

Evaluation of “Mosaic 1 Reading”: A Microstructural Approach to Textual Analysis of Pedagogical Materials

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Abstract

To analyze and evaluate textbooks, researchers have either proposed scales and checklists to be filled by teachers and learners or conducted qualitative investigations of the match between SLA theories and textbook activities. This study, however, employs the microstructural approach of schema theory to scrutinize the reading passages of “Mosaic 1 Reading”. To this end, 17 passages of the textbook were randomly chosen and their constituting words were explored as semantic, syntactic, and parasyntactic schemata. The passages were also analyzed in terms of their readability indices. The results showed that they consist of 3722 schema types, 2979 (80%) of which are semantic in nature. Although the textbook aims at “academic success” at English language “proficiency levels”, it provides no objective definition of what they stand for. In terms of readability, however, the passages vary in difficulty from grade three in primary school to college level. Further, the textbook is discussed in terms of its constituting schemata and suitability to the Iranian context and suggestions are made for future research. The findings of this study have important implications for language teaching, testing and materials development. They show that language proficiency must be defined in terms of schema types and the bulk of class time must be spent on teaching semantic schemata rather than syntactic and parasyntactic ones. Similarly, for testing the reading comprehension of these passages, the number and type of test items must be based on the percentage of semantic and syntactic schema types and subjective criteria such as teachers’ intuition or experience must be avoided both in teaching and testing the comprehension of passages.

Keywords: schema theory, materials development, reading comprehension, proficiency level, semantic domain

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INTRODUCTION

Textbooks play a pivotal role in teaching English as a foreign language (EFL). They act as agents for change and serve as useful maps or plans of what is intended and expected (Hutchinson & Torres, 1994), allow learners take charge of their own learning (Crawford, 2002), assist less experienced teachers, facilitate self-directed learning and give a framework to the presentation of materials (Cunningsworth, 1984), help both teachers and learners overcome unpredictable and potentially threatening situations faced in social events (Reid, 1994), provide essential sources of information (Donoghue, 1992, p. 35), ‘put flesh on the bones’ of ... syllabus (Nunan, 1991, p. 208), save teachers some time on facilitating learning activities (O’Neill, 1982), and “serve as the basis for much of the language input learners receive and the language practice that occurs in the classroom” (Richards, 2001, p. 251).

In spite of serving a host of educational objectives some of which have been outlined above, few textbooks are written and taught by experts and/or teachers who live and teach English in countries such as Thai and Iran where learners have virtually no opportunity to live the language. As a result most teachers employ “western-compiled textbooks [which] project identities disconnected from ... learners’ lived experiences, adversely affecting their meaning-making during discursive practices (Boriboon, 2008, p. 1). For this very reason, these textbooks need to be evaluated so that their applicability to EFL contexts can be determined objectively.

The present study has, therefore, been designed to evaluate “Mosaic 1 Reading” (Wegmann & Knezevic, 2002) as a western-compiled textbook which is employed by some teachers in Iranian tertiary education centers such as Ferdowsi University of Mashhad to offer reading courses to EFL students at undergraduate level. However, unlike the majority of textbook evaluators who resort either to interviewing the learners and teachers and/or to administering questionnaires and checklists (e.g., Ansary & Babaii, 2002; Boriboon, 2008; Lee & Bathmaker, 2007), the present researchers have employed schema theory as a powerful rationale through which textbooks can be not only evaluated but also taught and tested (e.g., Khodadady, Alavi, & Khaghaninezhad, 2011) objectively.

LITERATURE REVIEW

The concept of schema was originally put forward by Bartlett (1932, 1958), proposing that it provides memory with a mental framework for comprehending and retrieving information. Later, Anderson (1977a, 1977b) made an outstanding contribution to schema theory. He believed that comprehension depended on the knowledge of the world held by individuals and referred to schemata as mental units into which such knowledge is organized. In other words, "in schema theory, individuals organize their world knowledge into categories and systems that make retrieval easier" (Pardo, 2004, p. 274). Consequently, many other researchers used the theory in the same sense (e.g., Carrell, 1987; Mandler, 1984; Rumelhart, 1980; Schank, 1982). Khodadady (1997, 1999) and Khodadady and Herriman (2000), however, used the term schema to demarcate a single or phrasal word which has been used along with other words to produce a specific text. It is commonly known as micro structural approach to schema theory (MICAST). Schema theory from this perspective explains the comprehension of texts as a process of understanding each and all schemata comprising the texts as they combine to produce broader cognitive concepts represented by phrases, clauses, sentences, paragraphs and passages.

In fact, language teacher's responsibility is nothing but to teach schemata in isolation and in combination with each other. According to Wiseman (2008), students need teachers to guide them in developing schemata in order to store and retrieve them accurately and efficiently. Consequently, in schema-based teaching (SBT) (Khodadady & Hesarzadeh, 2014), the English teacher must be highly proficient and qualified to be able to enrich the students' schemata in the language they teach. Since schemata are personalized knowledge (i.e., it varies from individual to individual), specific activities such as brainstorming and previewing are necessary to engage the students cognitively and to activate their schemata before starting to teach new materials; so that the input (i.e., "words") can become intake (i.e., "schemata") in the process of learning materials developed for teaching.

A number of studies have established the superiority of SBT over translation-based instruction (TBI) at schools and universities (e.g., Khodadady, Alavi, & Khaghaninezhad, 2011; Khodadady, Alavi,

Pishghadam, & Khaghaninezhad, 2012; Khodadady & Elahi, 2012; Khodadady & Hesarzadeh, 2014). A case in point is a notable study carried out by Khodadady, Alavi, and Khaghaninezhad (2012) in which they introduced SBT as a language teaching approach, believing that it can "revolutionize the outcomes of foreign language teaching activities" (p. 65). They asserted that it is necessary for language learners to understand how the words comprising a given authentic text are related together internally and dynamically, pointing out that "any slight modification in the lexical network of a text may result in a huge distortion in comprehension" (p. 65). Therefore, the SBT is based on the premise that to comprehend a given text best, the learners should learn what each and all schemata in a text stand for by themselves and in combination with each other. Doing so, they will learn English significantly better than those who are taught via the TBI (Khodadady & Elahi, 2012).

Furthermore, it is agreed that a teacher is tasked with selecting an appropriate textbook for a class (Chen & Chen, 2001). One way to help teachers with this task is the analysis and evaluation of textbooks. "Coursebook analyses and evaluation do not only help teachers to develop themselves, but also help them to gain good and useful insights into the nature of the material" (Tok, 2010, p. 510). Another area in which schema-based approach can be utilized is that of analysis and evaluation of reading comprehension passages comprising different textbooks. As Rixon (2007) convincingly argued, reading skill very often does not receive any in depth analysis (Hughes, 2013). Comprehension is a complex higher level skill which is critically important to the development of students' reading; and critical to comprehension is vocabulary development (Gagen, 2007). Many scholars have, therefore, accentuated the strong relationship between vocabulary knowledge and reading comprehension (e.g., Hart & Risley, 1995; Hirsch, 2003; Nation, 2001).

Malay (2013) considered two main aspects to vocabulary: static and dynamic. Static meanings are found in dictionaries regulated by authorities. They have denotative and isolated meanings; and are conventionalized, predictable, and impersonal/generalized concepts in which the core meaning of the word is taken into consideration. On the other hand, dynamic meanings are found in actual use negotiated between users. They include connotative meanings formed by context.

They are also creative and extended meanings, which are unpredictable and personal/particularized. Khodadady (2008) agreed with Malay that words presented in dictionaries are static. However, he argued that they become dynamic or schemata as soon as they are used to develop texts. In other words, schemata are learners' personally acquired knowledge of words as they are activated and related to each other within the linguistic contexts of sentences, paragraphs and passages.

Schema theory has also been applied to reading from a different perspective: macro structural approach (MACAST). Almost all scholars follow the MACAST and view schema as "the structural patterns of various texts such as narratives and expository ones" (e.g., McNeil, 1987; Poplin, 1988) providing researchers with no objective units and procedure to explore their psychological reality. In the MICAST, however, "all the words and phrases constituting authentic texts are regarded as schemata" (Khodadady & Khosravany, 2014, p. 49) which are categorized into three main linguistic domains: semantic, syntactic, and parasyntactic; 16 genera and 122 species. For instance, the schema *shocking* belongs to the *semantic* domain, *adjective* genus, and *agentive adjective* species. Furthermore, in this approach, the frequency of occurrence of each schema is taken into consideration as well. Frequency is important because a word is gradually acquired as a result of numerous encounters with the word at different times and it cannot be learned by just one encounter, even if the word is taught explicitly (Nation, 2001). Therefore, the MICAST textual analysis and evaluation is very precise as well as objective and accounts for the comprehension of a text in details and as a whole.

A comprehensive review of the literature on text evaluation shows that the majority of studies, if not all, are unsubstantiated and subjective, due to the fact that almost none of them have taken the reading comprehension passages into account. While the MICAST scrutinizes the "texts" to provide materials developers and language teachers with clear and systematic procedures of codification to base their evaluation and teaching on, the advocates of MACAST employ questionnaires or checklists to be filled by teachers or students (e.g., Miekley, 2005; Mukundan, Nimehchisalem, & Hajimohammadi, 2011; Razmjoo, 2010; Razmjoo & Jozaghi, 2010; Tok, 2010; Williams, 1983). For example, considering the application of a number of research findings from SLA literature to materials

development, Tomlinson (2013) questioned the effectiveness of many textbook materials. He identified 10 SLA theories, i.e. "1) rich and meaningful exposure, 2) affective engagement, 3) cognitive engagement, 4) utilization of the resources of the brain, 5) focus on meaning, 6) noticing, 7) opportunities for use, 8) opportunities for interaction, 9) making use of non-linguistic communication, and 10) catering for the individual" (p. 16). Further, he investigated the match between SLA theory and six currently in use course book activities (i.e., English Unlimited: Intermediate, Face2face: Upper Intermediate, Global, Just Right, Intermediate Outcomes, and Speakout). Finally, he claimed "none of the course books focus on meaning, that they are all forms-focused and that the majority of their activities are language item practice activities" (p. 16).

In another MACAST-based study on reading comprehension course books for teenagers and adults, Malay and Prowse (2013) investigated reading skills books and graded reader series published over the last 10 years. Drawing on some selected lessons taken from these course books to exemplify the most common approach in each book, they concluded that the examined reading texts were often "written pre-texts for grammar exploitation rather than for the development of reading skills" (p. 174). Additionally, describing different parts of sample lessons from the books under investigation which were all at upper-intermediate level and contained authentic or adapted reading texts for adults, they maintained that most of the sample texts were mainly developed for structural and lexical language practice or as writing models rather than for reading skills development. Finally, they suggested an integrated skills approach to reading material development in which the focus is on understanding the texts and the words that constitute them.

Likewise, via a qualitative study, Zabihi and Pordel (2011) evaluated the effectiveness of three well-known reading textbooks worldwide (i.e., Select Readings: Upper-intermediate, Active Skills for Reading: Book 4, and Mosaic 2 Reading). Utilizing a checklist, they investigated the extent to which the reading passages and the exercises that precede and follow them promote critical reading. They argued that autonomy and engagement were necessary for the development of critical reading that could be enhanced through strategy as well as task-based instruction. Based on their findings, they

leveled the three reading textbooks against three criteria: "Critical thinking items, the use of appropriate tasks, and strategic instruction" (p. 80). Accordingly, they indicated that these three textbooks "meet the first criterion to some extent, but seriously lack the last two ones" (p. 80) without focusing on any passages.

This study has, however, adopted the MICAST for the first time to examine randomly selected reading passages chosen from a well-known textbook, i.e. "Mosaic 1 Reading" (Wegmann & Knezevic, 2002), presumably written at the intermediate/high intermediate proficiency level. By adopting the elaborate procedure followed by Khodadady and Khosravany (2014), it scrutinizes the structures of the passages in terms of their constituting semantic, syntactic and parasuntactic schema domains, genera and species. Then it focuses on the readability of passages from both traditional and schema-based perspectives and finally discusses the suitability of teaching the textbook to Iranian undergraduate students.

PURPOSE OF THE STUDY

The current study, adopting the microstructural approach to textual analysis of pedagogical materials, aimed to answer the following research questions:

1. Are the 17 passages of M1R selected or modified based on readability indices?
2. What percentage of schema types constitutes the semantic, syntactic, and parasynthetic domains brought up in the 17 passages of M1R?
3. Does the number of schema types forming the semantic, syntactic, and parasynthetic domains of the 17 selected passages presented in the M1R differ significantly?

METHOD

Materials

For the purpose of this study, the textbook "Mosaic 1 Reading" (Wegmann & Knezevic, 2002) [henceforth M1R] was evaluated by employing the MICAST. It is mainly designed to prepare students for academic content at the intermediate/high intermediate level of language proficiency and is widely taught at different universities in Iran to undergraduate students of English language. It is composed of

33 authentic reading comprehension passages within 12 chapters with various live and engaging topics such as health and leisure, money matters, remarkable individuals, and creativity followed by exercises that aim to help the improvement of this important skill in terms of vocabulary development, reading skills, critical thinking skills/culture and testing. Since the MICAST analysis of all the reading selections of the book would make a strong demand on the researchers' time and effort, 17 passages were chosen randomly to evaluate its content (see Table 1).

Data Collection Procedure

Following Khodadady and Khosravany (2014), MIR was treated as a linguistic text whose authors had employed certain words to create a language of their own. The words were, therefore, analyzed in terms not only of their meanings but also of the specific places they had assumed in combination with each other to produce the larger linguistic units of sentences and paragraphs. The analysis was conducted by utilizing 122 codes Khodadady and Lagzian (2013) developed to provide researchers with a theoretically sound and epistemologically objective method to study texts.

Each code reflects the linguistic feature of every and all words in MIR consisting of four digits which specify the first and broadest category as domains (the first left digit), the second as genera (the second left digit) and the third as species (the third and fourth digits). For example, the words “man”, “the”, and “not” are types of semantic (1), syntactic (2) and parasyntactic (3) domains whose genera indicate their being a noun (3), determiner (2) and para-adverb (5), respectively. They are further refined by indicating the fact that “man” is a simple noun (1380) while “the” precedes a noun to specify it (2270) as “not” follows a verb to negate its nature (3518). Thus, each code allows researchers to explain a large number of data whose validity had previously stayed unexplored. (All the species comprising the 17 passage of MIR along with their codes are given in Appendix).

Since each code specifies the semantic and linguistic features of given words such as “the”, “not”, and “man” within given texts, Khodadady (1997) used the term *schema* to render each and all words writer specific. The codification of all words/schemata comprising 17 passages of MIR, for example, showed that it consists of 3722

schemata among which “the”, “not”, and “man” were the most frequent because they had tokens of 827, 69, and 57, respectively. While the word “man” has a fixed meaning in a dictionary, it becomes a schema when the readers of M1R encounter it in various contexts, some of which will be brought up in the Discussion section shortly.

In addition to counting a specific schema type such as “man” to obtain its tokens, some inflectional morphs, i.e., “the actual forms used to realize morphemes” (Yule, 2010, p. 71), were also treated as semantically redundant in order to determine the type of a specific schema. The schemata having the plural morphs “s” and “es” as well as those having the possessive morph “s” were treated as the tokens of a schema which did not have these morphs. The words “man”, “men” and “man’s” were thus given the same code (i.e., 1380) and were counted as four tokens of the schema type “man”. The same procedure was followed by Khodadady and Lagzian (2013) to study an English dentistry textbook and its Persian translation.

Data Analysis

First, the Microsoft Word software was used to estimate the readability level of the 17 passages chosen from M1R by employing Flesh Readability Ease score (Flesch, 1948) and Flesch-Kincaid Grade Level score. Then, in order to find out whether there was a significant difference among the three schema domains constituting the 17 selected reading passages of textbook, chi-square test was utilized. Moreover, Crosstabulation statistics was applied to the data to explore the difference in the number of genera which constitute the semantic, syntactic and parasyntactic domain schema types and tokens of the textbook. IBM SPSS Statistics 21 was used for the statistical analyses and answering the research questions.

RESULTS

Table 1 presents the readability level of the 17 reading passages of M1R as determined by Flesch Reading Ease score. It tests texts based on a 100-point scale in which higher scores indicate passages that are easier to understand and lower ones show materials that are more difficult to read. The texts that fall within a score of 60 to 70 are interpreted as standard. As it can be seen, the difficulty level of passages range from difficult (i.e., 42.9, 42.6, 49.0, 36.5, and 39.8) to

very easy (i.e., 91.6 and 100). These results answer the first question negatively and show that no readability indices have been employed to select the 17 passages of M1R.

Table 1: Readability level of the 17 passages of "Mosaic 1 Reading"

Chapter	Part	Title	Flesch	FKGL
3	1	Who's Taking Care of the Children?	52.0	10.4
3	2	70 Brides for 7 Foreigners	51.4	9.8
5	2	Tracks to the Future	42.9	12.8
6	1	Executive Takes Chance on Pizza, Transforms Spain	42.6	12.3
7	2	Beating the Odds	49.0	11.6
7	3	Courage Begins with One Voice	55.7	10.3
8	2	If You Invent the Story, You're the First to See How It Ends	77.1	6.0
8	3	We can't just sit back and hope	70.2	7.1
9	1	Ethnocentrism	60.2	9.9
9	2	A Clean, well-lighted place	91.6	2.6
9	3	The spell of the Yukon	100.0	0.3
10	1	Soapy Smith	56.0	10.6
10	2	Eye witness	88.9	2.9
10	3	Born Bad?	36.5	13.1
11	1	Touch the Earth: The Meaning of the Circle	70.4	8.3
11	3	Down the Drain: The Coming World Water Crisis	39.8	13.3
12	5	Inaugural Address	60.9	11.4

Table 1 above also provides Flesch-Kincaid grade level scores for each text corresponding with the appropriate US grade level. As can be seen, the passages are very heterogeneous because they suit students coming from different grades, indicating that the authors of M1R did not base their selection of teaching materials on any objective measures of comprehensibility. Passage 10 (A Clean, Well-Lighted Place), for example, is suitable for grade three primary school students while passage 16 (Down the Drain: The Coming World Water Crisis) requires the ability to read textbooks written for college students.

Table 2 presents the descriptive statistics of the genera types and tokens comprising the 17 passages of the M1R. The results answer the second question and show that while almost the same percentage of semantic (44.2%) and syntactic (44.3%) schema tokens constitute the passages, only 11.3% of tokens are parasyntactic in domain. Nevertheless, the percentage of domains differs noticeably from each other when their types are taken into account, i.e. semantic schema types form 80% of the texts while syntactic and parasyntactic schema types constitute only 6.3% and 13.7%, respectively.

Table 2: Descriptive statistics of schema genus "types" and "tokens" forming the 17 passages of M1R

Schema	Genus	Type	Type %	Total %	Token	Token %	Total %
Semantic	Nouns	1280	34.4		3241	22.7	
	Verbs	964	25.9		1792	12.5	
	Adjectives	615	16.5		1023	7.1	
	Adverbs	120	3.2	80	266	1.9	44.2
Syntactic	Determiners	55	1.5		1912	13.4	
	Conjunctions	22	0.6		728	5.1	
	Prepositions	46	1.2		1640	11.5	
	Pronouns	70	1.9		1318	9.2	
	Syntactic verbs	42	1.1	6.3	733	5.1	44.3
Parasyntactic	Abbreviations	44	1.2		192	1.3	
	Names	234	6.3		469	3.3	
	Numerals	120	3.2		203	1.4	
	Para-adverbs	107	2.9		586	4.1	
	Particles	1	0		188	1.3	
	Symbols	2	0.1	13.7	11	0.1	11.5
Total		3722	100	100	14302	100	100

Table 3 presents the statistics and chi-square test run on the schema types forming the semantic, syntactic and parasyntactic domains covered by the 17 passages of M1R. As can be seen, the number of semantic schema types (2979) differs noticeably from that of syntactic (235) and parasyntactic (508) types. The test showed that the difference in the number of semantic, syntactic and parasyntactic schema types is significant, i.e., $X^2(2, n=3722)=3683.4, p=.001$, answering the third question positively and showing that the three

domains have psychological reality for textbooks employed to teach EFL.

Table 3: Chi-square test of Mosaic 1 Reading schema "type" domains

	Observed N	Expected N	Residual	Tests
1 Semantic	2979	1240.7	1738.3	$X^2= 3683.48$
2 Syntactic	235	1240.7	-1005.7	df= 2
3 Parasyntactic	508	1240.7	-732.7	Asymp. Sig.= .001
Total	3722			

DISCUSSION

Mosaic 1 Reading (M1R) is a textbook developed based on the subjective macrostructural approach to schema theory (MACAST). Wegmann and Knezevic (2002) ask English language instructors to teach the M1R so that they can boost their students' "academic success" (p. vi). Their *nonacademic* approach to convincing the teachers starts from an unspecified section whose heading runs "Mosaic 1 Reading" where they claim that "*Interactions Mosaic, 4th edition* is the newly revised five-level, four skill comprehensive EFL series designed to prepare students for *academic content* [emphasis added]. The themes are integrated across proficiency levels and the levels are articulated across skill strands" (p. vi).

Unfortunately, many authors resort to the MACAST to justify their subjective arguments and unsubstantiated claims. One, for example, expects to read some explanations of what "Mosaic 1 Reading" (p. vi) is about. However, what they find is nothing but advertising "*Interactions Mosaic, 4th edition*" as a five level series presenting alleged integrated themes "across proficiency levels". It is left to bewildered teachers such as the present researchers to find out what Wegmann and Knezevic (2002) meant by the terms "proficiency levels". Furthermore, similar to other advocates of MACAST, the authors of M1R employ ESL and EFL interchangeably. Research findings, however, show that factors or genera underlying many cognitive domains such as emotional intelligence (e.g., Khodadady & Tabriz, 2012), personality (e.g., Khodadady & Mokhtary, 2014) and

religious orientation (Khodadady & Saadi, 2015), to name a few, vary from ESL to EFL contexts.

The adoption of MACAST as a theory of materials development seems to have led Wegmann and Knezevic (2002) to make other unsubstantiated claims. In part 1 of chapter 1 in the M1R, for example, they introduce the reading passage “Living in the USA” by saying that “the following article probably contains a number of words you do not know” (p. 2). They justify their readers’ unfamiliarity with the words by saying that “This is not surprising. Linguists tell us that, for historical reasons, English has a larger vocabulary than any other known language” (p. 2). More surprising than the claim is Wegmann and Knezevic’s solution stated as step 2, “Read the article for the main ideas. Skip words and phrases you do not understand. Do not slow yourself down by looking up words in a dictionary” (p. 2). Research findings do not, however, support Wegmann and Knezevic’s suggestion.

Based on Khodadady and Herriman’s (1996) findings, Khodadady (2000), for example, administered the reading comprehension subtest of TOEFL 91 to 22 non-native speakers (NNSs) of English and asked them to underline the words whose meaning they neither knew nor could guess from their context. Out of 90 unknown words, he chose 30 most frequently underlined words and developed a multiple choice item test (MCIT) called contextual vocabulary test (CVT). Khodadady administered the CVT along with the MCIT reading comprehension test upon which the CVT was developed. He also administered a TOEFL vocabulary test which measured test takers’ global vocabulary knowledge (GVT) to 123 native speakers (NSs) and NNSs. When he correlated the three tests, the results showed that the CVT correlated higher than the GVT with the reading comprehension test, indicating that “the contextual vocabulary knowledge of both NSs and NNSs is the best predictor of their reading comprehension ability” (p. 200).

Khodadady’s (2000) findings are in line with those of the present which provide an objective theory-driven approach to textual analysis through which materials developed for English language teaching can be objectively analyzed. Since the MICAST followed in this study focuses on the meanings as well as the linguistic functions of words as they combine with each other to produce sentences and paragraphs of texts, it is far superior to Flesch Readability Ease Score (Flesch, 1948) which is based on average sentence length (the number of words

divided by the number of sentences) and average number of syllables per word (the number of syllables divided by the number of words). Perhaps the dependence of the score on word length and syllable has contributed to Wegmann and Knezevic's (2002) reluctance to make the passages of MIR homogeneous in terms of their readability level.

Instead of viewing words in terms of their length, the MICAST approaches them as representative of specific concepts whose comprehension in isolation and in combination with each other brings about understanding texts such as the MIR (Khodadady, 1997). They must, therefore, be used as the basic and most important units of teaching (Khodadady, Alavi, & Khaghaninezhad, 2012; Khodadady & Elahi, 2012; Khodadady & Hesarzadeh, 2014), translation (Seif & Khodadady, 2003) and evaluation of translated texts (Khodadady & Lagzian, 2013). The findings of this study show that schemata should also be employed to evaluate materials developed for teaching EFL.

The results of this study, for example, show that 80%, 6.3% and 13.7% of schema types comprising the 17 passages of MIR are semantic, syntactic and parasyntactic in domain, respectively. Since the syntactic and parasyntactic schema types reflect the English structure as they connect the semantic schema types together to produce the broader concepts called cognitive species and genera represented by the linguistic units of sentences and paragraphs, respectively, their sum ($6.3\%+13.7\%=20\%$) being divided by the percentage of semantic schema types ($20/80=0.40$) provides the most accurate index of MIR comprehensibility. As an index of text comprehensibility .40 is indicative of very high difficulty level compared to the materials taught at beginner levels in Iran.

Khodadady and Hesarzadeh (2014), for example, reported 56.7%, 17.3% and 26% for the semantic, syntactic and parasyntactic schema types comprising the passages of the "English Book 2" (Birjandi & Soheili, 2009a) and "English Book 3" (Birjandi & Soheili, 2009b) taught in Iranian junior high schools. Adding up 17.3 and 26 (43.3) and dividing the result by 56.7 yields 0.76, indicating that the two textbooks are much easier in terms of their comprehensibility than the MIR. This is because almost half of the former textbooks depend on schemata whose main function is to teach the students how to use them to express themselves by resorting to specific semantic schema

types combined together within certain sentences to represent concepts-broader-than-schema called species in the MICAST.

Finally, the suitability of teaching the M1R in Iran as an EFL context is questionable. The schema “man”, for example, is the most frequent concept brought up in its 17 passages because it has a token of 57. In Part 2 of Chapter 9, the short story entitled “A Clean, Well-Lighted Place” written by Ernest Hemingway is given as a reading passage in which “man” occurs 17 times. The introductory paragraph where “man” occurs three times consists of two sentences whose constituting words read:

It was late and everyone had left the café except an old man who sat in the shadow the leaves of the tree made against the electric light. In the daytime the street was dusty, but at night the dew settled the dust and the old man liked to sit late because he was deaf and now at night it was quiet and he felt the difference. The two waiters inside the café knew that the old man was a little drunk, and while he was a good client, they knew that if he became too drunk he would leave without paying, so they kept watch on him. (p. 158)

No EFL learners can find a place similar to “the café” described in the paragraph above in Iran. Nor do they have any idea what “being drunk” means because alcoholic drinks are forbidden in public. How does then the 108 schema tokens comprising the paragraph help the learners to relate to “A Clean, Well-Lighted Place” as the main theme of the story advocated by the MICAST? What type of academic success can such a passage lead to when it starts with a place largely unknown to its readers? What personal and social reactions can such a passage produce when it brings up a theme, which has little relevance, if any, to the society in which it is taught?

CONCLUSION AND IMPLICATIONS

The present study analyzed seventeen reading passages of M1R in terms of their themes and showed that they are chosen based on a subjective approach called the MICAST. They are allegedly brought up to achieve “academic success” and address English language “proficiency levels” without objectively defining what they stand for and how the textbook helps its readers acquire them. As the compilers of the passages, Wegmann and Knezevic (1985), for example,

believed that their readers can “perceive the author's general intent and to read for overall meaning, even when they are unfamiliar with many words and some grammatical structures” (p. xiv). Their belief is best captured by summarization defined as reducing reading passages to their key ideas or the main points that are worth noting and remembering (Hurst & Hurst, 2015).

Academic studies do not, however, support Wegmann and Knezevic's (1985) MACAST-based belief. To explore the effect of summarizing some passages of M1R on reading comprehension ability of undergraduate university students, Shamsini and Mousavi (2014), for example, recruited 75 undergraduate university students and assigned them randomly to summarization, question-generation and control groups. Upon securing the homogeneity of their groups through administering TOEFL as a pretest, Shamsini and Mousavi (2014) employed traditional reading comprehension techniques to teach some passages of M1R to their control group while they required the members of the other two groups to summarize and generate questions on the same passages as well. Contrary to their expectations, they did not find any significant difference in the scores of three groups on the TOEFL administered as a post test after treatment, rejecting Wegmann and Knezevic's rationale behind compiling M1R, (i.e., helping the textbook users master “these skills [i.e., getting the main idea through summarization], rather than the content of the readings” (p. xiv).

In contrast to the MACAST, the MICAST-based analysis of M1R reveals the language proficiency level of the textbook by specifying the exact number of schema types which constitute the semantic, syntactic and parasyntactic domains of its reading passages. The analysis is in agreement with vocabulary experts who consider adequate reading comprehension dependent upon knowing between 90 and 95 percent of semantic schema types in a text (e.g., Hirsch, 2003). Since the results of this study show that the 17 passages of M1R consist of 2979 semantic schema types, their readers must know between 2681 to 2830 of these schemata in order to comprehend the passages adequately. Considering the fact that a large number of these schema types bear little relevance, if any, to the Iranian society in which they are taught, the number of unknown schemata will be far more than the accepted range resulting in misunderstanding the passages.

In spite of providing empirical indices through which the passages constituting MIR were evaluated in terms of MICAST, the findings of this study are limited in scope because no attempt was made to design any ability tests on the passages analyzed to study their comprehensibility psychometrically. It is, therefore, suggested measures such as S-Tests are developed on the passages in order to find out whether their teaching brings about comprehension on the part of Iranian EFL learners. S-Tests are recommended because they require their takers “to draw upon their experiences and background knowledge to distinguish the author's schemata from among the competitors which share some semantic features with those of the author” (Khodadady & Herriman, 2000, p. 206)

Finally, the findings of this study have important implications for language teaching, testing and materials development. They show that language proficiency must be defined in terms of schema types and the bulk of class time must be spent on teaching semantic schemata rather than syntactic and parasyntactic ones. Similarly, for testing the reading comprehension of these passages, the number and type of test items must be based on the percentage of semantic and syntactic schema types and subjective criteria such as teachers' intuition or experience must be avoided both in teaching and testing the comprehension of passages. Materials developers must also focus on choosing passages whose constituting schemata deal not only with “customs, personalities, values, and ways of thinking of Americans and Canadians” (Wegmann & Knezevic, 1985, p. xiv) but also with those of local readers.

Bio-data

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Appendix

Schema species codes and tokens forming the 17 passages of M1R

Schema Species	Species code	Tokens
Abbreviations	3110	186
Acronyms	3120	6
Adjectival Noun	1310	49
Agentive Adjective	1110	45
Agentive Complex Adjective	1111	9
Comparative Adjective	1120	29
Comparative Adverb	1210	53
Complex Adjective	1130	53
Complex Dative Adjective	1141	28
Complex Noun	1320	48
Complex Preposition	2310	98
Complex Verb (Base)	1411	12
Complex Verb (Past participle)	1413	12
Complex Verb (Present participle)	1414	13
Complex Verb (Simple Past)	1415	13
Complex Verb (Third Person)	1412	6
Compound Noun	1330	112

Compound Preposition	2320	50
Conjunction (Phrasal)	2110	20
Conjunction (Simple)	2120	708
Dative Adjective	1140	81
Demonstrative Determiner	2210	79
Demonstrative Pronoun	2410	56
Derivational Adjective	1150	254
Derivational Adverb	1220	157
Derivational Complex Adjective	1151	41
Derivational Complex Noun	1341	33
Derivational Noun (Simple)	1340	472
Derivational Verb (Base)	1421	9
Derivational Verb (Present participle)	1424	4
Emphatic Pronoun	2420	1
Future	2544	22
Future Auxiliary	2545	6
Gerund Noun	1350	56
Gerund Noun (Complex)	1351	8
Interrogative Pronoun	2430	12
Model (Past)	2580	53
Model (Present)	2570	44
Name (Full)	3310	98
Name (Labeling)	3320	32
Name (Organizational)	3330	22
Name (Single)	3340	289
Name (Titles)	3350	28
Nominal Adjective	1160	37
Nominal Noun	1370	35
Numeral (Alphabetic)	3410	46
Numeral (Digital)	3420	123
Numeral (Year)	3440	34
Numeral Determiner	2230	29
Object Pronoun	2440	214
Para-adverbs (Additive)	3511	41
Para-adverbs (Contrasting)	3512	51
Para-adverbs (Emphatic)	3513	22
Para-adverbs (Exemplifying)	3522	10
Para-adverbs (Frequency)	3514	36
Para-adverbs (Intensifying)	3515	98
Para-adverbs (Interrogative)	3516	45

Para-adverbs (Location)	3523	33
Para-adverbs (Manner)	3517	15
Para-adverbs (Negation/Approval)	3518	99
Para-adverbs (Prepositional)	3519	16
Para-adverbs (Referential)	3520	38
Para-adverbs (Time)	3521	82
Particle (Simple)	3611	188
Past Auxiliary	2511	212
Past Model Auxiliary	2531	2
Past Perfect Auxiliary	2512	2
Past Perfect Model Auxiliary	2532	5
Phrasal Preposition	2330	10
Phrasal Verb (Base)	1431	48
Phrasal Verb (Past Participle)	1433	8
Phrasal Verb (Present Participle)	1434	19
Phrasal Verb (Simple Past)	1435	42
Phrasal Verb (Third Person)	1432	5
Possessive Determiner	2240	278
Possessive Pronoun	2441	5
Present Auxiliary	2521	345
Present Model Auxiliary	2541	13
Present Perfect Auxiliary	2522	15
Present Perfect Model Auxiliary	2542	4
Present Phrasal Auxiliary	2561	10
Quantifying Determiner	2250	227
Ranking Determiner	2260	41
Reflexive Pronoun	2450	17
Relative Pronoun	2460	252
Simple Adjective	1170	435
Simple Adverb	1230	52
Simple Noun	1380	2427
Simple Preposition	2340	1482
Simple Verb (Base)	1441	578
Simple Verb (Past Participle)	1443	221
Simple Verb (Present participle)	1444	203
Simple Verb (Simple Past)	1445	444
Simple Verb (Third Person)	1442	152
Specified Pronoun	2481	17
Specifying Determiner	2270	1258
Subject Pronoun	2470	634

Superlative Adjective	1180	11
Superlative Adverb	1240	2
Unspecified Pronoun	2480	110
Symbol (Conventional)	3710	11
Derivational Verb (Past Participle)	1423	2
Compound Complex Noun	1331	1
Derivational Verb (Simple Past)	1425	1
Complex Adverb	1211	2

