

On the Representation of Bloom's Revised Taxonomy in Interchange Coursebooks

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Abstract

This study intends to evaluate Interchange series (2005), which are still fundamental coursebooks in the EFL curriculum settings, in terms of learning objectives in Bloom's Revised Taxonomy (2001) to see which levels of Bloom's Revised Taxonomy were more emphasized in these coursebooks. For this purpose, the contents of Interchange textbooks were codified based on a coding scheme designed by the researchers. The coding scheme was based on Bloom's Revised Taxonomy of learning objectives. The reliability of the coding scheme was also tested through two kinds of reliability analysis, namely, inter-coder and intra-coder reliability. The data were then analyzed and the frequencies and percentages of occurrence of different learning objectives were calculated. The results of the study revealed that Lower Order Thinking Skills (LOTS), the three low levels in Bloom's Revised Taxonomy, were the most prevalent learning levels in these books. Moreover, a significant difference was also found among the coursebooks in their inclusion of different levels of learning objectives. The other result of this study was the total absence of metacognitive knowledge. All in all, it was found that Interchange series cannot make learners critical thinkers. As a final point, some implications for teachers and coursebook/textbook developers are recommended.

Keywords: coursebook, coursebook evaluation, Bloom's taxonomy, Bloom's revised taxonomy

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1. Introduction

The textbook plays an important role in English Language Teaching (ELT), particularly in the English as a Foreign Language (EFL) classroom where it provides the primary form of linguistic input (Kim & Hall, 2002). There are different views towards textbook which are sometimes quite contradictory. A number of theorists (O'Neil 1982; Sheldon 1988; Hutchinson and Torres 1994; Cunningsworth 1995; and Haycroft 1998) consider coursebook/textbook as the vital element in the ESL/EFL classrooms and programs. However, other researchers such as Porreca (1984), Florent and Walter (1989), Clarke and Clarke (1990), and Carrell and Korwitz (1994) have criticized textbooks for their inherent social and cultural biases. So we can conclude that our teaching materials do have problems, but the necessity of textbook cannot be ignored at all. In fact, it is extremely important for us as teachers to evaluate, select and adapt teaching materials to meet our teaching and students' learning needs in order to get the most out of learning potentials. As a matter of fact, coursebook/textbook analysis and evaluation can help teachers to gain good and useful insights into the nature of the material.

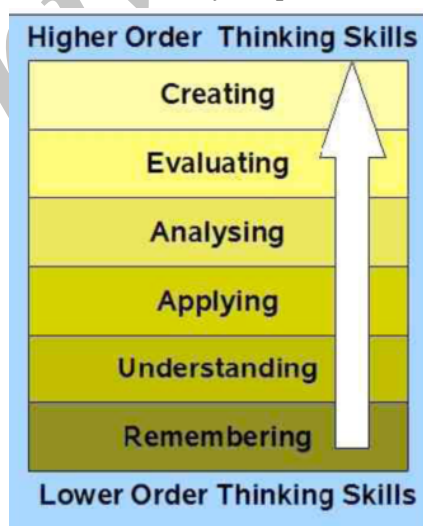
In spite of its great importance, materials development and evaluation has been a new trend in the process of language teaching. It does not have a long history. Tomlinson (2001) explains that the study of materials development was not given any real importance until the 1990s when books on this subject started to be published.

1.1 Theoretical framework of the study

The theoretical framework of the current study is the Bloom's Revised Taxonomy which emerged out of Bloom's Original Taxonomy in 2001. The revision includes some changes which appear to be trivial, yet they are quite significant changes. According to Hanna (2007), there are some changes in terminology. For example, the six categories in the cognitive process have changed from noun to verb forms. It was due to the fact that the authors defined cognition as thinking and since thinking is an active

process, they preferred verbs because they believed that verbs can describe the action involved in thinking in a better way. Among the other changes is renaming of some categories. For instance, knowledge is renamed as remembering, because knowledge is said to be the product of thinking not one type of thinking. Comprehension and synthesis are also renamed as understanding and creating. Additionally, the authors rearranged two of the subcategories in the cognitive process since they wanted to arrange them in the order of increased difficulty. Consequently, they exchanged the order of synthesis which is *create* in the new taxonomy and evaluation which is *evaluate* in the new taxonomy because they supposed that creative thinking is more difficult than critical thinking. They accept it as true that you can be critical without necessarily being creative, but creative production often necessitates critical thinking. All in all, in the new taxonomy creating is shown to be more complex than evaluating. Figure 2 shows the cognitive dimension of Bloom's Revised Taxonomy.

Figure 2. Bloom's revised taxonomy adopted from Churches (2007)



There is a significant change in the new taxonomy. The new taxonomy is now two-dimensional, identifying both the kind of knowledge to be

learned (knowledge dimension) and the kind of learning expected from students (cognitive processes) to help teachers and administrators improve alignment and rigor in the classroom. The revision of Bloom's taxonomy implies that it is now appropriate to evaluate both learning outcomes and the cognitive process used by learners to complete a task. This taxonomy will certainly aid educators to improve instruction, to ensure that their lessons and assessments are aligned with one another and with the state standards, that their lessons are cognitively rich, and that instructional opportunities are not missed (Cited in Rex, 2008). Figure 3 shows the structure of Bloom's revised taxonomy:

Figure 3. The structure of Bloom's revised taxonomy (2001)

The Knowledge Dimension	The Cognitive Process Dimension					
	Remember	Understand	Apply	Analyze	Evaluate	Create
Factual Knowledge						
Conceptual Knowledge						
Procedural Knowledge						
Meta-cognitive Knowledge						

The Knowledge Dimension in RBT consists of four types of knowledge: factual, conceptual, procedural, and metacognitive. Factual knowledge comprises the discrete facts and basic elements that experts use when communicating about their discipline, understanding it, and organizing it systematically (cited in Pickard, 2007). Conceptual knowledge is said to be more complex than factual knowledge and includes three subtypes: 1) knowledge of classifications and categories, 2) knowledge of principles and generalizations, and 3) knowledge of theories, models, and structure. When students are able to explain the concepts in their own words and transfer information to new situations they have acquired conceptual knowledge. Procedural knowledge includes criteria which tell when to use various procedures and reflects

knowledge of different processes (cited in Pickard, 2007). The last dimension of knowledge is called metacognitive knowledge which is awareness of and knowledge about one's own thinking. Today making students more conscious of and responsible for their own knowledge and thought is highly emphasized, and this is a shift in the paradigm which is applicable across numerous models such as Piagetian, Vygotskian, and situated learning theories (Anderson & Krathwohl, 2001; Marzano, Pickering & Pollock, 2001).

1.2 Why Bloom's taxonomy?

One of the fundamental questions that educators face has always been "Where do we begin in seeking to improve human thinking?" (Houghton, 2004; cited in Forehead, 2005). In the late 1950s into the early 1970s, there were attempts to dissect and classify the varied domains of human learning, namely cognitive (knowing, head), affective (feeling, heart) and psychomotor (doing, hand/body). The consequential attempts yield a series of taxonomies in each area. The most common and earliest of these is Bloom's Taxonomy (1956), adapted more recently by Anderson and Krathwohl (2001).

Accordingly, since developing our learners' thinking is, in the same vein, regarded as one of the goals of today's educational systems, and since this is the coursebook/textbook evaluators' responsibility to clarify such a crucial function of coursebooks/textbooks, which are considered as the main motifs and infrastructures of such development in the classrooms, Bloom's Taxonomy might be an appropriate means to evaluate the coursebooks/textbooks in this regard, so that it might raise the coursebook/textbook developers' consciousness in order to take constructive steps towards developing learners' thinking through coursebook/textbooks.

1.3 Objectives and research questions of the study

This study aimed at evaluating Interchange coursebooks (2005) in terms of learning objectives. The evaluation took place based on the six levels

of learning objectives in Bloom's Revised Taxonomy (2001). The study intended to investigate which levels of Bloom's Revised Taxonomy were more emphasized in these coursebooks. Having assessed the coursebooks, the researchers provided some suggestions on how the coursebooks could become more effective. The current study, therefore, seeks to answer the following questions:

1. How are the levels of Bloom's Revised Taxonomy represented in the Interchange series?
2. Which coursebook fulfills the highest levels of learning, namely analyzing, evaluating and creating?

1.4 Significance of the study

Textbooks play a vital role in many language classrooms and after teachers they are considered to be the next important factor in the second/foreign language classrooms (Riazi, 2003). Therefore, the importance of selecting and preparing materials which match the desired features and the needs of the learners in the target situation demonstrates the significance of the kinds of studies such as this one that deals with the evaluation of the textbooks which are used in the language learning classes. These studies are also very useful in teacher development and professional growth. On the other hand, Interchange coursebooks are such fundamental coursebooks in the EFL curriculum in Iran and have been widely used in many language institutes in Shiraz, so that an evaluation of the coursebook is somehow necessary and it is worth investigating the learning objectives and the cognitive demands of the activities included in these coursebooks.

As it was clear from the aforementioned section, there has not been much research trying to evaluate coursebooks based on Bloom's Taxonomy and specifically Bloom's Revised Taxonomy. Therefore, the present study gains significance as the results can help material developers augment their views towards higher levels of learning. The results of this investigation will hopefully help teachers and institutes that have chosen Interchange Third Edition series as teaching material modify

their practice and materials in such a way as to achieve higher order levels of learning objectives.

2. Literature Review

2.1 Studies based on Bloom's taxonomy and Bloom's revised taxonomy

The developers of Bloom's Taxonomy theorized that the taxonomy of educational objectives could be used with any subject matter and for any levels of learners. Their theory finally actualized because the Bloom's taxonomy has been applied to a diverse number of disciplines since its initial publication. It has been used by different scholars in different fields for different purposes. For example, Usova (1997), Aviles (2000), Granello (2000), Cross and Wills (2001), Granello (2001), Lipscomb (2001), Sultana (2001), Bastick (2002), Chan, Tsui, and Chan (2002), Chyung and Stepich (2003), Gegen (2006), Anthony (2007), Plack *et al.* (2007), Larkin and Burton (2008), Valcke, De Wever, Zhu, and Deed (2009), Crews (2010), Hawks (2010) and Garekwe (2010).

Not only Bloom's Taxonomy but also Bloom's Revised Taxonomy have been used in different fields for different purposes. However, to the best of the author's knowledge such studies are quite small in number. Examples of such studies are the ones done by Noble (2004), Canon and Feinstein (2005), Hanna (2007), Pickard (2007), Wheeler (2007), and Black and Ellis (2009) to name but a few.

2.2 Bloom's taxonomy and Bloom's revised taxonomy in coursebook/textbook evaluation

As can be seen from the reviewed literature, Bloom's Taxonomy has been employed in different fields. In the field of coursebook/textbook evaluation, too, there are some studies which have made use of Bloom's taxonomy; however, such studies are quite small in number. The only studies done in this field are the ones done by Hoepfel (1980), Amin (2004), Mosallanezad (2008) and Gordani (2008).

2.3 Research on coursebook/textbook evaluation

So far, quite a number of studies have been conducted on textbook evaluation all over the world which highlight the great significance of textbooks in language teaching and learning. Several of these studies centered on developing criteria for materials evaluation and selection (See for instance, Suh (1970), Gracia and Armstrong (1979), Grosskopf (1981), Williams (1983), Kearsey and Turner (1999) Xu (2004) and Altman, Ericksen, and Pena-Shaff (2006)). Several others, though, practically evaluate some particular materials (See for instance, Gray (2000), Yakhontova (2001), Morgan (2003), Vellenga (2004), Child, Pearson, and Amundson (2007), Stone and Gambrill (2007) and Bremner (2008)). In the Iranian context, the following studies are conducted including Amerian (1987), Rastegar (1992), Kheibari (1999), Shahedi (2001), Ansary and Babaii (2002), Yarmohammadi (2002), Khormaei (2005), Marzban (2005), Darali (2007), Davatgarzadeh (2007), Iraj (2007), ZareAsl (2007), ZareMoayedi (2007), Razmjoo (2007) and Soozandehfar (2011). The current study, however, has a different approach toward coursebook evaluation since it tries to evaluate coursebook not based on evaluation frameworks which have been used vastly by different scholars, rather it tries to evaluate coursebooks in terms of cognitive domains of language learning. As it was clear from the literature, there was a paucity of research in this field. Accordingly, this study intends to see whether learning activities in Interchange series encompass an adequately wide range of intellectual and cognitive skills. The study gains significance since Interchange series are still widely used in many institutes in Iran, including Shiraz University Language Center, Shiraz, Iran.

3. Methods of the Study

3.1 Research design

This study is mainly a document or content analysis type. In this type of research method, written or visual materials are analyzed for the purpose

of identifying specified characteristics of the material (Ary, Jacobs, Razavieh & Serensen, 2006).

Using a coding scheme, three units were chosen from each coursebook of the Interchange series, one from the first part, one from the middle and one from the last part of each book. It is worth noting that all four coursebooks follow somehow a similar pattern; however, each coursebook was evaluated in order to see which levels of Bloom's revised taxonomy were more emphasized in each one. Consequently, three units from each coursebook were coded in terms of learning objectives.

3.2 Materials

The materials of the current study were four coursebooks of Interchange Third Edition series which were evaluated by the researchers on the basis of Bloom's revised taxonomy. Below is the list of the coursebooks under study:

- Richards, Hull & Proctor (2005). Interchange (Intro): Students' book (3rd ed.). Cambridge: Cambridge University Press.
- Richards, Hull & Proctor (2005). Interchange: Student's book 1 (3rd ed). Cambridge: Cambridge University Press.
- Richards, Hull & Proctor (2005). Interchange: Student's book 2 (3rd ed). Cambridge: Cambridge University Press.
- Richards, Hull & Proctor (2005). Interchange: Student's book 3(3rd ed). Cambridge: Cambridge University Press.

Interchange Third edition includes a four-level, multi-skills English series for adult and young-adult learners of English from the beginning to the high-intermediate level. The title of these coursebooks is the Interchange (Third Edition). They are all in 113 pages. Each book consists of sixteen units, each for six pages. As the authors of Interchange coursebooks, Richards, Hull and Proctor (2005), argue every unit in Interchange Third Edition contains two cycles, each of which has a specific topic, grammar point, and function. All the four coursebooks somehow follow a similar pattern because there are some sections in each

unit which exist among all the books; however, their sequence is not the same in all units and in all the four books. A cycle is a sequence of exercises that usually consists of the introduction of a new topic through a "Snapshot" or "Word Power" exercise; these exercises introduce the unit, present vocabulary for discussing the topic and prepare students to understand the cultural material in the conversation. Following this section is usually the "Conversation" section which provides structured listening and speaking, introduces the meaning and use of grammar in context and uses pictures to set the scene and illustrate new vocabulary. "Grammar focus" section provides controlled grammar practice in realistic contexts, such as short conversations. "Listening" section develops a variety of listening skills, such as listening for main ideas and details. "Pronunciation" section provides controlled practice in recognizing and producing sounds which are linked to the cycle grammar. "Speaking" section provides communicative tasks that help develop oral fluency, recycles grammar and vocabulary in the cycle and usually includes pair work, group work, and class activities. "Writing" section provides a model writing samples, develops skills in writing different texts and finally reinforces the vocabulary and grammar in the cycle or unit. The ever last but not least section is "Reading" which presents a variety of text types, introduces the text with a pre-reading task, develops a variety of reading skills, such as reading for main ideas, reading for details, and inferencing and finally promotes discussion that involves personalization and analysis.

3.3 Coding scheme

The study utilized a coding scheme which was designed by the researchers to codify, classify, and analyze the content of the coursebooks.

Carefully studying the definitions and the key verbs of each category of the Bloom's Revised Taxonomy, the researchers developed a coding scheme based on the Bloom's Revised Taxonomy. The resulting coding scheme is shown in Table 1. The cognitive dimension consists of six

levels from the simple recall or recognition of facts, as the lowest level, through increasingly more complex and abstract mental levels of evaluation and creation. The categories are labeled: A) Remember B) Understand C) Apply D) Analyze E) Evaluate F) Create. Moreover, the knowledge dimension comprises four types of knowledge: 1) Factual knowledge 2) Conceptual knowledge 3) Procedural knowledge and 4) Metacognitive knowledge.

Table 1. Coding scheme based on Bloom's revised taxonomy

The Knowledge Dimension	The Cognitive Process Dimension					
	A. Remember	B. Understand	C. Apply	D. Analyze	E. Evaluate	F. Create
1. Factual Knowledge	A1	B1	C1			
2. Conceptual Knowledge	A2	B2	C2	D0	E0	F0
3. Procedural Knowledge	A3	B3	C3			
4. Metacognitive Knowledge	A4	B4	C4	D4	E4	F4

3.4 Data collection and analysis procedures

The data for this study which were mainly exercises and activities were first codified. Exercises and activities have been chosen because they are the building blocks of Interchange. After codifying the content, evaluation was performed to determine what learning activities the content maintained. This study was a qualitative type of research; however, some quantitative analysis was done for computing the frequency of each level of learning objectives in Bloom's Revised Taxonomy.

3.4.1 Coding a sample of the coursebook

In order to clarify how codification was done in this study, 3 exercises from Interchange 1 have been codified below. Below is a detailed exemplification of how codification was done in this study.

1 SNAPSHOT

**THE TOP FIVE SPORTS AND FITNESS ACTIVITIES
in the UNITED STATES**

SPORTS	FITNESS ACTIVITIES
<input type="checkbox"/> Basketball	<input type="checkbox"/> Weight training
<input type="checkbox"/> Volleyball	<input type="checkbox"/> Treadmill
<input type="checkbox"/> Softball	<input type="checkbox"/> Stretching
<input type="checkbox"/> Football	<input type="checkbox"/> Walking
<input type="checkbox"/> Soccer	<input type="checkbox"/> Jogging

Source: SGMA International, Sports Participation in America: 2002

Do people in your country enjoy any of these sports or activities?
Check (✓) the sports or fitness activities you enjoy.
Make a list of other sports or activities you do. Then compare with the class.

The purpose of "Snapshot" is to introduce the unit and present vocabulary for discussing the topic. In this part, first a list of sports and fitness activities in the United States is presented. The list is then followed by three questions. The very first question in which students are supposed to say whether people in their country enjoy any of those sports is codified as A1 (remembering factual knowledge) because what learners are just expected to do is recalling and remembering a specific element which is whether people in their own country enjoy any of those activities or not. The reason it is codified as A1 and not A2 or A3 is that what they should remember is a specific detail or element and not a structure or a procedure. For that reason, it is labeled as A1 (remembering factual knowledge). The second and third questions in which students are to check the sports or fitness activities they enjoy and make a list of other sports they do is also given the code of A1 which is remembering of factual knowledge. Again all the students should do is simply recalling and restating the learned information. In the third question, however, learners are also asked to compare their own list with the class. The assigned code to this part is D0.


2 WORD POWER Sports and exercise

A Which of these activities are popular with the following age groups? Check (✓) the activities. Then compare with a partner.

	Children	Teens	Young adults	Middle-aged people	Older people
aerobics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
baseball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
bicycling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
tennis	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
soccer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
swimming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
weight training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
yoga	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

B Pair work Which of the activities above are used with *do*, *go*, or *play*?

do aerobics *go* bicycling *play* baseball




The second part of this unit is "Word power". In part A of this exercise, students should first check the activities that are popular with different age groups. This is codified as B1 (understanding factual knowledge) because students are expected to grasp the meaning of each activity by interpreting it and explaining their answer. In other words, they should understand or as said in the generic skill "grasp the meaning" of yoga for example so that they become able to decide it is popular with which of the age groups. In the second part, the learners ought to compare their answers with a partner; that is to say, they have to compare their answers with a partner to make a final decision. Therefore, the fitting code for this part would be E0 (Evaluating, judging or making decision). Part B (pair work) of this exercise also received B1 (understanding factual knowledge) since there is a need for the students to comprehend and identify which activity goes with the verb "do" and which one is used with "go" or "play".

3 CONVERSATION I hardly ever exercise.

A Listen and practice.

Marie: You're really fit, Paul. Do you exercise a lot?
 Paul: Well, I almost always get up early, and I lift weights for an hour.
 Marie: Seriously?
 Paul: Sure. And then I often go in-line skating.
 Marie: Wow! How often do you exercise like that?
 Paul: About five times a week. What about you?
 Marie: Oh, I hardly ever exercise. I usually just watch TV in my free time. I guess I'm a real couch potato!

B Listen to the rest of the conversation. What else does Paul do in his free time?



The third section of the unit is "Conversation". In this section, learners are expected to listen and practice. As far as listening is concerned, the

right code is A1, because learners are just expected to listen to the tape and silently read the conversation. In the next phase, however, students are asked to practice the conversation. At this point, students should formulate a new conversation based on the one in the book; that is to say, they ought to make use of the information in a new situation from the one in which it was learned. The proper code for this part is C3 (apply procedural knowledge). Part B of this exercise is again codified as A1 since students are merely said to recall the information from the listening.

3.4.2 Reliability of the coding scheme

Two kinds of reliability analysis were carried out in this research, namely inter-coder and intra-coder reliability with regard to the coding scheme. To calculate the inter-coder reliability, four Ph.D students of TEFL at Shiraz University codified one complete unit of Interchange (8.3 % of the data). It is worth noting that all the coders were prepared for the task through a 90 minute training session in which Bloom's Revised Taxonomy was introduced to them by the researchers. The cognitive domain of the Bloom's Revised Taxonomy and the coding scheme designed was also explained to them in detail. The coders were then provided with copies of the coding scheme and the unit which was supposed to be codified by them. Finally, they were asked to read the coding scheme carefully and codify the exercises accordingly. The agreement between the average of their coding attempts and that of the researchers was found to be 97.2% and was used as the inter-coder reliability. The statistical procedure used to determine the reliability was correlational analysis in the SPSS, version 16.

To ensure intra-coder reliability, one whole unit (8.3% of the data) was selected randomly. The data, then, was coded twice by the researchers in a three-week time span and the degree of consistency in the two coding attempts was found to be 97.9%, being used as the intra-coder reliability.

4. Results and Discussions

4.1 Learning objectives in interchange coursebooks in terms of Bloom's revised taxonomy

Table 2 (Appendix) depicts the frequencies and percentages of the distribution of different levels of Bloom's Revised Taxonomy in Interchange coursebooks. The findings in this table are the results of the codification of a sample of Interchange coursebooks based on Bloom's Revised Taxonomy. As indicated in the table, in the first book of Interchange series-Intro-the most frequent learning level is "Remember Factual Knowledge" (A1) with the frequency of 43.01%. The next most frequent code was C2 (Apply Conceptual Knowledge) with a percentage of 24.73%, while A4 (Remember Metacognitive Knowledge), B3 (Understand Procedural knowledge), B4 (Understand Metacognitive Knowledge), C4 (Apply Metacognitive Knowledge), D4 (Analyze Metacognitive Knowledge), E0 (Evaluate using Facts, Concepts, Principles and Procedures), E4 (Evaluate Metacognitive Knowledge) and F4 (Create Metacognitive Knowledge) are totally absent in the coded data.

In interchange 1, A1 (Remember Factual Knowledge) is again the most frequent code with the frequency of 27.27%, and C2 (Apply Conceptual Knowledge) is the next most common code with the frequency of 22.23%, while A3 (Remember Procedural knowledge), A4 (Remember Metacognitive Knowledge), B3 (Understand Procedural knowledge), B4 (Understand Metacognitive Knowledge), D4 (Analyze Metacognitive Knowledge) and E4 (Evaluate Metacognitive Knowledge) are absent in the coded units.

In books 2 and 3, A1 (Remember Factual Knowledge) is also found to have the highest frequency. In Interchange 2, its frequency is 29.3% and in Interchange 3 it is 24.56%. However, the next most frequent code in these two books are B1 (Understand Factual Knowledge) with the frequency of 19.83% and 23.68%, respectively. In addition, A3, A4, B4, E4 have all the lowest frequency of 0% in these two books.

On the whole, A1 (Remember Factual Knowledge) which is the very first level of Bloom's Revised Taxonomy is found to be the most frequent code among the four coursebooks of Interchange series with a percentage of 31.02%. The next most frequent code was C2 (Apply Conceptual Knowledge) with a percentage of 17.61%. A4 (Remember Metacognitive Knowledge), B4 (Understand Metacognitive Knowledge) and E4 (Evaluate Metacognitive Knowledge) are also found to be the least frequent codes with 0% of distribution. In between we have B1 with a frequency of 16.82%, C4 (2.31%), E0 (6.02%), D0 (5.68%), C3 (4.92%), C1 (4.7%), F0 (4.5%), B2 (3.61%), A2 (0.95%), F4 (0.72%), B3 (0.65%), A3 (0.27%) and D4 (0.22%).

Classifying the six levels of Bloom's Revised Taxonomy into "lower" and "higher" order cognitive skills gives us the following results in Table 3 below.

Table 3. Lower and higher order cognitive skills in Interchange coursebooks

Learning Objectives		Lower order cognitive skills	Higher order cognitive skills
Intro	Frequency & Percentage	85 (91.4%)	8 (8.6%)
Interchange 1	Frequency & Percentage	81 (81.82%)	18 (18.18%)
Interchange 2	Frequency & Percentage	93 (80.17%)	23 (19.83%)
Interchange 3	Frequency & Percentage	89 (78.07%)	25 (21.93%)
Average	Frequency & Percentage	87 (82.86%)	18.5 (17.14%)

As can be seen in this table, lower order cognitive skills are the most frequent in the continuum of higher and lower order cognitive skills according to the classification of learning objectives of the taxonomy. In other words, lower order cognitive skills were mostly paid attention to in Interchange coursebooks. This is indicative of the fact that the three categories at the bottom of the taxonomy, i.e. "Remember", "Understand" and "Apply" were the most prevalent categories in these books.

The data used in this study are categorical and gathered by counting the frequency of certain codes. In other words, what we are dealing with is non-parametric type of data. Therefore, Chi-square test as a non-parametric test was run in order to see how the four books of Interchange series could be compared in terms of the levels of Bloom's Revised Taxonomy. The result of the Chi-square test is shown in Table 4 below.

Table 4. Chi-square test for four coursebooks of Interchange in terms of learning objectives

	Intro	Int.1	Int.2	Int.3
Chi-Square	153.774	95.303	138.897	71.263
df	9	11	13	9
Asymp. Sig.	.000	.000	.000	.000

As indicated in Table 4 above, Chi-square test gives us a significant result (Sig=.000) in all the four coursebooks. This means that the distribution of the codes or learning levels is not equal in the books. In other words, the codes are not distributed evenly among the books. It can, therefore, be concluded that the differences between the frequencies of occurrence of different levels of the taxonomy of learning objectives do not have a specific pattern in the Interchange coursebook series. That is, they occur by chance and are random.

Another Chi-square test was also carried out to see the differences between the frequency of the occurrence of higher and lower order thinking skills through the four Interchange coursebooks. The result of this Chi-square gives us a significant result, too. Table 5 below illustrates such result.

Table 5. Chi-square test for four coursebooks of Interchange in terms of higher and lower order thinking skills (HOTS and LOTS)

	Intro	Int.1	Int.2	int.3
Chi-Square	63.753	40.091	42.241	35.930
df	1	1	1	1
Asymp. Sig.	.000	.000	.000	.000

The significant result (Sig=.000) here is indicative of the fact that there is a significant difference pattern in the frequency of the occurrence of higher order thinking skills (HOTS) and lower order thinking skills (LOTS) through the Interchange coursebooks content.

4.3 Discussion

As was shown in the findings in Table 2, in the very first book of Interchange series-Intro-A1 (remember factual knowledge), the lowest cell in Bloom's Revised Taxonomy is the most frequent code with the percentage of 43.01% which is the highest frequency not only in Intro but also among all the four books. This means that this very low learning objective has been paid a lot of heed in Intro. It might be due to the learners' level of proficiency. Because at this level of language proficiency, students have no prior experience in learning a foreign language and they are thought to be beginner learners of English. Therefore, their low proficiency level holds them back in reaching higher levels of cognitive skills; that is to say, they might only be able to do simple cognitive tasks of recalling the learned information and not be able to perform more complex cognitive tasks such as analyzing, evaluating and creating.

It is also worth noting that although in the three other books, "A1" is still the most frequent code, its frequency decreases in the next three books. In book 1, it has a frequency of 27.27%, in book 2 its frequency is 29.3%, while in book 3 it decreases to 24.56%. This means that the attention in other books is less directed toward this very low learning objective and more toward other higher objectives.

The second most frequent code is C2 (apply conceptual knowledge) in Intro and Interchange 1 with a frequency of 24.73% and 22.23% respectively. In the exercises that were codified as C2, learners were mainly required to apply a model or structure whether it was a grammatical rule or a rule of intonation. It is expected that the second most frequent learning objectives in Interchange 2 and 3 be from HOTS. Contrary to our expectation, however, the findings of this study show that

the second most frequent code in Interchange 2 and 3 is not only one from HOTS, but it is B1 (understand factual knowledge) which is even one cell below the second most frequent code in Intro and Interchange 1. So as can be seen, the second most frequent code is again among the LOTS.

The other interesting though quite probable result of this study is the increase in the percentage of HOTS and decrease in the percentage of LOTS in Interchange coursebooks. According to Table 4, the percentage of HOTS increases from 8.6% in Intro to 21.93% in Interchange 3. On the other side, the percentage of LOTS decreases from 91.4% in Intro to 78.07% in Interchange 3. In fact, it is expected that, as the learners' level of proficiency increases, the content of the coursebooks mainly moves toward HOTS because it is supposed that learners with higher levels of language proficiency must be able to perform more complex cognitive activities of analyzing, evaluating and creating and this is true with the Interchange coursebooks.

Overall, however, LOTS outnumbered HOTS in these coursebooks. The average percentage of LOTS is found to be 82.86% while that of HOTS is calculated as 17.14%. This means that LOTS are the most prevalent learning levels in these books. This result is in line with the results of Amin's (2004) study in which LOTS are more frequent in the General English coursebook taught in Shiraz University and also Mosallanejad's (2008) study where lower-order cognitive skills are more prevalent than higher order ones in Iranian senior high school and pre-university English coursebooks. Moreover, Gordani (2008) came to such a finding in his research and found that lower levels of cognitive skills were more dominant in guidance school English coursebooks.

In a somehow similar vein, ZareMoayed (2007) in his study on the evaluation of Interchange series based on Littlejohn's (1998) framework came to the fact that Interchange coursebooks do not make use of learners or even the teachers as a source for their content. In addition, it was found that these are not the learners who initiate the task. This is in some way similar to the just mentioned result of the current study in

which the involvement of the learners was found to be slightly limited to Lower Order Thinking Skills.

A further result obtained from the current study is the significant differences in the frequency of occurrence of learning levels in Interchange coursebooks which is indicative of the fact that different learning objectives are not used consistently in Interchange books. This result is again consistent with one of the results in Mosallanejad's (2008) study which shows a significant difference between the senior high school and the pre-university coursebooks in terms of the levels of the taxonomy.

The lack of systematicity found in the pattern of learning objectives in Interchange coursebooks was also experienced by Iraj (2007) who evaluated Interchange coursebooks to determine how communicative and task based they were and found that the communicative activities in Interchange series followed a random pattern of distribution.

The last finding worth discussing is the unanimous absence of three codes among the four coursebooks under the study. As can be noticed in Table 3, these codes are A4 (remember metacognitive knowledge), B4 (understand metacognitive knowledge) and E4 (evaluate metacognitive knowledge). What is common among these three codes is the element of metacognitive knowledge which has been defined as the knowledge of cognition in general as well as awareness and knowledge of one's own cognition and it includes strategic knowledge, knowledge about cognitive tasks, including appropriate contextual, conditional knowledge and self-knowledge. In other words, it is the internal question that each learner is supposed to ask himself or herself in answering a specific question or doing a specific exercise and since this is an internal cognitive activity, it might not have overt manifestation in the coursebooks. That's perhaps the reason why no instance of this code was observed in these coursebooks.

All these deficiencies proved about Interchange by different scholars can make us think more deeply about the coursebooks we use in our classes and try our best to alleviate these mentioned shortcomings.

5. Conclusions

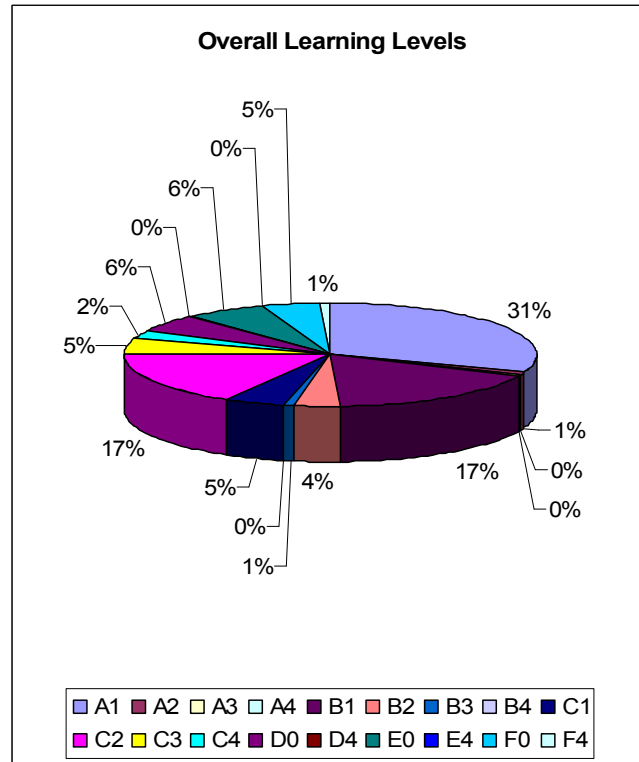
In this section, the research questions presented are answered one by one.

5.1 *How are the levels of Bloom's Revised Taxonomy represented in Interchange?*

In all four books of Interchange series, A1 (remember factual knowledge), the lowest cell in Bloom's Revised Taxonomy, was found to be the most frequent learning level. The frequencies of A1 in these books were as follow: Intro (43.01%), Interchange 1(27.27%), Interchange 2 (29.3%) and Interchange 3 (24.56%). The next most frequent learning level, however, was not the same in all the four books. In Intro and Interchange 1, C2 (apply conceptual knowledge) was the next most common code with the frequency of 24.73% and 22.23%, respectively while in Interchange 2 and 3 the next most frequent code was found to be B1 (understand factual knowledge) with the frequency of 19.83% and 23.68%, respectively.

Calculating the average of all the codes percentages, the researchers found that A1 was the most frequent code among the four coursebooks of Interchange series with a percentage of 31.02%. The next most frequent code was C2 (apply conceptual knowledge) with a percentage of 17.61%. Interestingly enough, A4 (remember metacognitive knowledge), B4 (understand metacognitive knowledge) and E4 (evaluate metacognitive knowledge) were also found to be the least frequent codes with 0% of distribution. In between, there were B1 with a frequency of 16.82%, C4 (2.31%), E0 (6.02%), D0 (5.68%), C3 (4.92%), C1 (4.7%), F0 (4.5%), B2 (3.61%), A2 (0.95%), F4 (0.72%), B3 (0.65%), A3 (0.27%) and D4 (0.22%). Figure 4 evidently shows this claim.

Figure 4. Average learning levels among four books of Interchange series



5.2 Which course-book fulfills the highest levels of learning, namely, analyzing, evaluating and creating?

Among all the four books in Interchange series, Interchange 3, the book for upper-intermediate, had the highest percentage of HOTS (21.93%). In fact the percentage of HOTS increased from 8.6% in Intro and reached its highest in Interchange 3(21.93%). Such a result is highly expected because it is supposed that learners with higher levels of language proficiency must be able to perform more complex cognitive activities of analyzing, evaluating and creating. It must, however, be noted that still it is not a satisfactory result and we expect that all the books benefit more from the higher levels of learning especially in an era in which critical thinking is of such a great importance. Taking into consideration the fact that critical thinking skills are essential tools in everyone's life, education

should equip learners with these skills and since coursebooks are one of the richest educational means through which critical thinking should be expanded, it is highly necessary that coursebooks benefit from higher levels of learning, i.e. analyzing, evaluating and creating.

6. Pedagogical Implications

In this section, some practical implications are presented which are based on the results of this study and might be of use to the English courses which make use of Interchange series as their coursebooks.

1. As was shown in this study, the contents of Interchange coursebooks revolved around lower order thinking skills. In order for the coursebooks to be made more effective, coursebook developers should try to devise exercises and activities that include higher order thinking skills. For such a purpose, more evaluative tasks and tasks in which students are required to analyze and create should be incorporated. Incorporating more complex cognitive activities, however, should be in accordance with the students' level of proficiency.
2. Hopefully enough, since Interchange series are based on CLT principles, they do benefit from a variety of pair work and group works. Nevertheless, in order to make them much more effective, teachers are better to devise some extra pair work and group work activities where there are no such exercises so that students be truly engaged in the creative process of analyzing, evaluating or creating ideas all the time.
3. Even if the coursebook itself does not satisfy higher order thinking skills, teachers can benefit from supplementary materials. They are not supposed to only stick to the coursebook. Some scholars like Cunningsworth (1984) believe that course materials for English should not be regarded as the teacher's master, rather they are the teacher's servant and should be at the service of teachers. Many others believe that coursebooks are merely starting point from which teachers are stimulated and provoked to create lessons for their classes. Consequently, some supplementary materials such as films, songs,

games, short stories can be included in ways that require students to think deeply and perform more complex cognitive activity.

4. A very interesting result of the current study was the total absence of metacognitive knowledge which is the knowledge of cognition in general as well as awareness and knowledge of one's own cognition and it includes strategic knowledge, knowledge about cognitive tasks, including appropriate contextual, conditional knowledge and self-knowledge. So, it is better that this type of knowledge be somehow included in the coursebook. For this to happen, coursebooks can benefit from some types of reflective exercises in which students are required to think about the way they come to a specific answer. This can make them better problem solvers and better language learners. This is a very crucial issue especially in today's age in which issues such as "learner autonomy" and "reflective thinking" are greatly emphasized.

7. Recommendations for Future Research

Conducting the present study, some suggestions for further research came out that might be useful.

1. With regard to this line of research, another study can be conducted to see the representation of Bloom's Revised Taxonomy in the tests designed for these coursebooks. In other words, there is a need for another study to investigate what learning objectives the tests of these books pursue.
2. A different study can also be done by observing real classes in which Interchange books are taught to see the extent to which the teachers apply Bloom's Revised Taxonomy in their teaching. In such a study, it would be interesting to know whether teachers focus on higher order thinking skills or tend to pay more heed on lower order cognitive skills.
3. Another suggestion for further research would be an investigation in to the teachers and students' beliefs and ideas regarding Interchange series. This can be done via interviewing them or some carefully

designed questionnaires based on Bloom's Revised Taxonomy. In this way, we can see the representation of Bloom's Revised Taxonomy in Interchange from the point of view of actual users of Interchange coursebooks.

4. Further research is also needed to see what kind of homework is assigned to the students. Are the students for example merely asked to memorize a conversation and simply asked to retrieve learned information or are they required to do complex cognitive tasks of analyzing, evaluating and creating?
5. Another similar study can be carried out to see the representation of Bloom's Revised Taxonomy in Topnotch series, a newly published book but not so widely used one.
6. A further suggestion for further study would be the comparison and contrast of Interchange series and Top Notch series regarding their representation of Bloom's Revised Taxonomy. The result of such a study would be quite beneficial for the sake of materials selection because it would suggest a coursebook that is more in line with higher levels of thinking and satisfy the highest levels of learning.

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Appendix
Table 2. Learning objectives in Interchange textbooks

Learning Objectives	Remember		Understand		Apply		Analyze	Evaluate	Create									
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage												
Codes	A1	A2	A3	A4	B1	B2	B3	B4	C1	C2	C3	C4	D0	D4	E0	E4	F0	F4
Average	28	24.56%	34	29.3%	27	27.27%	40	43.01%	Intro (Total: 93)	(Total:93)	Frequency & Percentage	Frequency & Percentage	Frequency & Percentage	Frequency & Percentage	Frequency & Percentage	Frequency & Percentage	Frequency & Percentage	Frequency & Percentage
31.02%	0	0%	2	1.72%	1	1.01%	1	1.07%										
0.95%	0	0%	0	0%	0	0%	1	1.07%										
0.27%	0	0%	0	0%	0	0%	0	0%										
0%	0	0%	0	0%	0	0%	0	0%										
16.82%	27	23.68%	23	19.83%	15	15.15%	8	8.6%										
3.61%	8	7.02%	5	4.31%	2	2.02%	1	1.08%										
0.65%	0	0%	3	2.59%	0	0%	0	0%										
0%	0	0%	0	0%	0	0%	0	0%										
4.7%	7	6.14%	5	4.31%	4	4.04%	4	4.3%										
17.61%	14	12.28%	13	11.21%	22	22.23%	23	24.73%										
4.92%	3	2.63%	4	3.45%	6	6.06%	7	7.53%										
2.31%	2	1.75%	4	3.45%	4	4.04%	0	0%										
5.68%	4	3.52%	9	7.76%	6	6.06%	5	5.38%										
0.22%	0	0%	1	0.86%	0	0%	0	0%										
6.02%	15	13.16%	8	6.9%	4	4.04%	0	0%										
0%	0	0%	0	0%	0	0%	0	0%										
4.5%	6	5.26%	4	3.45%	6	6.06%	3	3.23%										
0.72%	0	0%	1	0.86%	2	2.02%	0	0%										