Bloom's Revised Taxonomy across the Learning Objectives in English Translation Curricula

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Abstract

Developing critical thinking is among the most appreciated objectives in academic programs. The present study examined the undergraduate and graduate English Translation curricula of Iran's higher education (known as Sarfasl) based on Bloom's Revised Taxonomy (BRT) to find the degree to which levels of BRT were reflected in the curricula. To this end, content analysis was carried out to determine the frequency and proportion of the objectives associated with knowledge (factual, conceptual, procedural, and metacognitive) and cognitive (remember, understand, apply, analyze, evaluate, and create) dimensions. The results revealed that in both curricula, the proportion of lower-order thinking skills (i.e., remember, understand, and apply) were emphasized more than the higher-order ones (i.e., analyze, evaluate, and create) in general. The results also showed that the most frequent objective in terms of the knowledge domain was the category of understand in both curricula. With regard to knowledge dimension, conceptual knowledge occurred most often, confirming that acquiring knowledge acts as a benchmark in educational quality assurance for curriculum designers. In addition, it was found that the metacognitive-related categories were mostly missing and understand/conceptual category had a dominant role in both curricula. The findings imply that the existing curricula need to be re-structured to reflect critical thinking including both knowledge and cognitive domains to facilitate learner autonomy.

1. Introduction

The challenges of the twenty-first century, rapid developments, technological advances and the information highway, with its complex social and economic pressures, require people to be innovative, creative, and equipped with adequate confidence and critical thinking (CT) skills. Lack of due attention to the role of CT in our education might create students who are notable memorizers and passive receivers of accumulated knowledge rather than critical thinkers (Fahim & Shakouri, 2012; Yousofi & Zamani, 2016). In fact, the major goal of education should be creating individuals "who are capable of doing new things rather than repeating what the previous generations have already done, and to form minds which can think critically, and verify rather than passively accepting everything offered" (Fisher, 1995, p. 22).

A glance at the graduates of Iranian educational system reveals a paucity of critical thinkers, especially in humanities (Divsar & Jafari Gohar, 2014; Kaffash, Z. Abedi Kargiban, S. Abedi Kargiban, & Talesh Ramezani, 2010). This is due to the observation that most of our educators are fairly good knowledge accumulators rather than critical thinkers or analytical practitioners (Fahim & Shakouri, 2012; Razmjou, Bonyadi, & Haghi, 2012). Mere information memorization is not enough to face the ups and downs of the rapid, ever-changing developments of society; therefore, training CT skills must be "at the top of … all curriculum goals" of educational systems (Halpern, 1999, p. 23).

A curriculum is a well-defined and prescribed document that serves to provide insight into learning goals, course objectives, behavioral outcomes, pedagogical activities, and assessment procedures applied during the delivery of a program (Dörnyei, 2007). As Kelly (1989, cited in Finney, 2002) has stated, "it reflects the overall rationale for the educational programme of an

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institution" (p. 70). As a result, any shortcomings of the curriculum would also affect the quality of instruction and lower the ideal standards. A well-designed curriculum which integrates the elements of CT can directly and indirectly influence all educational practitioners at all educational levels and help them to educate their students truly. As Amin-Khandaghi and Pakmehr (2013) have stated, curriculum elements (goal, content, learning methods and evaluating approaches) have an inevitable role in the development of CT. Most studies conducted in Iran focused on the evaluation of English textbooks using bloom's taxonomy (Gordani, 2010; Razmjoo & Kazempourfard, 2012). However, the present study employed the two-dimensional Bloom's revised taxonomy to evaluate the Iranian English Translation curricula at the undergraduate and graduate levels to discover their strengths and weaknesses in terms of CT and to ascertain the extent to which relevant cognitive and knowledge dimensions are reflected in the existing curricula.

2. Literature Review

The theoretical framework of this study is based on Anderson and Krathwohl's (2001) BRT, a revision of Bloom's taxonomy of educational objectives. They redefined the cognitive domain as the intersection of the knowledge dimension and the cognitive process dimension. The knowledge dimension is divided into *factual, conceptual, procedural*, and *metacognitive* knowledge ranging from concrete to abstract. The cognitive dimension consists of *remember*, *understand*, *apply*, *analyze*, *evaluate*, and *create*. Bloom and his colleagues (1956) outlined a hierarchy of six thinking skills from the lowest to the highest: *remembering*, *understanding*, and *applying* (called lower-order thinking skills or LOTS) and *analyzing*, *evaluating*, and *creating* (also known as higher-order thinking skills or HOTS).

The development of CT skills cannot be completely achieved through individual subject or course, however "it is imperative to use a cross-curricular approach to foster CT among students at all levels" (Thompson, 2011, p. 4) or implant it in the learning objectives of the curriculum (Divsar & Jafari Gohar, 2014). A strong curriculum would involve placing explicit value "on the reflexivity between creativity and critical thinking demonstrated by the students" (Belluigi, 2009, p. 717).

Documents outlining the goals in educational systems such as universities and colleges from several countries consider CT as one of their major pursued goals. As Ahern, O'Connor, McRuairc, McNamara, and O'Donnell (2012) have stated, CT is perceived as "a graduate attribute that a university education claims to instil in students and is seen as the defining characteristic of a university education" (p. 125). In the UK National Curriculum (1999), for example, it is stated that by offering "rich and varied contexts for pupils to acquire, develop and apply a broad range of knowledge, understanding and skills, the curriculum should enable pupils to think creatively and critically, to solve problems and to make a difference for the better" (p.11).

In Turkey, there has been a move from didactic mode of teaching to higher-order learning in an attempt to attain the goal of "educating all Turkish citizens as individuals who can think independently and scientifically and who are constructive, creative and efficient" (National Education Act, 1973, cited in Kanik, 2010, p. 8). To reach this end, the curricula of the elementary education level were revised and redesigned in light of a constructivist approach to include higher-order thinking. "The programs at all levels of elementary education aim to develop nine basic skills namely critical thinking skills, creative thinking skills, communication skills, research skills, problem solving skills, information technology skills, entrepreneurship skills and skill of using language effectively" (Kanik, 2010, p. 8).

However, despite the emphasis on the development of CT, it seems like an unachievable goal of education (Case, 2005; Hashemian Nejad, 2001). Paul (1995) has stated that the "fundamental problems in schooling today are fragmentation and lower order learning. Atomized lists dominate curricula, atomized teaching dominated instruction, and atomized recall dominates learning. What is missing is coherence, connection, and depth of understanding" (p. 273). Belluigi (2007) also discovered the discrepancies in the espoused South African creative arts curriculum's claims to have created conducive conditions for the development of CT and creativity. Using discourse analysis, he analyzed the paradigms and discourses underpinning the relationships between form and content,

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process and product, intentionality and interpretation. The results revealed an imbalance between critical and creative thinking, which was contrary to the espoused aims of the school's curriculum. He concluded that "higher education curricula seem to be giving increasing prominence to complex learning outcomes. They are claiming to foster interpersonal skill, emotional intelligence, creativity, critical thinking, reflectiveness, incremental self-theories, autonomy and such like" (p. 700).

Both Bloom's Taxonomy and the BRT have been applied in the Iranian context to evaluate different textbooks (e.g., Riazi & Mosalanejad, 2010; Birjandi & Alizadeh, 2012; Rezvani and Zamani, 2012; Zamanian and Mobashshernia, 2011) and official curricula (Divsar & Jafari Gohar, 2014; Yousofi & Zamani, 2016). Divsar and Jafarigohar (2014) examined the TEFL curricula and found the supremacy of lower order thinking skills rather than the higher ones in most of the stated objectives. They found that the most frequent objective in terms of the knowledge domain was the category of understand in TEFL curriculum and with regard to the knowledge dimension, the conceptual knowledge occurred the most often, approving that obtaining knowledge is considered as a guarantee in the educational quality declaration for the curriculum designers. Moreover, they found that the metacognitive-related categories were mostly missing and understand/conceptual category had a leading part in the evaluated curricula.

Using Bloom's revised taxonomy, Yousofi and Zmmani (2016) evaluated Iran's BA state TEFL and English translation curricula at BA level comparatively. Using a detailed checklist which was developed according to the relevant classification of cognitive objectives, they evaluated the stated educational objectives in the aforementioned documents. The results revealed that there were slight differences between the two analyzed documents in terms of critical thinking manifestation and both curricula emphasized the development of lower order thinking skills. To conclude, any curriculum re-alignment, as Paul (1995) has stated, necessitates reconsidering the philosophy of education, setting clear-cut goals, reconstructing standards and objectives, revising assessment and evaluation, and offering instructional examples that emphasize the indispensable role of thinking in the acquisition of knowledge.

3. Research Questions

This study addressed the following research questions:

Research Question One: To what extent do undergraduate and graduate English Translation curricula reflect higher-order and lower-order thinking skills?

Research Question Two: To what extent are the levels of cognitive and knowledge dimensions reflected in undergraduate and undergraduate English Translation curricula?

4. Method

4.1. Design

This study used a mixed methods approach. As Sandelowski (2003, cited in Dörnyei, 2007) has stated, a mixed methods research study is used to achieve a more comprehensive portrait of a given event and to corroborate the findings obtained through different methods. To this end, qualitative content analysis was done along with a quantitative research framework. Since the codes and the structure of analysis were operationalized on the basis of Bloom's revised taxonomy in regard to the curricula under investigation, a priori deductive content analysis was carried out. The focus of this type of analysis is mainly on the *manifest level analysis* because it provides an objective and descriptive overview and account of the surface meaning of the data (Dörnyei, 2007). All the data were examined for content and coded for correspondence with the categories. Finally, the coded data were quantified, and the frequency count and percentage for each category were computed.

4.2. Materials and Instrument

English translation curriculum at the BA level that was officially confirmed in 2007 by the Supreme Council for Planning. English translation courses are divided into three categories: *general courses* with nine credits; *main courses* with 30 credits and *specialized courses* with 30 credits. The

sampling of English translation curriculum at the MA level was based upon the curricula officially confirmed in 2000 by the Supreme council for planning. The curriculum consists of 32 credits among which 22 credits belong to specialized obligatory courses and four credits belong to MA thesis. Six credits are optional for candidates to choose. Based on Anderson and Krathwohl's (2001) taxonomy, a coding scheme was developed (See Table 1). The scheme incorporates both knowledge to be learned (knowledge dimension) and the process used to learn (cognitive process) which represents a continuum of increasing cognitive complexity.

Table 1: Coding Scheme Based on Anderson and Krathwohl's (2001) Taxonomy

Knowledge Dimension Cognitive Dimension	Factual Knowledge	Conceptual Knowledge	Procedural Knowledge	Metacognitive Knowledge
Remember	A1	B1	C1	D1
Understand	A2	B2	C2	D2
Apply	A3	B3	C3	D3
Analyze	A4	B4	C4	D4
Evaluate	A5	B5	C5	D5
Create	A6	B6	C6	D6

4.3. Data collection and analysis procedures

The analysis was carried out both qualitatively and quantitatively. Through deductive content analysis, the data were scrutinized and codified to determine the cognitive and knowledge dimensions operationalized based on BRT. Cross-Tabulation and Chi-Square Tests were used to analyze the coded data. In addition to qualitative content analyses, descriptive statistics was carried out to compute the frequency and percentage of each level of learning objectives in the BRT. Chi-square tests including Fisher's Exact Test were also run to check the statistical significance of the differences across the frequencies of the categories.

4.3.1. Coding a Sample Course of English Translation Curriculum

In order to clarify how coding was done in this study, a sample from undergraduate Translation curriculum is codified below:

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اصول و مبانی نظری ترجمه

تعداد واحد: ۲

نوع واحد: نظری

پیشنیاز: ندارد

هدف: آشنایی با اصول و نظریات گوناگون ، تئوری های مختلف ترجمه و دشواری های آن.

سرفصل دروس: (۳۲ ساعت)

۱- تاریخچه ترجمه در ایران و غرب.

۲- نظریات گوناگون درباره ترجمه.

۳- بحث درباره تئوریهای مختلف ترجمه و ارتباط آن با ترجمه عملی.

- تطابق صوری در ترجمه.
- انتقال معنا.
- ترجمه دستوری و واژگانی.
- ترجمه خلاق.

۴- انواع ترجمه با ارائه نمونه ها.

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Figure 1: A Sample of Course Objectives of Translation Curriculum

The purpose of 'The Theoretical Principles and Basics of Translation' is to acquaint students with the basic theoretical principles of translation. In the first step, the objectives (expressed through verbs/gerunds) were identified and codified based on the BRT. For example, 'to get acquaintance with principles, different arguments, various translation theories, and the presupposed difficulties' is codified as B2 (*understand/conceptual*) because instructors have to explain translation theories, models, and structures. Since this objective deals with explaining the knowledge of theories, classifications, and categories, it is codified as B2. The second objective, 'discussing various translation theories and their relationship with practical translation' is codified as B5 (*evaluate/conceptual*). The reason it is codified as B5 is that the objective focuses on reviewing and assessing translation theories and concepts in relation to values, efficacy, and viability as well as discussing their connections to real translation, case exemplification, the conveyance of meaning, grammatical and lexical conversion, and creative translation. As it can be seen in figure 1, the objectives stated in number 1, 2, and 4 do not have any verb or gerund to clarify the intended objectives. Therefore, they had been ignored.

4.3.2. Reliability of the Coding Procedure

To calculate the inter-coder reliability, three TEFL professionals codified 20% of the randomly selected syllabi of the curricula. All the coders were prepared for the task through a 90-minute training session in advance in which the BRT and the coding scheme were explained to them in detail. The coders were asked to read the coding scheme carefully and codify the randomly selected sections to ensure the reliability of content analyses. The correlation between the average of their coding and that of the researchers was found to be 93.2%, which was indicative of high inter-coder reliability. To ensure intra-coder reliability, 20% of the randomly selected sections were also coded twice by the researchers after a four-week time interval and the reliability was found to be 97.9%, indicating high intra-coder reliability.

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5. Results

5.1. Lower-Order and Higher-Order Thinking Skills in the Undergraduate and Graduate Curricula

Table 2 presents the frequency and percentage of lower-order thinking skills and higher-order thinking skills for both the graduate and undergraduate levels:

Table 2: Lower-order and Higher-order in the Graduate and Undergraduate Curricula

		Frequency	Percent
Undergraduate	Lower-Order	139	63.2
	Higher-Order	81	36.8
	Total	220	100
Graduate	Lower-Order	50	49.0
	Higher-Order	52	51.0
	Total	102	100

Concerning the level of thinking process reflected in the translation curricula, 63.2% of the objectives address lower-order thinking skills whereas only 36.8% of them are concerned with higher-order thinking skills at the undergraduate level. At the graduate level, 49.0% of the objectives relate to higher-order thinking skills whereas 51.0% of them evoke higher-order thinking skills. In other words, the three categories at the bottom of the taxonomy, i.e., *remember, understand*, and *apply* were noticeably the most frequent ones in the undergraduate curriculum of translation.

5.2. Cognitive Dimension in the Graduate and Undergraduate Curricula

Table 3 presents the frequencies and percentages of the distribution of different levels of cognitive dimension.

Table 3: Frequency and Percentage of Cognitive Dimension in the Graduate and Undergraduate Curricula

		Frequency	Percentage
Undergraduate	Remember	5	2.3
	Understand	114	51.8
	Apply	20	9.1
	Analyze	28	12.7
	Evaluate	33	15.0
	Create	20	9.1
	TOTAL	220	100
Graduate	Remember	0	0
	Understand	42	41.2
	Apply	8	7.8
	Analyze	7	6.9
	Evaluate	38	37.3
	Create	7	6.9
	TOTAL	102	100

Concerning cognitive dimension, based on the percentages, the order is as follows for the BA curriculum: *understand* (51.8%), *evaluate* (15.0%), *analyze* (12.7%), *create* (9.1%), *apply* (9.1%), and *remember* (2.3%). For the MA level, the order of the categories is as follows: *understand* (41.2%), *evaluate* (37.3%), *apply* (7.8%), *create* (6.9%), *analyze* (6.9%), and *remember* (0%).

As Table 3 reveals, *understand* is the most frequent level of thinking in the both BA and MA curricula of translation (51.8% and 41.2% respectively). The least frequent levels of thinking in the BA and MA curricula relate to *remember*. The highest level of cognitive domain, i.e., *create* (6.9%) was found to be almost ignored in the MA curriculum of translation. Interestingly enough, this level of the domain was found to be more frequent at the BA level in comparison to that of MA. The percentage of *evaluate* (37.3%) noticeably improved as compared to the BA curriculum (15%). However, the frequency of *analyze* and *create* (6.9%) at the MA level is not adequate and it seems that in both curricula, higher-order thinking skills do not receive due attention.

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5.3. Knowledge Dimension in the Graduate and Undergraduate Curricula

Table 4 presents the results in terms of knowledge dimension:

Table 4: Frequency and Percentage of Knowledge Dimension in the Graduate and Undergraduate Curricula

		Frequency	Percentage
Undergraduate	Factual	14	6.4
	Conceptual	91	41.4
	Procedural	110	50.0
	Metacognitive	5	2.3
	TOTAL	220	100
Graduate	Factual	2	2.0
	Conceptual	45	44.1
	Procedural	54	52.9
	Metacognitive	1	1.0
	TOTAL	102	100

As Table 4 shows, *procedural* knowledge was the most frequent one in the undergraduate (50.0%) and graduate (52.9%) curricula. At both levels, *metacognitive* knowledge was the least frequent one (2.3% and 1.0% respectively). In terms of *conceptual* knowledge, the graduate curriculum (41.4%) was slightly different from that of the undergraduate (55.1%) in favor of *procedural* knowledge. The degree of attention paid to *procedural* knowledge was much higher in translation and as such, translation curricula were found to be more in favor of *procedural* knowledge rather than *conceptual* knowledge.

In terms of the knowledge dimension, the order of the levels was as follows for the undergraduate curriculum: *procedural* (50.0%), *conceptual* (41.4%), *factual* (6.4%), and *metacognitive* (2.3%). For the graduate curriculum, the order of the levels was as follows: *procedural* (52.9%), *conceptual* (44.1%), *factual* (2.0%), and *metacognitive* (1%). In addition, in translation curriculum, *procedural* knowledge is the dominant one at the both undergraduate and graduate levels.

5.4. Cross-Tabulation and Chi-Square Tests (Cognitive/Knowledge Dimension in the Undergraduate Curriculum)

In order to answer the second question as to what extent undergraduate and graduate English translation curricula reflect the higher-order and lower-order thinking skills, Cross-Tabulation and Chi-Square Tests were run. In Appendix A, the results of cross-tabulation of both dimensions in the undergraduate curriculum are given. B2 (*understand*/conceptual) category was the most frequent one (24.5%) followed by C2 (*understand*/procedural) with the percentage of 23.2. The rest are by far fewer than the first two reported cells. Other frequent codes were C6 (*create*/procedural) with the percentage of 8.6%, C5 (*evaluate/*procedural) with the percentage of 7.8%, B5 (*evaluate/*conceptual) with the percentage of 6.8%, B4 (*evaluate/*conceptual) with the percentage of 5.9%, C4 (*analyze*/procedural) with the percentage of 5.5, C3 (*apply/*Procedural) with the percentage of 4.5%, A2 (*understand*/factual) with the percentage of 3.6%, B3 (*apply/*conceptual) with the percentage of 2.7, D3 (*apply/*metacognitive) and A4 (*analyze/* factual) both with the percentage of 1.4%, A1 (*remember*/factual) and B1 (*remember*/conceptual) both with the percentage of 0.9%, C1 (*remember*/procedural), D2 (*understand*/metacognitive), A3 (*apply/*factual), D5 (*evaluate/*metacognitive), B6 (*create*/conceptual) all with the same percentage of 0.5% in order. D1 (*remember*/metacognitive), and D4 (*analyze*/metacognitive), A5 (*evaluate/*factual) and A6 (*create*/factual) and D2(*remember*/metacognitive), were totally absent in the coded data.
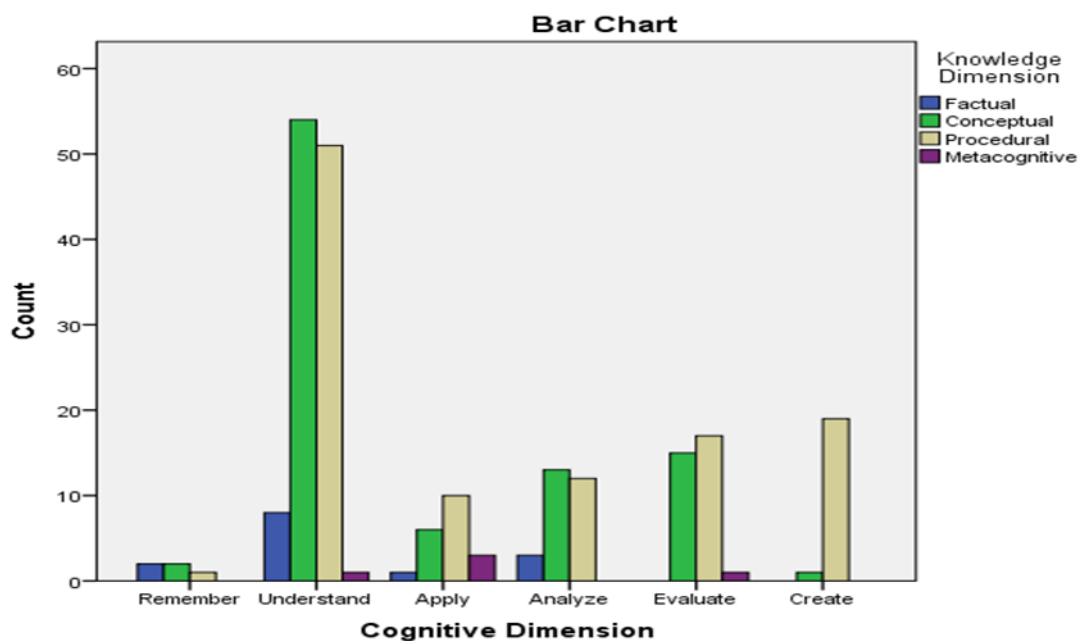
Figure 2. Cognitive/knowledge Dimension (Undergraduate Level)

Chi-square tests (Pearson Chi-square and Fisher's exact test) were run to determine the statistical significance of the differences across cognitive and knowledge dimensions in the undergraduate curriculum. The Fisher's exact test is preferably used when a Chi-square test is to be run but one or more of the cells have an expected frequency of five or less (Field, 2013). The results of the Chi-square tests are shown in Table 5 below.

Table 5: Differences across Knowledge and Cognitive Domain of the Undergraduate Curriculum

| | Value | df | Asymp. Sig. (2-sided) | Monte Carlo Sig. (2-sided) | | |
| | | | | Sig. | 99% Confidence Interval | |
					Lower Bound	Upper Bound
Pearson Chi-Square	48.003[a]	15	.000	.001[b]	.000	.002
Likelihood Ratio	42.342	15	.000	.000[b]	.000	.001
Fisher's Exact Test	37.495			.000[b]	.000	.000
Linear-by-Linear Association	10.865[c]	1	.001	.001[b]	.000	.002
N of Valid Cases	220					

a.   12 cells (50.0%) have expected count less than 5. The minimum expected count is .07.a
b.   Based on 10000 sampled tables with starting seed 957002199.b
c.   The standardized statistic is 6.478.c

As indicated in Table 5, Chi-square test presents a significant result (*Sig*=.000) for both dimension in the graduate curriculum. Since the *Sig*. value was less than the level of alpha (α =.05), the differences were found to be significant, F (15, N = 222) =37.49, p <.05. This means that the distribution of the codes or objectives is not equal in the undergraduate curriculum. It can be concluded that the differences between the frequencies of occurrence of different levels of the BRT do not have a specific and systematic pattern in the undergraduate curriculum.

5.5. Cross-Tabulation and Chi-Square Tests (Cognitive/Knowledge Dimension in the Graduate Curriculum)

In Appendix B, B2 (*understand/*conceptual) category is the most frequent one (27.5%) followed by C5 (*evaluate/*procedural) with the percentage of 24.5%, C2 (*understand/*procedural) with the percentage of 12.7%, and B5 (*evaluate/*conceptual) with the percentage of 11.8%. Other frequent codes were C3 (*apply/*procedural) with the percentage of 7.8%, C6 (*create/*procedural) with the

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percentage of 5.9%, B4 (*analyze/*conceptual) with the percentage of 3.9%, C4 (*analyze/*procedural) with the percentage of 2%, and A2 (*understand/*factual), D4 (*analyze/*metacognitive), A5 (*evaluate/*factual), B6 (*create*/conceptual) all with the percentage of 1%. The rest, i.e., D2 (*understand/*Metacognitive), D3 (*apply/*metacognitive), A4 (*analyze/*factual), A3 (*apply/*factual), B3 (*apply/*conceptual), D6 (*create/*metacognitive) and A6 (*create/*factual) with the percentage of zero. All codes within *remember* in cognitive dimension were absent. Figure 3 depicts the results of cross-tabulation for the graduate curriculum:
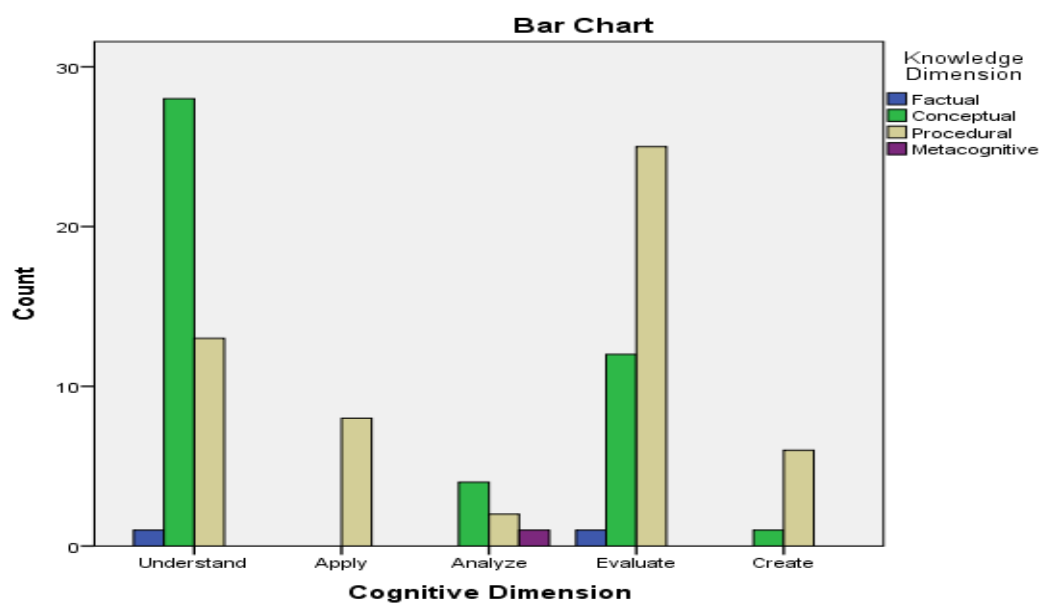

Figure 3: Cognitive/knowledge dimensions (Graduate level)

Pearson Chi-square and Fisher's exact test were also run to determine the statistical significance of the differences across cognitive and knowledge dimensions of the graduate curriculum. The results of the Chi-square tests are shown in Table 6 below.

Table 6: Differences across Knowledge and Cognitive Domain of the Graduate Curriculum

	Value	df	Asymp. Sig. (2-sided)	Monte Carlo Sig. (2-sided)		
				Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound
Pearson Chi-Square	36.106[a]	12	.000	.004[b]	.002	.005
Likelihood Ratio	31.643	12	.002	.001[b]	.000	.001
Fisher's Exact Test	31.695			.000[b]	.000	.001
Linear-by-Linear Association	9.006[c]	1	.003	.002[b]	.001	.004
N of Valid Cases	102					

a.   14 cells (77.8%) have expected count less than 5. The minimum expected count is .09.[a]
b.   Based on 1000 sampled tables with starting seed 92208573.[b]
c.   The standardized statistic is 3.928.[c]

Based on Table 6, it could be concluded that the differences across knowledge and cognitive dimensions were statistically significant, $F(10, N = 102) = 31.69$, $p < .05$ as the *Sig.* value was found to be less than that of alpha ($\alpha = .05$). The finding revealed that the knowledge and cognitive dimensions do not receive a balanced attention in graduate curriculum. This means that the distribution of the codes or learning levels is not equal in the graduate English Translation curriculum.

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6. Discussion

The results revealed that the three categories at the bottom of the taxonomy, LOTS, were noticeably the most frequent ones in the undergraduate curriculum of translation. Most of the stated objectives focus on offering explanation, interpretation and representation rather than evaluation, judgment, or creation. These findings are in line with those of Razmjoo and Kazempourfand (2012) and Roohani, Tahrei and Poorzangeneh (2014) in which the lower-order cognitive skills are found to be more prevalent in ELT textbooks than higher-order ones. They have stated that due attention must be paid to incorporating activities that cultivate self-evaluation and creation in the EFL learners' in the classroom. This is indicative of the fact that the academic curricula were not successful in developing higher-order CT skills in EFL students. Students should be encouraged to not only remember, understand and apply their major-related concepts but also have to acquire cognitive skills needed for them to be self-directed learners.

At the graduate level, the condition improved a bit and the allocated degree increased in comparison to that of undergraduate. The allocated percentages at the both undergraduate and graduate become very close to each other reflecting further concern for HOTS at the graduate. However, even at this level, the percentage of LOTS was not that much bigger than that of LOTS. It could be concluded that in the present educational system, higher levels of thinking skills (cognitive domain) do not receive a balanced attention, yet. As Razmjou, Bonyadi, and Haghi, V. (2012) stated there was an insufficient attention to CT that led to dissatisfaction in educational system.

The differences in the frequency of learning levels in the graduate and undergraduate curricula were indicative of the fact that different learning objectives were not used consistently across the levels. In a study on existing textbooks, lack of progression from the lowest (knowledge) to the highest (evaluation) cognitive levels across educational levels was also found by Riazi and Mosallanejad (2010). They indicated that although there were differences between the senior high school and the pre-university textbooks in terms of the levels of the taxonomy, they did not significantly differ in favor of higher-order.

Concerning the cognitive dimension, as Table 3 revealed, *understand* was the most frequent level of thinking in both undergraduate and graduate curricula (50.0% and 52.9%). The predominance of lower-order categories such as *understand* in both undergraduate and graduate English Translation can be justified by Krathwohl's (2002) argument that knowledge is frequently regarded as basic to all other goals of education. This justifies why the majority of the objectives in both curricula emphasize acquiring knowledge rather than constructing it through higher levels of cognitive skills. The highest level of cognitive domain, i. e., *create* was found to be almost ignored in the MA curriculum of translation where higher levels of thinking should be underscored. Interestingly enough, this level of the domain was found to be a bit more frequent at the BA level. This confirmed again Riazi and Mosallanejad's (2010) study that blamed the educational system of Iran for laying great emphasis on gaining knowledge in the form of memorization rather than developing and constructing it through higher levels of cognitive skills such as analysis and synthesis. As Brown and Brown (2010) indicated the MA curriculum should be prepared in a way to cater for CT. As Razmjou, Bonyadi, and Haghi, (2012) have stated, most of our educators are rather good knowledge accumulators and knowledge memorizers rather than critical thinkers or analytical practitioners.

It is worth mentioning that the percentage of other higher-order cognitive skills, i.e., *evaluate*, increased to a great extent in the MA level compared to that of the BA. It means that although the frequency of occurrence of the skill at the highest level of the taxonomy increased, this degree of emphasis on *analyze*, and especially *create* at the MA level was not satisfactory and calls for further attentive attention. These finding supported Stepanek's (1999) study that effective curriculum should encompass complexity and creativity to develop CT skills. The lower-order cognitive skills were found to be still more frequent. While it was expected that the frequency of *understand* category decrease in the MA curriculum in favor of higher-order cognitive skills, that was not the case. This goes along with Alipoor, Seifnaraghi, Naderi, and Shariatmadari's (2013) study that

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Iranian curricula need a revision to incorporate elements of critical and creative thinking. Master degree must reflect more levels of CT and should not be limited mostly to LOTS (Brown & Brown, 2010). Ahmad, Anwar, Ullahkhan, Idris, and Al Ameen (2014) suggested that knowledge and comprehension should be more emphasized at the high school level, application and analysis should be more focused on at the undergraduate level, and synthesis and evaluation should receive more attention at the graduate level. However, this trend was not found in the Iranian undergraduate and graduate English Translation curricula.

Concerning the knowledge dimension, in both curricula, the most frequent category was *procedural* knowledge. This means that acquiring the knowledge of classifications, principles, theories, models and structures supersede other types of knowledge. The results agree with those of Forehand (2005) that acquiring fundamental knowledge in the form of conceptual type is the most emphasized one in schools. The result revealed that *metacognitive* knowledge was almost missing in both graduate and undergraduate curricula and the allocated percentage was by far less than that of *conceptual* and *procedural* knowledge. In Razmjoo and Kazempourfard's (2012) study, metacognitive categories were almost absent in the coded data. The situation was even worse in the graduate compared to the undergraduate curriculum in which it was totally absent. As Renaud and Murray (2008) have stated, a curriculum that does not accommodate metacognitive knowledge prevents learners from understanding the relations between the goals and thinking strategies. Regarding the curriculum goals, Agwu, Ogbu and Okpara (2007) argued that educational goals should concentrate more on *procedural* and *metacognitive* knowledge dimensions.

Based on BRT, B2 (*understand*/conceptual) category was the most frequent one at the undergraduate level (see Appendix A). It seems that the educational system is mostly concerned with the transmission of knowledge of concepts rather than self-awareness. For example, in the courses such as Grammar and Writing, Linguistics, The Principles and Methods of Translation, The Theoretical Principles and Basics of Translation, Introduction to Literature, Introduction to Literature, Persian Language Structures, and Language Teaching Methodology, understanding different theories, structures, constructs, and concepts through interpreting, exemplifying, classifying, summarizing, inferring, comparing, and explaining is inevitable. The predominance of this category can be justified by Bloom's (1956) focus on the importance of knowledge. This finding is in line with what Stephen (2008) stated. In his view, the varied background of the students requires a review of the basic concepts in order to have a common understanding. However, the administrators' challenge is to design a curriculum that can progress from basic concepts to advanced applications within an educational program.

The second most frequent code, i.e., C2 (*understand*/*procedural*) indicated that acquiring the knowledge of criteria for determining when to use appropriate procedures supersede other objectives. Although *procedural* knowledge merits credit as the second frequent skill, it is not satisfactory when the related cognitive dimension is *understand* rather than *apply* or *create*. This means that the goals and objectives in the curricula were merely limited to acquiring *procedural* knowledge rather than being concerned about its real application. The case in point is that students do not learn how to put into practice what they have leaned. The optimal state is enabling students to move towards analyzing and evaluating *procedural* and *metacognitive* knowledge. Metacognitive-related categories were mostly missing in the BA curriculum. The paucity can be justified since the emphasis had shift toward both conceptual and procedural. These findings support what Alipoor et al., (2013) stated that the maintenance and the transfer of knowledge play a very prominent role and the curriculum goals, teaching and learning methods, and assessment are designed based on the same scale.

At the graduate level, B2 (*understand*/*conceptual*) was the most frequent code reported in the objectives (See Appendix B). The dominance of *understand*/*conceptual* category as the most frequent one in this program proved that, as in the undergraduate level, the knowledge of categories, theories, principles, models, and generalizations in the form of *conceptual* knowledge was the core concern of curriculum designers. For example, representing, explaining, interpreting, summarizing, comparing, contrasting and classifying different theories and principles are shared in the objectives

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of the curriculums of the most courses such as *Issues in Linguistics*, *Methods of Teaching a Foreign Language*, *Contrastive Linguistics* and *Error Analysis*, *Methods of Research*, *Testing Foreign Language* and *Psycholinguistics*.

The second most frequent code in graduate curriculum was C5 (*evaluate*/*procedural*) which is a likely promising shift from conceptual type of knowledge to that of procedural one. Compared to undergraduate state, the condition had been slightly improved at the graduate level since the second and the third frequent type of cognitive categories were evaluate. Since the nature of many courses in English translation at this level, expected students to evaluate the other translations of evaluate their own translation in the class and discuss the process they had gone through to translate a text. Moreover, most of the proposed courses stepped forward to evaluating the already covered theories in translation to cultivate practical use of those theories and principles in practical usage. The results revealed even the forth category according to the order of frequency, was *apply*/procedural connoting the fact that students were asked to at least apply the already studied processes in the theoretical courses (see Appendix B). The supplementary practical projects were assigned more in this level. That is why *create/procedural* category had gain the fourth more frequent category in this field and level.

It is interesting to note that at the graduate level, there were more missing categories, yet this lack of attention to some skills was found partially to be in favor of HOTS. The cells related to *remember* were totally absent. This might be due to the fact that the nature of translation is practical and expect students to apply, analyze, evaluate, translation or to create that of their own. That is why the major categories shifted toward evaluation or understanding, applying the processes or creating the procedures. It is worth mentioning that a substantial portion of curriculum was not devoted only to receiving knowledge but to evaluate the processes required. Although it cannot be ignored that there were a degree of attention to understand or evaluate conceptual knowledge, it consciously or unconsciously, reflected the main concern of stakeholders to keep a satisfactory store of knowledge and to transfer it to next generation.

The last finding worth discussing is almost total absence of D1 (*remember/metacognitive*), D2 (*understand/metacognitive*), D3 (*apply/metacognitive*), D5 (*evaluate/metacognitive*), and D6 (*create/metacognitive*) codes in graduate curricula. What is common among these codes is the element of *metacognitive* knowledge to allow students to reflect on their own learning. Metacognitive knowledge, as awareness of one's own cognition, can be an influential factor when the learner undertakes a learning task. Identifying the required strategies, using the most appropriate techniques that match one's capabilities, and reflecting on one's own learning process are all the key factors that can enhance the fulfillment of learning objectives (Brown, 1987). Along with learner autonomy, the provision of metacognitive knowledge can help the learner move towards independence and self-reliance. As Razmjoo and Kazempourfard (2012) have stated, making students more conscious of and responsible for their own knowledge and thought should be highly emphasized.

7. Conclusions

In sum, the frequencies of the lower-order domain were found to be more significant in both undergraduate and graduate Translation curricula. This is indicative of the fact that the academic curricula were not successful in developing higher-order CT skills in students. Based on the findings, the frustrating conclusion is the failure of the graduate curriculum to develop higher-order skills and to cultivate the required potentiality and the autonomy of the students.

As far as the cognitive dimension is concerned, it is concluded that *understand* category receives the focal attention in both curricula. The frequency of *understand* category was not lower in the graduate curriculum in favor of more complex skills such as *analyze* and *create*. However, it should be noted that the frequency of occurrence of *evaluate* increased in the graduate curriculum. Interestingly enough, the highest level of cognitive domain, i.e., *create* was found to be more frequent at the undergraduate level. This might be due to a lack of systematic attention to lower-order and higher-order thinking skills across undergraduate and graduate levels. As far as the

knowledge dimension is concerned, the most frequent type of knowledge found in both curricula was *conceptual* one. This is indicative of the fact that educational system is mostly concerned with transferring knowledge in the form of theories, principles, structures, classification, and categories.

The findings of this study revealed the prevalence of *understand/conceptual* knowledge in both curricula. It means that constructing meaning and acquiring theoretical knowledge through the cognitive processes such as explanation, interpretation, and illustration received the focal attention. Besides, the metacognitive-related categories were mostly missing in both curricula. The implications of the findings call for further attention to higher-order thinking skills. To this end, all stakeholders including policy-makers, teachers, learners, and other related parties need to include CT in the pedagogical process. Curriculum is the basis which drives the process of instruction. If the existing curricula are tailored in the light of CT and encompasses objectives to develop higher order thinking skills, this can pave the way for practical cultivation of the skills in language classes. In addition, teachers need to design the class activities in a way that all thinking skills receive due attention. Finally, there is a need for a change in the students' conservative perceptions toward what is expected of them to carry out in EFL classes. In fact, having a CT-inspired instruction is a desired objective that requires the interaction and collaboration on the part of all stakeholders.

Among the limitations of the study, the present study was particularly concerned with the content analysis of the curricula. Other researches, therefore, can make use of survey studies or interview with the EFL instructors and learners to see how the stated objectives are reflected in the language classes. The study was delimited to English translation curricula while the other researches can focus on the curricula of the other fields. In addition, through the Delphi method which is used as a means of implementing multi-stake-holder approaches, the contributions from a panel of experts in the realms of education, needs analysis, curriculum development, etc. can be collected to validate the existing policies and offer remedies to improve the processes of macro-level policy-making.

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APPENDIX A: Cognitive Dimension * Knowledge Dimension Cross-tabulation (Undergraduate)

| | | Knowledge Dimension | | | | Total |
		Factual	Conceptual	Procedural	Metacognitive	
Remember	Count	8	2	0	0	10
	% within Cognitive Dimension	80.0%	20.0%	0.0%	0.0%	100.0%
	% within Knowledge Dimension	42.1%	1.2%	0.0%	0.0%	3.4%
	% of Total	2.7%	0.7%	0.0%	0.0%	3.4%
Understand	Count	9	96	36	0	141
	% within Cognitive Dimension	6.4%	68.1%	25.5%	0.0%	100.0%
	% within Knowledge Dimension	47.4%	59.6%	32.7%	0.0%	48.3%
	% of Total	3.1%	32.9%	12.3%	0.0%	48.3%
Apply	Count	1	6	18	0	25
	% within Cognitive Dimension	4.0%	24.0%	72.0%	0.0%	100.0%
	% within Knowledge Dimension	5.3%	3.7%	16.4%	0.0%	8.6%
	% of Total	0.3%	2.1%	6.2%	0.0%	8.6%
Analyze	Count	1	29	11	0	41
	% within Cognitive Dimension	2.4%	70.7%	26.8%	0.0%	100.0%
	% within Knowledge Dimension	5.3%	18.0%	10.0%	0.0%	14.0%
	% of Total	0.3%	9.9%	3.8%	0.0%	14.0%
Evaluate	Count	0	18	20	1	39
	% within Cognitive Dimension	0.0%	46.2%	51.3%	2.6%	100.0%
	% within Knowledge Dimension	0.0%	11.2%	18.2%	50.0%	13.4%
	% of Total	0.0%	6.2%	6.8%	0.3%	13.4%
Create	Count	0	10	25	1	36
	% within Cognitive Dimension	0.0%	27.8%	69.4%	2.8%	100.0%
	% within Knowledge Dimension	0.0%	6.2%	22.7%	50.0%	12.3%
	% of Total	0.0%	3.4%	8.6%	0.3%	12.3%
Total	Count	19	161	110	2	292
	% within Cognitive Dimension	6.5%	55.1%	37.7%	0.7%	100.0%
	% within Knowledge Dimension	100.0%	100.0%	100.0%	100.0%	100.0%
	% of Total	6.5%	55.1%	37.7%	0.7%	100.0%

(Row header "Cognitive Dimension" spans the left of all data rows.)

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APPENDIX B: Cognitive Dimension * Knowledge Dimension Cross-tabulation (Graduate)

			Knowledge Dimension				Total
			Factual	Conceptual	Procedural	Metacognitive	
	Understand	Count	1	28	13	0	42
		Expected Count	.8	18.5	22.2	.4	42.0
		% within Cognitive	2.4%	66.7%	31.0%	0.0%	100.0%
		% within Knowledge	50.0%	62.2%	24.1%	0.0%	41.2%
		% of Total	1.0%	27.5%	12.7%	0.0%	41.2%
	Apply	Count	0	0	8	0	8
		Expected Count	.2	3.5	4.2	.1	8.0
		% within Cognitive	0.0%	0.0%	100.0%	0.0%	100.0%
		% within Knowledge	0.0%	0.0%	14.8%	0.0%	7.8%
		% of Total	0.0%	0.0%	7.8%	0.0%	7.8%
	Analyze	Count	0	4	2	1	7
		Expected Count	.1	3.1	3.7	.1	7.0
		% within Cognitive	0.0%	57.1%	28.6%	14.3%	100.0%
		% within Knowledge	0.0%	8.9%	3.7%	100.0%	6.9%
		% of Total	0.0%	3.9%	2.0%	1.0%	6.9%
Cognitive Dimension	Evaluate	Count	1	12	25	0	38
		Expected Count	.7	16.8	20.1	.4	38.0
		% within Cognitive	2.6%	31.6%	65.8%	0.0%	100.0%
		% within Knowledge	50.0%	26.7%	46.3%	0.0%	37.3%
		% of Total	1.0%	11.8%	24.5%	0.0%	37.3%
	Create	Count	0	1	6	0	7
		Expected Count	.1	3.1	3.7	.1	7.0
		% within Cognitive	0.0%	14.3%	85.7%	0.0%	100.0%
		% within Knowledge	0.0%	2.2%	11.1%	0.0%	6.9%
		% of Total	0.0%	1.0%	5.9%	0.0%	6.9%
	Total	Count	2	45	54	1	102
		Expected Count	2.0	45.0	54.0	1.0	102.0
		% within Cognitive	2.0%	44.1%	52.9%	1.0%	100.0%
		% within Knowledge	100.0%	100.0%	100.0%	100.0%	100.0%
		% of Total	2.0%	44.1%	52.9%	1.0%	100.0%