Iran.
- Gotcher, D. (2012). *A précis of the taxonomy*. Retrieved October 8, 2014, from <http://authorityresearch.com/2010-01%20A%20precis%20of%20Blooms%20Taxonomy.html>
- Graves, K. (2000). *Designing language courses*. Canada. New bury House.
- Hamiloğlu, K., & Karhiova, H. (2009). A content analysis on the vocabulary presentation in EFL course books. *Ozean Journal of social science*, 2(1), 43-54.
- Hanna, W. (2007). The new Bloom's taxonomy: Implications for music education. *Arts Education Policy Review*, 108(4), 7-16.
- Hannaford, C. (1995). *Smart moves: Why learning is not all in your head*. Arlington, VA: Great Ocean Publishers.
- Haycraft, J. (1998). *An introduction to English language teaching*. London: Longman.
- Huitt, W. (2011). *Bloom et al.'s taxonomy of the cognitive domain: Educational psychology interactive*. Valdosta, GA: Valdosta State University.
- Hutchinson, T., & Torres, E. (1994). The textbook as agent of change. *ELT Journal*, 48(4), 315-328.

- Jahangard, A. (2007). Evaluation of EFL materials taught at Iranian public high schools. *Asian EFL Journal*, 9(2), 130-150.
- Krathwohl, D. R. (2002). A revision of Bloom's taxonomy: An overview. *Theory into Practice*, 41(4), 212-218.
- Lee, I. (2009). Situated globalization and racism: An analysis of Korean high school EFL textbooks language and literacy. *English Teaching: Practice and Critique*, 11(1), 1-14.
- Litz, D. R. (2005). Textbook evaluation and ELT management: A South Korean case study. *Asian EFL Journal*, 48, 1-53.
- Mabrouk, S. (2010). *Developing the critical thinker in the average student with Bloom's cognitive taxonomy*. Retrieved August 13, 2014, from <http://ww2.faulkner.edu/admin/Websites/jfarrell/Critical%20thinking%20and%20Blooms%20Taxonomy.pdf>
- Marzano, R., & Kendall, J. (2007). *The new taxonomy of educational objectives* (2nd ed.). Thousand Oaks, CA: Corwin Press.
- Mayer, R. E. (2002). Rote versus meaningful learning. *Theory into Practice*, 41(4), 226-232.
- McGregor, J. H. (1994). Cognitive processes and the use of information: A qualitative study of higher-order thinking skills used in the research process by students in a gifted program. *School Library Media Annual (SLMA)*, 12, 33-124.
- Mosallanejad, N. (2008). *Evaluation of high school English textbooks on the basis of Bloom's taxonomy*. Unpublished master's thesis, Shiraz University, Iran.
- Paul, R. W. (1985). Bloom's taxonomy and critical thinking instruction. *Educational Leadership*, 42(8), 36-39.
- Razmjoo, S. A., & Jozaghi, Z. (2010). The representation of multiple intelligences types in the *Top-Notch* series: A textbook evaluation. *Journal of Pan-Pacific Association of Applied Linguistics*, 14(2), 59-84.
- Razmjoo, S. A., & Kazempourfard, E. (2012). On the representation of Bloom's revised taxonomy in *Interchange* coursebooks. *The Journal of Teaching Language Skills (JTLS)*, 4(1), 171-205.
- Rezvani, R., & Amiri, T. (2012, October). *Dominant intelligences in ESP textbooks: multiple or single?* Paper presented at the Conference on Language Learning & Teaching: An Interdisciplinary Approach. Iran, Mashad: Ferdowsi University Press.

- Riasati, M. J., & Zare, P. (2010). Textbook evaluation: EFL teachers' perspectives on *New Interchange*. *Studies in Literature and Language*, 1(8), 54-60.
- Riazi, A. M., & Mosallanejad, N. (2010). Evaluation of learning objectives in Iranian high school and pre-university English textbooks using Bloom's taxonomy. *TESL-EJ*, 13(4), 1-16.
- Richards, J. C. (2001). *Curriculum development in language teaching*. Cambridge: Cambridge University Press.
- Richards, C., & Bohlke, D. (2012). *Four Corners, student's book 2 and 3*. New York: Cambridge University Press.
- Richards, J. C., Hull, J., & Proctor, S. (2005). *New Interchange series: English for international communication*. Cambridge: CUP.
- Roohani, A., Taheri, F., & Poorzanganeh, M (2014). Evaluating *Four Corners* textbooks in terms of cognitive processes using Bloom's revised taxonomy. *RALS*, 4(2), 51-67.
- Roohani, A., & Heidari, N. (2013). Oral communication strategies and multiple intelligences: Exploring the relationship. **The journal of teaching Language and Literature Society of Iran (TELL)**, 7(2), 97-125.
- Roohani, A., & Zarei, M. (2013). Evaluating gender-bias in the Iranian pre-university English textbooks. *Indonesian Journal of Applied Linguistics*, 3(1), 115-125.
- Saslow, J. M., & Ascher, A. (2012). *Top-Notch: English for today's world, Fundamentals* (2nd ed). New York: Pearson Longman.
- Saslow, J. M., & Ascher, A. (2012). *Top-Notch: English for today's world, Top-Notch 1* (2nd ed). New York: Pearson Longman.
- Saslow, J. M., & Ascher, A. (2012). *Top-Notch: English for today's world, Top-Notch 2* (2nd ed). New York: Pearson Longman.
- Saslow, J. M., & Ascher, A. (2012). *Top-Notch: English for today's world, Top-Notch 3* (2nd ed). New York: Pearson Longman.
- Saslow, J. M., & Ascher, A. (2012). *Top-Notch: English for today's world, Summit 1* (2nd ed). New York: Pearson Longman.
- Saslow, J. M., & Ascher, A. (2012). *Top-Notch: English for today's world, Summit 2* (2nd ed). New York: Pearson Longman.
- Sheldon, L. (1988). Evaluating ELT textbooks and materials. **ELT Journal**, 42(2), 237-246.
- Stefanakis, E. (2002). *Multiple intelligences and portfolios: A window into the learner's mind*. Portsmouth: Heinemann.

- Taase, Y. (2012). Multiple intelligences theory and Iranian textbooks: An analysis. *Journal of Pan-Pacific Association of Applied Linguistics*, 16(1), 73-82.
- Tajeddin, Z., & Teimournezhad, Sh. (2014). Exploring the hidden agenda in the representation of culture in international and localised ELT textbooks. *The Language Learning Journal*, 1, 1-14.
- Thomas, A., & Thorne, G. (2009). *How to increase higher-order thinking*. Retrieved September 18, 2014, from <http://www.cdl.org/resource-library/articles/HOT.php?type=subject&id=18>
- Tomlinson, B. (ed.) (2003). *Developing materials for language teaching*. London: Continuum.
- Wen-Cheng, W., Chien-Hung, L., & Chung-Chieh, L. (2011). Thinking of the textbook in the ESL/EFL classroom. *English Language Teaching*, 4(2), 91-96.
- White, R. V. (1997). *The ELT curriculum: Design, innovation, and management*. Oxford: Blackwell.

APPENDIX A

LIST OF ACTIVITIES OF EACH INTELLIGENCE

<p>Verbal/Linguistic</p> <ol style="list-style-type: none"> 1. Note taking 2. Choral Speaking 3. Retelling 4. Listening to lectures 5. Word playing games 6. Presenting 7. Reading books 8. Discussing 9. Storytelling 10. Researching 11. Debating 12. Memorizing 13. Writing 14. Reading aloud 	<p>Logical/Mathematical</p> <ol style="list-style-type: none"> 1. Making outlines 2. Logic puzzling 3. Collecting data 4. Using logical argument 5. Problem solving 6. Classifying 7. Critical thinking 8. Predicting 9. Inductive/Deductive reasoning
<p>Spatial/Visual</p> <ol style="list-style-type: none"> 1. Using visual awareness activities 2. Using Graphs and tables 3. Using Videos, slides and movies 4. Using charts and grids 5. Using art 6. Using maps and photos 7. Using graphic organizers 8. Student drawings 9. Imaginative story telling 10. Painting/picture/collage 11. Mind mapping 12. Using telescopes/microscopes 	<p>Bodily/Kinesthetic</p> <ol style="list-style-type: none"> 1. Using hands-on activities 2. Going on field trips 3. Role-playing 4. Using creative movements 5. Miming 6. Using body language 7. Dramatizing 8. Cooperating in group rotation 9. Cooking and other “mess” activities
<p>Musical</p> <ol style="list-style-type: none"> 1. Singing 2. Playing live music 3. Playing background music patterns 4. Tapping out poetic rhythms 5. Using background music 6. Using Student made instruments 	<p>Interpersonal</p> <ol style="list-style-type: none"> 1. Pair working 2. Peer teaching 3. Participating in classroom parties 4. Group brainstorming 5. Group problem solving 6. Project working 7. Cooperative working 8. Peer editing 9. Sharing 10. Group Studying

<p>Intrapersonal</p> <ol style="list-style-type: none">1. Doing activities with a self-evaluation component2. Using meta-cognitive technique3. Doing homework4. Personal journal keeping5. Creating checklist6. Creating inventory7. Doing individualized projects8. Doing things by yourself9. Independent reading10. Silent reflecting	<p>Naturalist</p> <ol style="list-style-type: none">1. Reading outside2. Using a microscope3. Studying the stars4. Collecting rocks5. Bird watching6. Identifying plants7. Identifying insects8. Building habitats9. Going to the zoo10. Going on a nature walk
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(Adapted from Botelho, 2003, p. 146)

APPENDIX B

DESCRIPTIONS OF THE RBT

Level	Key words	Examples	Sample task rubrics
<i>Remembering</i>	Define, describe, identify, label, list, match, name, outline, reproduce, select, state	The student recalls and/or quotes information from memory to the teacher	Fill in the blanks with appropriate words
<i>Understanding</i>	Describe, estimate, explain, extend, generalize, infer, interpret, paraphrase, predict, rewrite, summarize, translate	The student translates, comprehends, or interprets information s/he has received	Answer the questions according to the reading
<i>Applying</i>	Apply, change, compute, demonstrate, discover, manipulate, modify, predict, prepare, produce, relate, show, solve, use	The student applies the new information in his/her future assignments or classroom activities	Make sentences using the given pattern and words
<i>Analyzing</i>	Analyze, breaks down, compare, contrast, discriminate, distinguish, identify, illustrate, infer, outline, relate, select, separate	The student compares and contrasts a new structure to the ones previously learned	Compare the following words to see how they sound differently
<i>Evaluating</i>	Appraise, conclude, critiques, evaluate, judge, justifies, relate, support	The student selects the most effective solution to a problem and is able to justify it	Which of the followings is the best answer to the question? Why?
<i>Creating</i>	Categorize, create, devise, design, explain, organize, plan, arrange, reconstruct	The student integrates information from several sources to solve a specific problem or to answer a question	Make sentences using the scrambled words

