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Official Postgraduate Curriculums of TPSOL in Iran: Evaluation of Educational Objectives and Vertical Alignment

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Extended Abstract:

In general, any educational system consists of three essential components of intended, implemented, and attained curriculums, and for any multi-componential system to yield the intended outcomes, there ought to be harmony among the components. Among these three components, intended curriculums or policy documents play a pivotal role in any educational system, as they set the aims of the programs and lead the way; therefore, it is essential that their efficacy be evaluated systematically. Although intended curriculums are of paramount importance in Iran's centralized higher educational context, few studies have evaluated higher education curriculum standards. The present study aimed at evaluating the official curriculum standards of Teaching Persian to Speakers of Other Languages (TPSOL) in Iranian higher education. Using Bloom's revised taxonomy (Anderson & Krathwohl, 2001) as the theoretical framework of the study, it first examined the educational objectives represented in the policy documents of the courses at the two levels of M.A. and Ph.D., followed by examining the vertical statistical alignment between the educational objectives targeted in these two sets of course standards. To do so, the latest policy documents of M.A. and Ph.D. curriculums published and mandated by Iran' Ministry of Science Research and Technology in 2015 were sought. The documents generally present the courses to be offered in the programs, highlight the most important objectives and discussion topics of each course, clarify the skills and abilities that students may attain after passing each course, recommend some most classical readings and resources for each course, and suggest

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assessment methods and criteria. The checklist developed by Rezvani and Zamani (2012) was employed to identify and tally the knowledge types and cognitive levels tapped by the curriculum standards of TPSOL at Master's and Ph.D. levels. The documents' contents were thoroughly content-analyzed and the general perspectives, objectives, plans, and skills to be acquired were regarded as units of analysis. All action verbs and nouns were identified, interpreted, and codified following the definitions provided by the categories and subcategories in the checklist. The action verbs addressing each of the cognitive categories were annotated in the appropriate rows of the checklist, and the nouns which represented the intended knowledge types were categorized and located in relevant columns. The frequencies, percentages, and proportion of the distribution of the cognitive levels and knowledge types identified in the documents were calculated through Microsoft Excel (2016). Likewise, the totals for categories in each dimension were calculated, which helped the researchers to assess and, accordingly, explore any notable patterns in the distribution of the cognitive levels and knowledge types in the analyzed documents. By dividing the frequency of each cell to the total number of activities, the basic data were then converted to cell-by-cell proportions. In order to detect the degree of vertical alignment between the educational objectives addressed by the curriculum standards of TPSOL in master's and Ph.D. levels, Porter et al.'s (2007) alignment index (AI) was used. The results of the study indicated that educational objectives of lower-order cognitive processes (i.e., "remember", "understand", and "apply") were targeted more than those of the higher-order processes ("analyze", "evaluate", and "create") at both educational levels. Among the lower-order skills at the M.A. level, as the results suggested, "remember" was excessively emphasized at the cost of neglecting other skills, with the exception of "analyze". However, although the lowest-order cognitive process (i.e., remember) was paid too much attention at the Ph.D. level, this was not at the expense of total neglect of higher-order skills, especially "analyze" and "create". Yet, such an inclination towards "remember" is not very promising in a Ph.D. program. Compared to the educational objectives at the M.A. level, higher-order cognitive skills were, as expected, integrated more at the Ph.D. level, though they both attended to the lowest-order skill more noticeably. As regards the knowledge types, one can see that lower-order knowledge types were dominant at both levels, suggesting that such a tendency is common in TPSOL at the postgraduate level. Unlike the M.A. program, however, "metacognitive knowledge" was paid little attention at the Ph.D. level. Finally, with respect to the vertical alignment between the two consecutive curriculums, the PAI of 0.69 indicated that they were significantly aligned with each other in terms of educational objectives. The descriptive patterns observed made the PAI come as no surprise, as both programs paid similar attention to lower-order cognitive

skills and knowledge types, and largely ignored the higher ones. Although this study seems to be the first evaluative inquiry to assess these two intended postgraduate curriculums in Iran, its findings are in keeping with those of other studies evaluating textbooks (e.g., Rezvani & Haghshenas, 2015; Riazi & Mosalanejad, 2010) and high-stakes tests (Zamani & Rezvani, 2014), indicating the heavy reliance of Iran's education system on lower-order cognitive skills and knowledge types. The results of the study may have significant implications for those involved in higher education. Policy-makers might benefit from the results in developing new higher education curriculums and revising the current programs to redirect the attention to higher-order knowledge types and thinking skills particularly in postgraduate curriculums. Educators at the forefront of the higher education are recommended to introduce variety into course syllabuses in concert with but demanding more higher-order knowledge types and cognitive skills. This will, in turn, pay off for the current postgraduate students and prospective instructors and educators.

Keywords: Cognitive Processes, Educational Objectives, Evaluation, Intended Curriculums, Knowledge Types, Vertical Alignment

1. Introduction

Education is deemed to serve a double purpose (Kemmis & Edwards-Groves, 2018). On the one hand, it serves the purpose of developing knowledgeable individuals and on the other, attempts to develop societies where the good for humankind is the dominant value. That is why the right to education is believed to be the most basic right of any human being and one of the major factors contributing to citizenship (Amiri & Rezvani, in press). The significance of establishing efficient education translated into various curriculums calls for ongoing evaluation.

In general, any educational system consists of three essential components of objectives, instruction, and assessment (Anderson & Krathwohl, 2001) which might also be termed as intended, implemented, and attained or achieved curriculums (Aikenhead, 2006; Thijs & van den Akker, 2009; van den Akker, 2003). However, in some more elaborate conceptualizations, the components might be further divided into subcomponents (see for example Lattuca & Stark 2011; Scott, 2016).

There are arguably different stakeholders, decision-makers, and actors for education in general and each component in particular (van den Akker, 2003; 2010). Lattuca and Stark (2011) pointed out that an academic plan should involve decisions about the eight components of purposes, content, sequence, learners, instructional processes, instructional resources, evaluation, and adjustment. Any decisions about and measures for these key constituents, in effect, are concerned with or construed as intended, enacted, and assessed curriculums.

Essentially, for any multi-componential system, there ought to be harmony among the components to yield the intended outcomes. Educational systems involving multiple curriculums as well are expected to have alignment in theory and practice (Ornstein & Hunkins, 2018). Anderson and Krathwohl (2001) defined alignment as “the degree of correspondence among the objectives, instruction, and assessment” (p. 10). Alignment is generally examined at two levels of horizontal and vertical. In horizontal alignment, the agreement between content standards and assessment for a specific subject area at a specific grade level is usually investigated (Porter, 2002; Webb, 1997), while vertical alignment takes into account other parts of the education system including curriculums, textbook content, the opinions of stakeholders (such as parents), classroom instruction, and student achievement outcomes as well as content standards and assessment from different or the same education levels (Case & Zucker, 2005).

Intended curriculums are usually planned and stipulated by educational organizations or officially by education ministries. In Iran, the Ministry of Science, Research and Technology (MSRT) has the responsibility to develop, supervise, and revise the intended curriculums for various fields of study at different levels of associate, bachelor's, master's, and doctorate degrees. Teaching foreign languages such as English, French, German, and Russian to speakers of other languages have long been among the majors whose intended curriculums were developed by the ministry and were submitted to universities as curriculum standards or documents. As for the promotion of the status of Persian as Iranians' most distinguished national identity characteristic in international communities, the Iranian MSRT decided to develop the intended curriculum for teaching Persian to speakers of other languages (TPSOL) at M.A. level in 1994, which was later revised in 2015. The ministry also developed the curriculum for the doctorate level in 2015.

Although designing, developing, and implementing curriculums are supposed to be well-thought-out entailing teams of actors and time investment, by no means are they error-free and should be subject to ongoing evaluation and accordingly amendments. This evaluation can aim at different intended, enacted, and assessed curriculums. Evaluation of an intended curriculum is carried out to gather information to make educational, curricular, and instructional decisions which will ultimately enhance students' learning of the curriculum being taught (Ornstein & Hunkins, 2018). The basic argument in favor of evaluating intended curriculum lies in its significance in informing and guiding the other components and their actors. It is the policy document or, as also commonly termed, curriculum standards articulating what were originally thought of and aspired for by policy-makers and experts. It might be prone to misinterpretation because of the wording, sequence, and emphasis of the statements and the objectives. It can also lead to gaps among the components because of the incongruence or mal-alignment of the course objectives of the same level or sequential levels which are supposed to be developmentally targeting specific goals (Amiri & Rezvani, in press).

Despite the critical role intended curriculums play in education, curriculum researchers and evaluators often focus on enacted and assessed curriculums. In Iran's centralized higher education context with augmented significance of the intended curriculums, there has been scant research on the evaluation of higher education curriculum standards. TPSOL as a recent field of study in Iran's higher education has received little attention of researchers. It is hoped that the results of this study informs and benefits TPSOL educators and policy makers.

The present study aimed at evaluating the official curriculum standards of TPSOL in Iranian higher education. Guided by Bloom's revised taxonomy (Anderson & Krathwohl, 2001), as a theoretical framework, it looked into the educational objectives represented in the policy documents of the courses at the two levels of M.A. and Ph.D. It further examined the vertical statistical alignment between the educational objectives targeted in the two sets of course standards. This study specifically seeks to address the following research questions:

1. What is the distribution pattern of the educational objectives intended in Iran’s official M.A. curriculum standards of TPSOL?

2. What is the distribution pattern of the educational objectives intended in Iran’s official Ph.D. curriculum standards of TPSOL?

3. Is there any significant vertical alignment between the curriculum standards of the two levels of TPSOL higher education in terms of the intended objectives?

2. Literature Review

Before discussing various frameworks used to evaluate curriculums, it is worth taking a brief look at the two basic approaches to curriculum evaluation.

2.1. Evaluation models

Although similar steps can be employed in order to evaluate any curriculum, different approaches to evaluation considerably influence evaluators’ assumptions, as these assumptions are embedded in various philosophical, educational, social, and world views. Evaluation models are generally divided into two categories of scientific, modernist and humanistic, postmodernist frameworks.

2.1.1. Scientific Models, Modernist Models

As it was discussed above, the way people generate questions and process data is affected by their philosophical and psychological views; that is whether they consider themselves a modernist or a postmodernist. Those who are considered modernist take a behavioristic, prescriptive approach to evaluation, believe in cause-and-effect precision in the evaluation of curriculums, attribute any behavior or content learned to the curriculum and instruction, favor clearly stated objectives, and prefer standardized tests to measure what students have learned (Case & Zucker, 2005).

2.1.2. Humanistic Models, Postmodernist Models

Unlike the advocates of scientific, modernist models, the educators who take a humanistic, postmodernist view to evaluation pay more attention to students’ self-concept improvement rather than their specific achievements in the form of objective tests. In fact, they believe that the search for truth and certainty is futile, and precise results of students’ learnings cannot be yielded after experiencing a specific curriculum. That is why they often rely on different forms of interpretive inquiry, and do not usually employ quantitative methodologies (Slattery, 2013).

2.2. Theoretical Frameworks Guiding Evaluation of Textbooks, Tests, and Curriculums

Literature on curriculum studies shows that numerous models (e.g. Anderson & Krathwohl, 2001; Bloom, 1956; Porter & Smithson, 2001; Webb, 1997) have been developed to evaluate either the whole curriculum or any of its components such as textbooks and tests. Each model views evaluation from a different perspective and has been applied to evaluate a lot of education components worldwide.

Internationally, there has been extensive research to evaluate curriculums based on various theoretical frameworks. In 1997, Norman L. Webb developed a model for the alignment of expectations and assessments in mathematics and science education. In his model, 12 criteria were established and were grouped into five general categories of content focus, articulation across grades and ages, equity and fairness, pedagogical implications, and system applicability. He then analyzed the alignment of assessments and standards in mathematics and science for four states (1999) and the alignment between mathematics standards and assessments was investigated for three other states (2002) of America, and suggested some implications for the alignment to be improved.

Using empirical data obtained from standards and assessment of a chemistry course in upper secondary schools in Sweden, Näsström and Henriksson (2008) compared Bloom’s revised taxonomy (Anderson & Krathwohl, 2001) and Porter’s model (2002) and concluded that although both models were the most appropriate ones to analyze the alignment of curriculums, Bloom’s revised taxonomy was the best model, saying that “the inter-rater reliability for classification of standards was significantly better for Bloom’s revised taxonomy than for Porter’s taxonomy” (p. 668).

In another study, Wei and Ou (2019) analyzed and explored the similarities and differences of junior high school science curriculum standards in Mainland China, Taiwan, Hong Kong, and Macao based on Bloom’s revised taxonomy (Anderson & Krathwohl, 2001) and found out that in all the regions, conceptual knowledge comprised the majority of the curriculums, while metacognitive knowledge represented a small proportion. Another similarity among the curriculums for these regions was that the lower levels of cognitive process were paid much more attention compared to the higher levels. On the other hand, the results showed that unlike mainland China, Taiwan, and Macao, which emphasized the memory of factual and conceptual knowledge, Hong

Kong highlighted level of understanding. Using the same theoretical framework to evaluate two science units in each of the Grades of 6 and 7 in Canadian schools, FitzPatrick and Schulz (2015) sought to determine cognitive levels of the outcomes and their cognitive alignment with the corresponding assessments. As the results showed, fewer higher than lower order outcomes and assessments were detected in both grades and the cognitive alignment between outcomes and assessments ranged from 42% to 71%.

In Iran, there have been a few alignment studies on different components of the education system. In a recent study conducted by Amiri and Rezvani (in press), the newly-developed English series for Iranian junior high schools (Prospect I, II, III) was analyzed and compared to its educational objectives. The results of the study showed that although the lessons were tuned adequately, they mainly represented lower-order knowledge and cognitive skills at the expense of ignoring higher-order ones. The statistically positive and significant PAIs (Porter's alignment analysis/index, 2002) among the books, however, referred to horizontal and vertical alignment of the series.

In another study, Rezvani and Zamani (2012) investigated the alignment of Iran's English translation and TEFL M.A. entrance exams, their official curriculum standards, as well as their official textbooks based on Anderson and Krathwohl's (2001) taxonomy of educational objectives. The findings of the study revealed that the intended and assessed curriculums were highly aligned, while the alignment between the intended and written curriculums was just narrowly significant.

In order to examine the alignment between English for Specific Purposes (ESP) textbooks published by SAMT publication (Iran's publication organization for university textbooks) and the respective official standards, Rezvani and Haghshenas (2015) evaluated 21 randomly-selected ESP textbooks as well as their curriculum standards based on Anderson and Krathwhol's (2001) cognitive taxonomy of educational objectives. The results of the study showed that both standards and textbooks emphasized lower-order thinking skills, and there was no significant alignment between the textbooks and the curriculum standards.

Although there have been a lot of studies evaluating language-related programs in Iran together with a few alignment studies, almost all of them have been related to English language majors such as English translation and TEFL. So far, however, there has been little, if any, attempts evaluating the curriculum of teaching Persian to speakers of other languages (TPSOL) as one of the prominent sub-disciplines of applied linguistics in Iran. In response to such a paucity of research on this major, the present research study was motivated to examine the educational objectives represented in the policy documents of the courses at the two levels of M.A. and Ph.D. It further examined the vertical alignment between the educational objectives targeted in the two sets of course standards.

2.3. Theoretical Framework of the Present Study

As was mentioned above, numerous theoretical models have been established to evaluate the efficacy of educational objectives. However, Bloom’s revised taxonomy (Anderson & Krathwohl, 2001), which has attracted worldwide attention as an appropriate model, was employed as the theoretical framework of the present study. Bloom’s original taxonomy was first proposed in 1956 and underwent a major revision by Anderson and Krathwohl in 2001 to involve both knowledge types and cognitive processes. The knowledge dimension consists of four general types of knowledge from the most concrete (factual knowledge) to the most abstract one (metacognitive knowledge) with conceptual and procedural knowledge in between. The cognitive dimension of the taxonomy shows the cognitive complexity of educational objectives divided into six levels from lower-level skills of remembering and understanding toward applying and analyzing to the most complex levels of evaluating and creating.

2. Method

The current study sought to explore and provide a descriptive account of the distribution patterns of the knowledge types and cognitive processes intended by the official Iranian M.A. and Ph.D. curriculum standards of TPSOL. Further, an attempt was made to examine whether the intentions represented as educational objectives in both curriculums were statistically aligned.

3.1. Postgraduate TPSOL intended curriculum documents

In order to study the intended curriculums of TPSOL, the latest standards or policy documents about M.A. and Ph.D. curriculums which were published and mandated by the Iranian MSRT in 2015 were sought. The documents outline the general features and objectives of TPSOL, the significance and duration of its programs, the occupational opportunities that the graduates may have, and the syllabi designed for each level. The syllabi represent the courses to be offered in the programs, highlight the most important objectives and discussion topics of each course, clarify the skills and abilities that students may attain after passing each course, recommend some most classical readings and resources for each course, and suggest assessment methods and criteria. Table 1 details the types, number, and the respective credits of the courses incorporated in the TPSOL curriculum standards at Master’s and Ph.D. levels:

Table 1
Types of Courses Offered in TPSOL at Master’s and Ph.D. Levels

Type	Courses (n[1])	Master’ Level	Master’s Level (C[2])	Ph.D. level (n)	Ph.D. Level (C)
Core courses		6	12	-	-
Elective courses		6	12	3	6
Prerequisite supplementary courses		5	10	3	6
Compulsory courses		6	12	6	12
Total		23	46	12	24

Note [1]: The number of the courses
Note [2]: The number of course credits

3.2. Instrument

The checklist developed by Rezvani and Zamani (2012) was employed to identify and tally the knowledge types and cognitive levels tapped by the curriculum standards of TPSOL at Master’s and Ph.D. levels. The checklist incorporates a twenty-four cell-grid which addresses both cognitive and knowledge dimensions of Bloom's revised taxonomy of educational objectives. More specifically, the six rows correspond to the main categories of the cognitive dimension extended into subcategories and the four columns represent the knowledge types explained by subdivisions.

3.3. Data and Analytical Procedures

In order to accumulate the required data, the latest standards or policy documents about M.A. and Ph.D. curriculums were downloaded from the official website of the Iranian MSRT. The documents’ contents were scrutinized thoroughly and the general perspectives, objectives, plans, and skills to be acquired were regarded as units of analysis. All action verbs and nouns were identified, interpreted, and codified following the definitions provided by the categories and subcategories in the checklist (see the categories and subcategories with definitions and examples in Table 2 and Table 3).

Table 2

The major categories and subcategories of the knowledge dimension

Major categories	Subcategories	Examples
A. Factual knowledge (the basic elements students must know to be acquainted with a discipline or solve problems in it)	A_A. Knowledge of terminology A_B. Knowledge of specific details and elements	Definition of *dialect* Basic concepts of phonology
B. Conceptual knowledge (the interrelationships among the basic elements within a larger structure that enable them to function together	B_A. Knowledge of classifications and categories B_B. Knowledge of principles and generalizations B_C. Knowledge of theories, models, and structures	Different types of Persian suffixes Features of formal and informal language forms
C. Procedural knowledge (how to do something, methods of inquiry, and criteria for using skills, algorithms, techniques, and methods	C_A. Knowledge of subject-specific skills and algorithms C_B. Knowledge of subject-specific techniques and methods C_C. Knowledge of criteria for determining when to use appropriate procedures	Methods of teaching pronunciation to non-native learners The procedures of developing reliable and valid tests
D. Meta-cognitive Knowledge (knowledge of cognition in general as well as awareness and knowledge of one's own cognition	D_A. Strategic knowledge D_B. Knowledge about cognitive tasks, including appropriate contextual and conditional knowledge D_C. Self-knowledge	Knowledge of outlining as a means of capturing the structure of a unit of subject matter in a textbook Knowledge of the cognitive demands of different tasks Awareness of one's own knowledge level

Table 3

The cognitive processing dimension of Bloom's revised taxonomy

Dimension	Definition	Examples of the cognitive processes involved
Remember	The student can recall or remember the information	Define, know, duplicate, list, memorize, recall, repeat, reproduce, state

Understand	The student can explain ideas or concepts.	Classify, describe, discuss, explain, identify, locate, recognize, report, select, translate, paraphrase
Apply	The student can use the information in a new way	Choose, demonstrate, dramatize, employ, illustrate, interpret, operate, schedule, sketch, solve, use, write
Apply	The student can use the information in a new way	Choose, demonstrate, dramatize, employ, illustrate, interpret, operate, schedule, sketch, solve, use, write
Analyze	The student can distinguish between the different parts	Appraise, compare, contrast, criticize, differentiate discriminate, distinguish, examine, experiment, question
Evaluate	The student can justify a stand or decision.	Appraise, argue, defend, judge, select, support, value, evaluate
Create	The student can create new product or point of view	Assemble, construct, create, design, develop, formulate, write

The action verbs addressing each of the cognitive categories were annotated in the appropriate rows of the checklists, and the nouns which represented the intended knowledge types were categorized and located in relevant columns. For instance, the part "to know the morphological structures of Persian language" relates to the *conceptual knowledge* dimension and involves the verb "know" representing the *remember* cognitive process. Therefore, this was coded as *conceptual knowledge at the remember level*. When some key verbs or nouns pointed to multiple aspects of each domain, they were identified and placed, hence, in multiple relevant cells. As a case in point we can refer to the objective reading "to know the basic principles and theoretical approaches of syllabus design and to recognize how curriculums can be developed based on different teaching methods" which involves one conceptual and one procedural knowledge dimension along with two types of verbs, "know" and "recognize" representing *remember* and *understand* cognitive levels, respectively.

To ensure the coding reliability, two of the researchers, first coded about 25% of the data which were sampled randomly. The agreement found between the two was about 81%. The researchers, subsequently, resolved the disagreements through discussion and eventually reached a consensus. They attempted to code another random sample of the data, and their agreement level improved to 97% this time.

The frequencies, percentages, and proportion of the distribution of the cognitive levels and knowledge types identified in the documents were calculated through Microsoft Excel (2016). Likewise, the totals for categories in each dimension were calculated, which helped the researchers to assess and, accordingly, explore any significant patterns in the distribution of the cognitive levels and knowledge types in the analyzed documents. By dividing the frequency of each cell to the total number of activities, the basic data were then converted to cell-by-cell proportion. To detect the degree of vertical alignment between the educational objectives addressed by the curriculum standards of TPSOL in master's and Ph.D. levels, Porter et al.'s (2007) alignment index (AI) (see the formula below) was used.

Figure 1

Porter et al. (2007) Alignment Index Formula

$$AI = 1 - \frac{(\sum_{i=1}^{n}(Xi - Yi)}{2}$$

In the formula, X denotes cell proportion in one matrix, and Y stands for cell proportion in another. The values of the AI "range from 0 to 1.0 indicating perfect alignment" (Porter, 2002, p. 5) and need to exceed 0.5 to be indicative of a significant alignment (Porter et al., 2007).

4. Results and Discussion

In the following sections, the results of the data analysis are presented and discussed to answer the three aforementioned research questions guiding the study in turn. First, an account is given about the distribution of the knowledge and skills types in the two curriculum standards of TPSOL. Then, quantitative findings are reported regarding the vertical alignment between the two levels.

4.1. Educational Objectives in the M.A. Curriculum Standards

Tables 4 and 5 show the percentages of cognitive skills and knowledge types represented in Iran's official M.A. curriculum standards of TPSOL, respectively. As it can be seen in Table 4, there are variations in the percentages of cognitive processes and types of knowledge in the curriculum. From among the cognitive processes, "remember" was heeded most with an average of 45%. It was followed by "analyze" which was represented in 24% of the cognitive processes of the intended curriculum. The next cognitive skill was "understand" represented in 12% of the cognitive processes. The other three cognitive skills which were largely ignored in the curriculum were "apply", "create", and "evaluate", with representation indexes of 7, 6, and 6, respectively.

Table 4

Cognitive Levels in the M.A. Curriculum Standards

The Cognitive Dimension	N	%*
Remember	66	45 %
Understand	18	12 %
Apply	10	7%
Analyze	35	24 %
Evaluate	8	6%
Create	9	6%
Total	146	100%

* Note: The percentages have been rounded up and down.

In terms of the distribution pattern of the knowledge types, although "factual", "conceptual", and "procedural" knowledge types were targeted to various extents, "metacognitive" knowledge was completely ignored in the intended curriculum. In fact, the most frequent knowledge type was "conceptual" knowledge (42%), followed by "factual" and "procedural" types with averages of 37% and 21, respectively. As it was mentioned above, "metacognitive" knowledge was paid no attention to, and, as the highest-order knowledge type, was noticeably absent in the standards of this level.

Table 5

Knowledge Types in the M A. Curriculum Standards

The Knowledge Dimension	N	%*
Factual Knowledge	54	37%
Conceptual Knowledge	61	42%
Procedural Knowledge	31	21%
Meta-cognitive	0	0%

* Note: The percentages have been rounded up and down.

4.2. Educational Objectives in the Ph.D. Curriculum Standards

Educational objectives in Iran's intended Ph.D. curriculum (illustrated in Table 6) showed that "remember" was represented in almost half of the cognitive processes (48%). The second most frequent cognitive process targeted in Iran's intended Ph.D. curriculum was "analyze" with an index of 25 %. After "create" which was represented in 11% of the cognitive skills demanded in the standards, came "apply", "evaluate", and "understand" cognitive skills evenly distributed with averages of 6 %, 6%, and 5%, respectively.

Table 6

Cognitive Levels in the Ph.D. Curriculum Standards

The Cognitive Dimension	N	%*
Remember	53	48%
Understand	5	5%
Apply	7	6%
Analyze	28	25%
Evaluate	6	5%
Create	12	11%
Total	111	100%

* Note: The percentages have been rounded up and down.

As illustrated in Table 7, there was a more balanced distribution of the knowledge types in the Ph.D. curriculum. The most frequent knowledge was "conceptual" which increased rather sharply from 42% to 60%. While "procedural" knowledge (17%) was represented to an acceptable extent, worthy of note is the dedication to "metacognitive" knowledge (12%) which is theoretically perceived as the highest-order thinking skill. Arguably, although "conceptual" knowledge enjoyed disproportionate regard, the other three knowledge types received fairly balanced recognition.

Table 7

Knowledge Types in the Ph.D. Curriculum Standards

The Knowledge Dimension	N	%*
Factual Knowledge	14	13%
Conceptual Knowledge	67	60%
Procedural Knowledge	17	15%
Meta-cognitive	13	12%

* Note: The percentages have been rounded up and down.

4.3. The Cell Values of Educational Objectives in the M.A. Curriculum Standards

The content matrix, where the cognitive levels are intersected by knowledge types, is analyzed to identify how intersections (pairings) are distributed across the cells of the two-dimensional taxonomy in terms of Bloom’s revised taxonomy of educational objectives. Table 8 shows the cell values of educational objectives in the two sets of TPSOL curriculum standards.

According to Table 8, “remember × factual” by far constituted the greatest proportion of the intersections with an average of 25%. This intersection was followed by “analyze × conceptual” (15%), “remember × conceptual” (11%), and “remember × procedural” (9%). Some other intersections such as “understand × factual” and “create × conceptual” (4%), “analyze × procedural” and “evaluate × conceptual” (3%), “understand × procedural”, “apply × conceptual”, and “apply × procedural” (3%), “apply × factual” and “create × procedural” (2%) had similar proportions. “Evaluate × procedural” and “create × factual” were the other two intersections with the averages of 2 % and 1%, respectively. Rather surprisingly and disappointingly, no intersection was found for “evaluate × factual”. Since “meta-cognitive” knowledge was not regarded at all in the intended M.A. TPSOL curriculum, there was no intersection of this highly valued knowledge type and any of the thinking processes.

Table 8

The Intersection of Cognitive Levels and Knowledge Types in The M.A. Curriculum Standards

Knowledge Types	1. Factual	2. Conceptual	3. Procedural	4. Meta-cognitive
Cognitive levels				
A. Remember	(25%)	(11%)	(9%)	-
B. Understand	(4%)	(5%)	(3%)	-
C. Apply	(1%)	(3%)	(3%)	-
D. Analyze	(6%)	(15%)	(3%)	-
E. Evaluate	-	(4%)	(2%)	-
F. Create	(1%)	(4 %)	(1%)	-

* Note: The percentages have been rounded up and down.

4.4. The Cell Values of Educational Objectives in Ph.D. Curriculum Standards

Similar to intersection distribution at the Ph.D. level, as shown in Table 9, “remember × conceptual” (26%) and “analyze × conceptual” (19%) were the most frequent ones. Followed by these two matrices were “remember × procedural” (12%), “remember × factual” (7%), and “create × meta-cognitive” (5%). Next were the intersections of “apply × conceptual”, “analyze × conceptual”, and “create × conceptual” all with the same index (4%). The other matrices were “analyze × factual” and “remember × metacognitive” which represented 4% and 3% of the intersections, respectively. The other intersections were either underemphasized (e.g., “understand × conceptual and procedural” and “analyze × metacognitive” (2%) and “understand × factual”, “apply × factual and metacognitive”, “analyze × procedural”, “evaluate × metacognitive”, and “create × procedural” (1%) or were completely ignored (“understand × metacognitive”, “apply × procedural”, “evaluate × factual”, “evaluate × procedural”, and “create × factual”.

Table 9

The Intersection of Cognitive Levels and Knowledge Types in the Ph.D. Curriculum Standards

Knowledge Types	1. Factual	2. Conceptual	3. Procedural	4. Meta-cognitive
Cognitive levels				
A. Remember	(7 %)	(26 %)	(12%)	(3%)
B. Understand	(1%)	(2%)	(2%)	-
C. Apply	(1%)	(4%)	-	(1%)
D. Analyze	(4%)	(19%)	(1%)	(2%)
E. Evaluate	-	(4%)	-	(1%)
F. Create	-	(4%)	(1%)	(5 %)

* Note: The percentages have been rounded up and down.

4.5. PAI between M.A. and Ph.D. curriculum standards

The PAI was calculated in response to the third research question. Since there were comparatively similar distribution patterns of knowledge types, cognitive processes, and their intersections in both curriculum standards, it was expected that the PAI would be statistically significant. Supporting the descriptive findings and the prediction, the AI turned out to be 0.7 (AI > 0.50) as indicative of the statistically significant level of vertical alignment between the two programs (see Table 10).

Table 10

AI Between M.A. and Ph.D. Curriculum Standards

Educational Levels	Alignment Index (AI)
M.A. & Ph.D.	0.7*

*Note: Alignment is significant > 0.50.

4.6. Discussion

In the present study, the distribution pattern of the educational objectives intended in Iran's official curriculum standards of TPSOL was analyzed and compared at two levels of M.A. and Ph.D., yielding findings of note. The results of the study indicated that educational objectives of lower-order cognitive processes (i.e., "remember", "understand", and "apply") exceeded those of the higher-order processes ("analyze", "evaluate", and "create") at both educational levels. This corroborates the findings by FitzPatrick and Schulz (2015), Lee et al. (2015), and Wei and Ou (2019), who reported that curriculums mainly tap lower-order levels of cognitive processes. The stronger tendency to apply lower-order cognitive processes might be justified on the ground that since human learning is basically incremental (Grabe & Stoller, 2019), the mastery of the lower-order skills such as "remember" is a prerequisite to take in and master more critical and higher levels of thinking. However, it is highly probable that such a heavy reliance on a low-level cognitive skill in higher education impede critical thinking skills (Anderson & Krathwohl, 2001).

Among the lower-order skills at the M.A. level, as the results indicated, "remember" was excessively emphasized at the cost of neglecting other skills, with the exception of "analyze". The representation of "analyze" and the attention it received at the M.A. level can be considered an asset in the program, while the comparatively little involvement of "evaluate" and "create" can be perceived as a drawback for a higher education curriculum. However, although the lowest-order cognitive process (i.e., remember) was paid too much attention at the Ph.D. level, this was not at the expense of total neglect of higher-order skills, especially "analyze" and "create". Still, such an inclination towards "remember" is not highly promising in a Ph.D. program. Compared to the educational objectives at the M.A. level, higher-order cognitive skills were, as expected, integrated more at the Ph.D. level, though they both attended to the lowest-order skill more noticeably.

Central to any higher education system is a critical understanding of research and the ability to conduct it. This is explicitly intended in the official documents, and the key enabling factors in this respect are evaluation and creation, both of which were not adequately represented in the curriculums. As Rezvani and Sayyadi (2016, p. 1116) pointed out, "students' capacities to evaluate and analyze content matters are of fundamental considerations in higher-education" and those completing their postgraduate studies are arguably required "to attain and demonstrate more complex capacities than the surface knowledge of technical contents". However, it appears that the objectives considered for M.A. and Ph.D. TEPSOL programs are not aligned with the substantial development of such elaborate capacities. Hence, it seems critical to define and include more higher-level educational objectives at both levels.

Looking at the knowledge types, one can see that lower-order knowledge types were dominant at both levels, suggesting that such a tendency is common in TPSOL at the postgraduate level. Unlike the M.A. program, however, “metacognitive knowledge” was little heeded at the Ph.D. level, which, as mentioned earlier, is an essential component for any educational program, especially at the postgraduate level. This is in line with Wei and Ou’s (2019) study where more weight was found to be attached to lower-order knowledge types in the curriculums examined in four Chinese regions. This is despite the fact that numerous studies (e.g., Choi et al., 2011; Magno, 2010; Pintrich, 2002) have confirmed the positive effect of higher-order knowledge types on students’ learning. Pintrich (2002), for instance, pointed out that metacognitive knowledge needs to be explicitly reflected in education curricula, as it helps to promote student development. In another study, Magno (2010) investigated the relationship between metacognition and critical thinking and found a significant correlation between them, implying that metacognitive knowledge can lead to the promotion of critical thinking. Finally, in an attempt to reconceptualize the notion of scientific literacy for the twenty-first century, Choi et al. (2011) proposed that metacognitive knowledge should be one of the necessary dimensions of scientific literacy, which in our view, is in turn the key to success in higher education. In effect, postgraduate students and prospective instructors and researchers are demanded to be creative and able to transfer learning, both of which are much dependent on metacognitive awareness (Ford & Myles, 2011).

Another issue of note emerging from the analysis is recognizing the links between cognitive processes and knowledge types. Anderson and Krathwohl (2001) pointed out that in practice some of the pairings such as “factual knowledge with remember”, “conceptual knowledge with understand”, and “procedural knowledge with apply” repeatedly occur, which may have important implications for teaching and curricula (Wei & Ou, 2019). In a study conducted by Jideani and Jideani (2012) to explore the alignment of assessment objectives with instructional objectives “remembering the factual knowledge” and “understanding the conceptual knowledge” were reported to be the most recurring patterns. However, two of these links were rarely identified in the M.A. official curriculum standards of TPSOL. Moreover, the fact that no pairing patterns of “metacognitive knowledge” with more complex cognitive processes of “analyze”, “evaluate”, and “create” occurred can seriously hinder students’ development and ensue profound consequences. In addition, examining the links between cognitive processes and knowledge types in the Ph.D. program revealed that the pairings of “factual knowledge with remember”, “conceptual knowledge with understand", and "procedural knowledge with apply" as expected by Anderson and Krathwohl (2001) did not occur much similar to the M.A. program. The pairing of "metacognitive knowledge" with higher-order cognitive processes ("analyze", "evaluate", "create") was also very limited for this Ph.D. curriculum; the pairings which were totally and noticeably absent in the M.A. curriculum standards.

Finally, with respect to the vertical alignment between the two curriculums, the PAI of 0.694 indicated that they are significantly aligned with each other in terms of educational objectives. The descriptive patterns observed made the PAI come as no surprise, as both of the programs paid similar attention to lower-order cognitive skills and knowledge types, and ignored the higher ones. In order for education to accomplish its missions and visions, there must be congruence among its components (e.g., Webb, 1997, 1999, 2002) and its sequential levels (Amiri & Rezvani, in press). Borrowing techniques from physics, it is argued that if forces and movements are focused or aligned, they additively bring about more noticeable effects. Out of alignment or blurred educational standards and objectives are prone to misinterpretation and failure and even if attained would lead to more disjointed and trivial realization. Similarly, as Gamoran et al. (1997) maintained, the ultimate achievements of students lie, among others, in the alignment of curriculums. This alignment in an educational system is argued to be even the single entity promoting educational attainment from primary levels through higher education (Hodgkinson, 1999).

Unlike undergraduate education where students are initiated into education, syllabuses and textbooks are pre-specified, and exams cover only a range of covered topics, students in postgraduate education are supposed to manage their own learning, initiate discussions, argue about issues, become researchers and materials developers, make contributions to their field of study, and in case of some majors, become teacher educators (Phillips & Pugh, 2010). As such, both M.A. and Ph.D. level curriculums of the same or close fields are sequentially interrelated. They proceed in tandem to prepare postgraduate students already established in the context for more sophisticated missions.

In regard to the two sequential postgraduate curriculums of interest in this study, each level has its own specific goals; however, there is considerable overlap, with both basically focusing on teaching Persian to speakers of other languages, teacher training, conducting research on second language learning, and materials development as what students are supposed to master at the end of the program. In fact, these similarities in the aims set and concomitant more specific objectives of the courses engender an adequately positive vertical alignment between these two sequential levels.

5. Conclusion and Implications

This study attempted to provide an evaluation of the distribution pattern of the educational objectives intended in Iran's official curriculum standards of TPSOL at two levels of M.A. and Ph.D. in terms of Bloom's revised taxonomy of educational objectives. It is concluded from the data that the distribution patterns of the objectives at both levels were fundamentally similar and the most frequent cognitive processes and knowledge types emphasized were the lower-order ones. "Remember" was the most frequent cognitive process for both, and "evaluate" and "create" were not paid adequate attention. On the other hand, "factual knowledge" and "conceptual knowledge" were attended at the cost of higher-order knowledge types of "procedural" and "metacognitive". Although this study seems to be the first evaluative inquiry to assess these two intended postgraduate curriculums in Iran, its findings are consistent with those of other studies evaluating textbooks (Rezvani & Haghshenas, 2015; Riazi & Mosalanejad, 2010) and high-stakes tests (Zamani & Rezvani, 2014), suggesting the heavy reliance of Iran's education system on lower-order cognitive skills and knowledge types.

The results of the study may have implications for those who are involved in higher education. Policy-makers might benefit from the results in designing and developing new higher education curriculums and in revising the current programs to redirect the attention to higher-order knowledge types and thinking skills. Theoretical conceptualization of educational objectives can systematically guide both the program development and evaluation. Educators at the forefront of the higher education are also recommended to devise more demanding course syllabuses in line with but beyond the current official policy documents. This will, in turn, pay off for the current postgraduate students and prospective instructors and educators.

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پژوهش‌نامه‌ی آموزش زبان فارسی به غیر فارسی‌زبانان(علمی-پژوهشی)
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برنامه‌های درسی رسمی تحصیلات تکمیلی رشته آموزش زبان فارسی به غیر فارسی زبانان در ایران: ارزیابی اهداف آموزشی و همسویی عمودی (پژوهشی)

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چکیده

با توجه به اهمیت رشته آموزش زبان فارسی به غیر فارسی زبانان به عنوان یکی از زیرشاخه‌های زبانشناسی کاربردی و مطالعات محدود انجام شده در مورد برنامه‌ی درسی مورد نظر آن، مقاله‌ی حاضر سعی دارد تا اهداف آموزشی ارائه شده در اسناد سیاستگذاری این رشته را در دو مقطع کارشناسی ارشد و دکتری با استفاده از طبقه بندی اصلاح شده بلوم (اندرسون و کراتهول، ۲۰۰۱) ارزیابی کند. این مقاله همچنین همسویی آماری عمودی بین مجموعه اهداف آموزشی را با استفاده از تجزیه و تحلیل هم ترازی پورتر و همکاران (۲۰۰۷) بررسی می‌نماید. برای این منظور، آخرین استانداردهای برنامه‌ی درسی یا اسناد سیاستگذاری منتشر شده توسط وزارت علوم، تحقیقات و فناوری ایران به دست آمد. با استفاده از چک لیست تهیه شده توسط رضوانی و زمانی (۲۰۱۲) ، انواع دانش‌ها و سطح شناختی مورد استفاده در استانداردها شناسایی و کدگذاری و به صورت توصیفی تحلیل شد. از فرمول همسویی آماری پورتر و همکاران (۲۰۰۷) نیز برای ارزیابی همسویی عمودی بین اهداف آموزشی این دو مقطع استفاده شد. نتایج این مطالعه نشان داد که اهداف آموزشی در هر دو سطح عمدتاً فرآیندهای شناختی و دانش‌های مرتبه پایین را نشان می‌دهند و موارد مرتبه‌های بالاتر نادیده گرفته می‌شود. همچنین مشخص شد که اهداف آموزشی این دو مقطع به طور عمودی و آماری با یکدیگر مطابقت دارند که نشان دهنده هماهنگی کافی آنها به عنوان دو برنامه پی در پی است. مقاله در پایان پیامدهای این نتایج را برای سیاست‌گذاران و اساتید در آموزش عالی ایران مورد بحث قرار می‌دهد.

کلیدواژه‌ها: فرآیندهای شناختی، اهداف آموزشی، ارزیابی، برنامه‌های درسی در نظر گرفته شده، انواع دانش‌ها، همسویی عمودی.

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