Four Corners Series Evaluation: A Schema-Based Approach

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Abstract

It is assumed that textbooks play an important role in both EFL/ESL contexts. The present study aims to investigate the constituting schemata of Four Corners series relying on micro structural approach to schema theory. To this end, 24 reading sections of FC1 and FC2 (each book consisted of 12 reading comprehension sections) were evaluated in terms of their schemata forming the texts. Following this, the schemata were codified and categorized into three main domains including semantic, syntactic and parasyntactic. Subsequently, the genera and species of these domains were specified and codified. The study initially identified the types and tokens of the three domains in each book and then the comparison was made between the two. The results of the study revealed that the two textbooks differed significantly from each other at three domains of semantic, syntactic and parasyntactic. Furthermore, the findings are discussed and suggestions are made for future research.

Keywords: domain, genera, schema theory, species, types; tokens

1. Introduction

It is believed that textbooks play an important role in both EFL/ESL contexts. In every classroom setting, textbooks are known as the second important factor after teacher's role (Riazi, 2002). Teachers can plan the course syllabus and manage the time effectively by employing an appropriate textbook in their classrooms. Furthermore, learners also tend to have a textbook since they consider the learning task as a serious action for which they try to set their purposes during the course of study (Nunan, 1989). In addition, Ur (1996) believes that following a textbook may bring prestige for its user.

In ELT, coursebooks still play a central role in shaping classroom input, task design, and learning opportunities, which is why principled evaluation of materials remains an important responsibility for teachers and curriculum planners (Tomlinson, 2021). To develop and prepare an appropriate material for a course of study is often considered as a challenging task; however, a large number of available textbooks in the market help teachers select the one which they find the most appropriate of all. This task in fact requires a clear and significant evaluation that no one can neglect its importance (Sahragard et al., 2009). Successive evaluation of textbooks helps both the teachers and the policy makers not only discriminate them from each other but also spot their strong and weak points to select the one that mostly fits to the intended classroom setting (Nunan, 1989).

Some guidelines for the optimum use of available textbooks have been proposed by different scholars. For instance, according to Cunningsworth (1995), an author of a textbook should consider a number of factors including learners' needs, learners' effective use of language and the ease of learning process. A complimentary criterion for evaluation refers to that of Nunan (1989) which provides a list of successful listening, speaking, reading and writing. Since no coursebook is universally appropriate for all contexts, evaluation needs to be systematic and purpose-driven, considering learners' needs, classroom realities, and how well the materials support learning outcomes (McGrath, 2022).

Khodadady (2008a) suggests a schema-based textual analysis for the evaluation of textbooks, which is the focus of the present study. He believes that learners' both listening and reading skills can be evaluated and assessed by applying either a macro structural or a micro structural approach through the schema theory. According to Poplin (1988) as cited in Khodadady (2008a), in the macro structural approach of schema theory, schema is considered as the knowledge of structural pattern of various texts such as whether being expository or narratives. In contrast to the macro structural approach of schema theory, in the micro structural approach, schema is defined as a word whose combination with other words in an unmodified text reflects the concept that the writer of that text tends to convey (Khodadady & Herriman, 2000).

Texts developed by text designers are mostly based on modifying and changing the words of the texts rather than the text itself; therefore, the macro structural approach failed to assess the comprehension ability of readers (Khodadady, 2008a). However, the micro structural approach was found to develop a reliable and valid pattern for designing proficiency and achievement tests (Khodadady & Seif, 2006).

1.1 Schema Theory

Recent studies on reading process reveal that one of the most important purposes in EFL/ESL teaching and learning contexts is reading comprehension skill in particular (Anderson & Pearson, 2004; Nuttal, 1996). According to Goodman (1970):

> Reading is a selective process. It involves partial use of available minimal language cues selected from perceptual input on the basis of the reader's expectation. As this partial information is processed, tentative decisions are made to be confirmed, rejected or refined as reading progresses (p. 260).

Pedagogically, while reading a text, readers make use of some ideas, information and beliefs to make linguistic predictions and to facilitate the integration of new information from the current text into their pre-existing knowledge. Having a good reading skill is dependent on a mutual interaction between the reader's existing linguistic knowledge and his or her current knowledge which is known as schema. "Schema is a set of interrelated features which are associated with an entity or concept" (Field, 2003 p. 39). In order to understand the text, readers try to relate the new knowledge from the text into their pre-existing schemata (Wallace, 2001). When the schemata are activated, it enables a person to comprehend something, because it is integrated to patterns of knowledge that he or she already knows (Harmer, 2001).

According to schema theory, when a person gains knowledge, he or she tries to relate the newly gained knowledge into some structure in memory helping her/him make sense of that knowledge (Khemlani, 2000). It is also claimed that firstly information is broken down into generalizable chunks and then they are categorically stored in brain for later retrieval. Therefore, schema is known as a single word working along with other words in order to establish an authentic text whether written or uttered for being read or heard under certain situations at specific settings (Khodadady & Seif, 2006).

1.2 Macro Structural and Micro Structural Approaches to Schema Theory

Schemata theory explains how readers understand and comprehend written texts through two approaches i.e., macro structural and micro structural approaches. In the former approach which is known as top-down, readers integrate the information of the given text into their background knowledge in order to comprehend the text. Therefore, it assumed schemata as broad terms such as genre or topic. The micro structural approach, however, known as the bottom-up approach adopts words and phrases as schemata the comprehension of which explains the reading comprehension ability of language readers. One can consider the schema-based instruction (SBI) as a language teaching approach relying on the notion that learners can comprehend a text more effectively if they have enough familiarity with the sense of each word known as schemata used in the text by the writer. In micro structural approach of schema theory, schemata are viewed as essential constituents of translation consisting of three main domains referring to as semantic, syntactic and parasyntactic by Khodadady (2008b). These domains are broken down into different subcategories in order to account for their potential distinctive roles. From a pedagogical perspective, the lexical load of a text and the frequency and familiarity of words can strongly affect comprehension and learning, especially for lower-level learners, making word-level analysis valuable in evaluating reading materials (Nation, 2022).

1.3 Semantic Schemata

Semantic schemata refer to single words of a given text the meanings of which do not depend on other schemata of the text. Semantic schemata as a domain consist of four genera including verbs, nouns, adjectives and adverbs referred to as open-set items (Khodadady & Lagzian, 2013). According to Khodadady (2008a), particularly, semantic schemata are few in frequency (i.e. token) and many in number (i.e. type) because writers or speakers make use of new verbs, nouns, adjectives and adverbs when they want to express new thoughts, feelings, and attitudes writing or speaking about a new topic. Table 1 presents the genera of semantic domain along with their species.

Table 1. The genera of semantic domain along with their species

Genera	Species
Adjectives	Agentive, Comparative, Dative, Derivational, Nominal, Simple, Superlative
Adverbs	Comparative, Derivational, Simple, Superlative
Nouns	Adjectival, Complex, Compound, Conversion, Derivational, Gerund, Nominal, Simple
Verbs	Complex, Derivational, Phrasal, Simple, Slang

Syntactic Schemata

Unlike semantic schemata, syntactic schemata are referred to as close-set items including conjunctions, determiners, pronouns, auxiliaries and modals (Quirk, et al., 1985). These types of schemata are many in token but few in type and provide readers or listeners with a limited set of items that enables them to express what the writers or speakers intend to convey through connecting the semantic schemata together (Khodadady, et al., 2012). Table 2 presents the genera of syntactic domain along with their species.

Table 2. The genera of syntactic domain along with their species

Genera	Species
Conjunctions	Phrasal, Simple
Determiners	Demonstrative, Interrogative, Numeral, Possessive, Quantifying, Ranking, Specifying
Prepositions	complex, compound, phrasal, simple
Pronouns	demonstrative, interrogative, object, possessive, reflexive, relative, subject, unspecified
Syntactic verb	past auxiliary, present continuous auxiliary, present auxiliary, future auxiliary, past phrasal auxiliary, past perfect phrasal auxiliary, modal (present), and modal (past)

1.4 Parasyntactic Schemata

The parasyntactic domain of schemata consists of seven genera including abbreviations, interjections, names, numerals, para-adverbs, particles, and symbols (Khodadady & Lagzian, 2013). The types that form the species of parasyntactic domain are many in types but few in tokens. Table 3 presents the genera of parasyntactic domain along with their species.

Table 3. The genera of parasyntactic domain along with their species

Genera	Species
Abbreviations	Abbreviations; acronyms
Interjections	Simple
Names	Full, Labeling, Organizational, Single, Titles
Numerals	Alphabetic, Digital, Roman, Year
Para-adverbs	Additive, Contrasting, Emphatic, Exemplifying, Frequency, Intensifying, Interrogative, Location, Manner, Negation/Approval, Prepositional, Referential, Time
Particle	Complex, Simple
Symbols	Conventional, Scientific

Although there have been a number of studies conducted on exploring the efficacy of schema theory e.g. (Khodadady, et al., 2012; Khodadady & Elahi, 2012) a brief review of relevant studies in the field reveals that few research has been done to evaluate and compare textbooks through micro structural approach of schema theory. The present study tends to evaluate *Four Corners 1* (FC1) and *Four Corners 2* (FC2) written by Richards and Bohlke in 2012. *Four Corners* series is claimed to "combine effective methodology, a clear design, and a practical 'can-do' approach, giving students the language and confidence they need to communicate accurately and fluently in English" (Richards & Bohlke, 2012 written on the back cover of the book). The aim of the current study is to evaluate and compare the reading sections of *Four Corners 1* and *Four Corners 2* by applying a microstructural approach of schema theory introduced by Khodadady (2008a). The following research questions are going to be answered throughout this study:

Q1: How many schema tokens and types do comprise the reading comprehension passages of *Four Corners 1?*

Q2: How many schema tokens and types do comprise the reading comprehension passages of *Four Corners 2?*

Q3: What schema types are common and distinct to *Four Corners 1* and *Four Corners 2*?

2. Methodology

2.1 Materials

Four Corners 1 (Richards & Bohlke, 2012) and *Four Corners 2* (Richards & Bohlke, 2012) were analyzed to determine the beginner and low intermediate reading comprehension ability from the MICAST perspective. Four Corners is aligned with the CEFR, which describes what learners can do at different proficiency levels and provides descriptors that support level-based decisions in materials selection and evaluation (Council of Europe, 2020). Each book consists of 12 reading comprehension passages whose titles are presented in Table 4.

Table 4. Titles of reading passages presented in the two textbooks

No	Four Corners 1	Four Corners 2
1	Names and Jobs	Free Time
2	Family and Friends	People's Profiles
3	Favorite Things	Where Would You Like to Go?
4	My Weekend	What a Home!
5	Online Fun	Don't Stress out!
6	Work and Study	Popular TV
7	Favorite Food	A Shopper's Paradise
8	A Great Place to Visit	The Best Place to Go
9	What's New?	Making a Difference
10	I Saw a Great Movie.	Restaurant Experiences
11	Travel Experiences	Musicians from around the World
12	Birthdays	Dreams and Aspirations4

Writers of Four Corners series have based their textbooks on Common European Framework of Reference for Languages: Learning, Teaching, Assessment. This framework explains comprehensively what language learners have to do in order to use language communicatively.

2.2 Procedures

The full texts of the 24 passages were typed and broken into their constituting schemata, i.e., words comprising the passages, based on their positions within the texts. These schemata were categorized one by one into three main domains including semantic, syntactic and parasyntactic and then they were assigned to some subcategories. The genera and species of these domains were specified and codified in Microsoft office excel (2007). During the process of codification, various inflected forms of a single schema were accounted as its tokens. For instance, the English schemata, *name* and *names* were counted as the token of the noun schema *name*. Assigning the type of a single schema was based on its meaning and syntactic role within the sequence in which it appeared in the text.

Schemata connected by a hyphen were also considered as a single schema type. According to Allen (1990) as cited in Khodadady (2008a) the hyphen used to combine two schemata into one, shows that the two connected schemata have a syntactic link with each other.

2.3 Data Analysis

The schemata were subsequently analyzed and classified in terms of their domains, the genera to which they belong, and the species they include. Then a Pearson Chi-Square test was used to investigate whether there was a significant difference among the schemata of the reading sections of FC1and FC2 in terms of their domains of semantic, syntactic and parasyntactic. SPSS version 16 was employed to run all statistical analyses.

3. Results

An analysis was performed on the total frequency of words used in the reading sections of both FC1 and FC2 and comparisons were subsequently made between the two. Since the total number of words comprising the reading sections of these books were not the same, percentage was employed to describe the data. As it can be seen in Table 5, the excess percent of words in FC2 equals 17.75 which means that the author of this book used more words compared to FC1.

Table 5. Total frequency of words in FC1 and FC2

Books	Frequency	Percent
FC1	1,795	41.1
FC2	2,570	58.9
Total	4,365	100.0

Following the analysis of the frequency of words in the reading sections of both textbooks, an analysis was conducted to determine the number of schema domain tokens employed in these sections. The results are presented in Tables 6 and 7 accounting for FC1 and FC2, respectively.

Table 6. Total frequency of words in FC1 and FC2

Domain	Frequency	Percent
Semantic	718	40.0
Syntactic	714	39.8
Parasyntactic	363	20.2
Total	1,795	100.0

As can be seen in Table 6, the whole content of the reading sections in FC1 consisted of 1,795 schemata tokens of which 718 are semantic (40%), 714 are syntactic (39.8%), and 363 are parasyntactic (20.2%).

Table 7. Domain tokens in FC2

Domain	Frequency	Percent
Semantic	1,117	43.5
Syntactic	1,068	41.6
Parasyntactic	385	15.0
Total	2,570	100.0

According to the results presented in Table 7, the whole content of the reading sections in FC2 consisted of 2,570 schemata tokens of which 1,117 are semantic (43.5%), 1,068 are syntactic (41.6%), and 385 are parasyntactic (15.0%).

A close examination of domain tokens in these textbooks reveals that the frequency of words in semantic and syntactic domains is nearly the same in each textbook. The number of semantic tokens in FC2 (n=1117) is more than the semantic tokens in FC1 (n=718). Similarly, the number of syntactic tokens in FC2 (n=1068) is more than that of FC1 (n=714). The difference in the total number of these tokens can refer to the fact that the total number of words used in the reading sections of FC2 was more than that of FC1. However, the frequency of parasyntactic tokens was nearly the same in both textbooks with total number of (n=385 and n=363) in FC2 and FC1, respectively. The difference between these domains is presented in Figure 1.
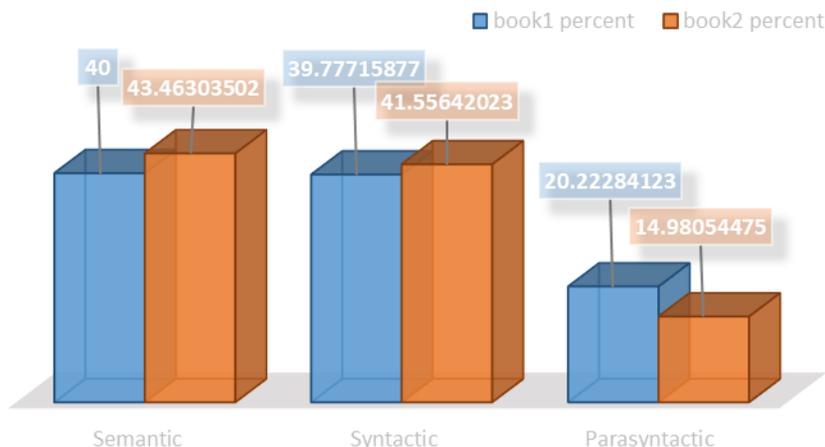
Figure 1. Difference between Domains of Reading Sections of FC1 and FC2

As presented in Figure 1, although FC1 and FC2 are different with regard to the schemata constituting their texts, but the percent with which each domain occurred throughout the whole texts are nearly the same. Semantic domain forms 40% and 43.4% of the whole schemata in FC1 and FC2, respectively. Syntactic domain forms 39.7% and 41.5% of the total schemata in FC1 and FC2, respectively. In terms of parasyntactic domain, as it can be seen from the presented data, the total percent occurrence of this domain is more than that of FC2, with 20.2% and 14.98% in FC1 and FC2, respectively.

A Pearson Chi-Square test was used to investigate whether there was a significant difference between the schemata of the reading sections of FC1 and FC2 in terms of their domains of semantic, syntactic and parasyntactic. The results of the test show that the difference in the number of semantic, syntactic and parasyntactic domain tokens is significant in these textbooks (p= 0.00 > 0.05). Therefore, it could be also statistically claimed that FC2 used significantly more schemata compared to its FC1 counterpart. Table 8 shows the results of Chi-Square test.

Table 8. Test statistics of schemata used in semantic, syntactic, and parasyntactic domains in FC1 and FC2

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	20.783[a]	2	.000
Likelihood Ratio	20.563	2	.000
Linear-by-Linear Association	15.116	1	.000
N of Valid Cases	4365		

As mentioned earlier, each schemata type consists of some genera. Table 9 presents the genera constituting the domains of each textbook along with their frequency and the percentage of their occurrence.

Table 9. Test statistics of schemata used in semantic, syntactic, and parasyntactic domains in FC1 and FC2

Genus Comparison		type of book		Total
		FC1	FC2	
Adjective	Count	107	151	258
	percent	6.0%	5.9%	5.9%
Adverbs	Count	11	16	27
	percent	.6%	.6%	.6%
Nouns	Count	419	614	1033
	percent	23.3%	23.9%	23.7%
Verbs	Count	181	336	517
	percent	10.1%	13.1%	11.8%
Conjunctions	Count	76	137	213
	percent	4.2%	5.3%	4.9%
Determiners	Count	269	336	605
	percent	15.0%	13.1%	13.9%
Prepositions	Count	179	315	494
	percent	10.0%	12.3%	11.3%
Pronouns	Count	124	193	317
	percent	6.9%	7.5%	7.3%
Syntactic verbs	Count	66	87	153

	percent	3.7%	3.4%	3.5%
Abbreviations	Count	98	58	156
	percent	5.5%	2.3%	3.6%
Interjections	Count	3	3	6
	percent	.2%	.1%	.1%
Names	Count	124	161	285
	percent	6.9%	6.3%	6.5%
Numerals	Count	85	49	134
	percent	4.7%	1.9%	3.1%
Para-adverbs	Count	53	111	164
	percent	3.0%	4.3%	3.8%
Symbols	Count	0	3	3
	percent	0.0%	.1%	.1%
total	Count	1795	2570	4365
	percent	100.0%	100.0%	100.0%

In FC1, the schemata tokens in semantic domain were 718 which consisted of 107 adjectives (6.0%), 11 adverbs (0.6%), 419 nouns (23.3%), and 181 verbs (10.1%). The syntactic domain which was identified to have 714 tokens consisted of 76 conjunctions (4.2%), 269 determiners (15.0%), 179 prepositions (10.0%), 124 pronouns (6.9%), and 66 syntactic verbs (3.7%). The parasyntactic domain had a frequency of 363 tokens consisted of 98 abbreviations (5.5%), 3 interjections (0.2%), 124 names (6.9%), 85 numerals (4.7%), 53 para-adverbs (3.7%).

In FC2, the schemata tokens constituting the semantic domain were 1,117 which consisted of 151 adjectives (5.9%), 16 adverbs (0.6%), 614 nouns (23.9%), and 336 verbs (13.1%). The syntactic domain with 1,068 tokens consisted of 137 conjunctions (5.3%), 336 determiners (13.1%), 315 prepositions (12.3%), 193 pronouns (7.5%), and 87 syntactic verbs (3.4%). The schemata in parasyntactic domain were 385 which consisted of 58 abbreviations (2.3%), 3 interjections (0.1%), 161 names (6.3%), 49 numerals (1.9%), 111 para-adverbs (4.3%), and 3 symbols (0.1%).

As it can be seen in the data presented in Table 8, the genera constituting each domain *i.e., semantic, syntactic, and parasyntactic* differed in terms frequency in each textbook. In all, the frequency of genera comprising domains of FC2 is more that than of FC1 except *pronouns, abbreviation,* and *numerals* that were employed more frequently in FC1 than FC2. From among the genera listed in Table 8, *nouns* had the highest frequency in both textbooks with total numbers of *419* and *614* in FC1 and FC2, respectively. Furthermore, the genera used less frequently compared to other genera in both textbooks were *interjections* and *symbols* both of which constituted the parasyntacttic domain. *Interjections* were used with *3* attestations in each textbook, and *symbols* had a frequency of *3* instances in FC2 while they were not observed in FC1 at all. The difference in percentage occurrence among different genera of FC1 and FC2 are presented in Table10.

Table 10. Comparison of percentage occurrence among genera of FC1 and FC2

Genus	FC1 percent	FC2 percent	Difference
Nouns	23.3	23.9	-0.55
Determiners	15.0	13.1	1.91
Verbs	10.1	13.1	-2.99
Prepositions	10.0	12.3	-2.28
Pronouns	6.9	7.5	-0.60
Names	6.9	6.3	0.64
Adjective	6.0	5.9	0.09
Abbreviations	5.5	2.3	3.20
Numerals	4.7	1.9	2.83
Conjunctions	4.2	5.3	-1.10
Syntactic verbs	3.7	3.4	0.29
Para-adverbs	3.0	4.3	-1.37
Adverbs	0.6	0.6	-0.01
Interjections	0.2	0.1	0.05
Symbols	0.0	.1	-0.12

The genus comparison among domains of the two textbooks are presented in Figure2.
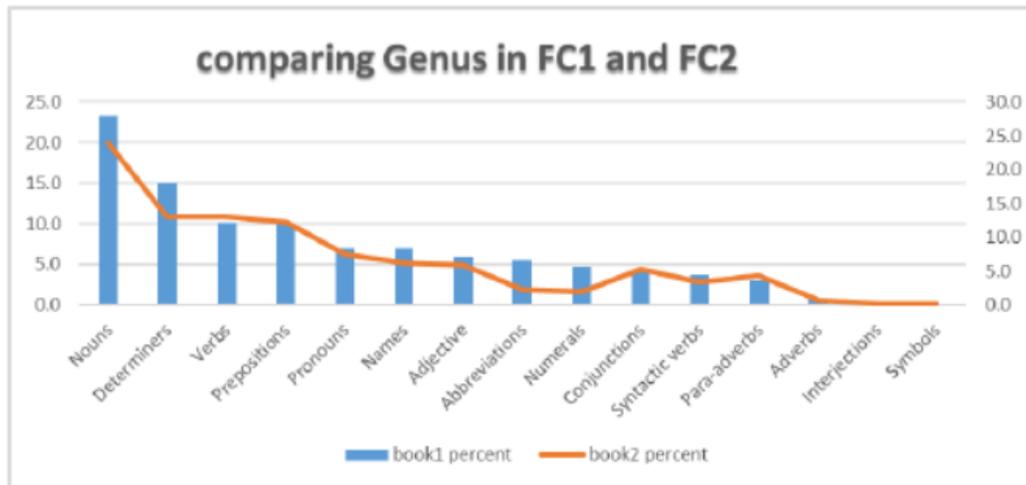
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Figure 2. Genus Comparison among Domains of the Two Textbooks

Also, a Pearson Chi-Square test was employed to investigate whether these two textbooks differed statistically in terms of the genera tokens used in their reading sections. The descriptive statistics indicated that reading passages of these books were significantly different from each other with regard to the genera constituting its domains ($p = .001 > 0.05$). Table 11 shows the results of Chi-Square test.

Table 11. Test statistics of genera tokens constituting the semantic, syntactic, and parasyntactic domains in FC1 and FC2

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	85.274[a]	14	.000
Likelihood Ratio	85.578	14	.000
Linear-by-Linear Association	11.547	1	.001
N of Valid Cases	4365		

As presented in Tables 1 to 3, each domain consists of some genera each of which includes some constituting species. The species comprising the genera were identified in each textbook. The frequency of species in each domain is explained in more details in the following paragraphs for each textbook separately.

3.1 Species Types of Semantic Domain in FC1

The semantic domain of FC1 included 24 species. The largest number of species comprising semantic domain belonged to simple noun species (18.3%) while the least number of species forming the semantic domain belonged to phrasal verbs (present participle) with a percentage occurrence of (0.1%). In the semantic domain of FC2, the six species of noun genus had 418 types. The simple noun was the most frequently used species (18.3%) and the least frequently used species were adjectival and nominal nouns with only one attestation for each. The eight species of verb genus included 181 types. The largest number belonged to simple verbs (5.4%) and the least number belonged to phrasal verbs (present participle) having only one attestation. The eight species of adjective genus consisted of 111 types. The most frequently occurring adjective type was simple adjective (3.4%) and the least frequently occurring adjectives were dative and superlative adjectives with only one attestation for each type. The three species of adverbs i.e., complex, derivational, and simple had 12 types with the same percentage of occurrence (0.2%).

3.2 Species Types of Syntactic Domain in FC1

The syntactic domain of FC1 consisted of 21 species. The largest number of species in syntactic domain belonged to simple prepositions (9.7%) while the least number belonged to complex preposition and specified pronoun each occurred only once in the whole content of the reading sections of FC1. The three species of preposition genus had 179 types. The most frequently used type was simple preposition (9.7%) and the least frequently used was complex preposition with only one attestation. The six species of determiner genus included 269 types out of which specifying determiners had the largest number (7.1%) and demonstrative determiners had the least number (0.5%). The seven species of pronoun genus consisted of 124 types. The largest number belonged to subject pronoun (4.8%) and the least number belonged to specified pronoun with only one attestation. Conjunctions were identified to have only one species i.e., simple conjunction with 76 types constituting 4.2% of the whole content. The four species of the syntactic verb genus had 66 types. The largest number belonged to present auxiliary (3.2%) and the least number belonged to present phrasal auxiliary with only two attestations.

3.3 Species Types of Parasyntactic Domain in FC1

The parasyntactic domain of FC1 included 15 species. The largest number of species in parasyntactic domain belonged to single names (5.6%) while the least number belonged to manner and prepositional para-adverbs with only one attestation for each type. The three species of name genus had 140 types. The largest number belonged to single names (5.6%) and the least number belonged to

organizational names (0.3%). The two species of abbreviation had 98 types in which abbreviation was used 97 times and acronym was used with only one attestation. The two species of numeral had 69 types. The digital numeral had a percentage occurrence of (3.7%) and the year numeral had a percentage occurrence of (0.1%) with only two attestations. The seven species of para-adverb genus had 41 types. The largest number belonged to intensifying para-adverbs (1%) and the least number belonged to manner and prepositional para-adverbs with only one attestation for each type.

3.4 Species Types of Semantic Domain in FC2

The semantic domain of FC1 included 27 species. The largest number of species in syntactic domain belonged to simple nouns (18.2%) while the least number of species forming the semantic domain belonged to agentive, agentive complex, nominal adjectives and derivational and phrasal verbs with total frequency of 1 for each species. In the semantic domain of FC2, the six species of noun genus had 614 types that the largest number of these noun types referred to simple nouns and the least number referred to complex and nominal nouns. The ten species of verb genus had 373 types the largest number of which belonged to simple verbs while the least number belonged to derivational and phrasal verbs. The ten species of adjective genus had 151 types that the largest number belonged to simple adjective and agentive, agentive complex, and nominal had the least number of occurrence. The three species of adverb genus had 16 types the largest number of which belonged to derivational adverb and the least number belonged to complex and simple adverbs each of which had a frequency occurrence of 2.

3.5 Species Types of Syntactic Domain in FC2

The syntactic domain of FC2 consisted of 21 species. The largest number of species in syntactic domain belonged to simple prepositions (11.7%) and the least number belonged to interrogative and possessive pronouns each had a frequency of 1 in the whole content of reading sections of FC2. The three types of prepositions included 309 types in which simple prepositions had the largest frequency (11.7%) and complex prepositions had the least frequency (0.1%). The six species of determiners consisted of 342 types, the largest number of which belonged to specifying determiners (7.8%) while the least number belonged to ranking determiners (0.1%). Conjunctions that were only occurred in simple form had 136 types. The eight species of pronoun genus included 193 types. The largest number of these pronoun types belonged to subject pronouns (4.7%) and the least number belonged to interrogative and possessive pronouns with only one attestation for each. The four species of the syntactic verb genus had 87 types. The largest number belonged to present auxiliary (2.4%) and the least number belonged to modal (past) with a percentage occurrence of (0.1%).

3.6 Species Types of Parasyntactic Domain in FC2

The parasyntactic domain of FC2 included 19 species. The largest number of species in parasyntactic domain belonged to single names (4.9%) and the least number belonged to alphabetic numerals with only one attestation. The five species of the name genus had 161 types. The largest number belonged to single names (4.9%) and the least number belonged to title names (0.1%). Abbreviations were identified to have 58 types in the whole content of FC2. The three species of numeral genus consisted of 49 types. The most frequently used numerals were digital numerals (1.6%) and the least frequently used one was alphabetic numeral with only one attestation. The eight species of para-adverb genus included 111 types. The intensifying para-adverbs had the largest frequency (1.3%) and the exemplifying para-adverbs had the least frequency (0.1%). The symbol genus had only one type i.e., conventional with only 3 attestations.

4. Discussion

Recently a number of research have evaluated available textbooks with regard to their effectiveness from different perspectives. Few research, however has focused on the whole content forming the textbooks to make them as effective as possible. To the present researchers, it was highly significant to investigate and evaluate the content comprising the two textbooks i.e., FC1 and FC2, through making comparison between the elements constituting their texts. This aim was achieved based on the micro structural approach of schema theory.

Anderson (1977) who is an educational psychologist had an essential role in introducing the schema theory to the educational setting. He proposed that schemata are considered as a form of manifestation for complicated knowledge and can account for how the acquisition of new knowledge is influenced by old knowledge. Following this, schema theory was used as a means for comprehending and describing the reading process, where it served an important role for bottom-up and top-down approaches toward learners' reading comprehension abilities. It is based on this notion that the reading comprehension ability is dependent not only on understanding each schema (bottom-up), but also finding out the semantic, syntactic, and discoursal relationships of that schema with other schemata forming the text (top-down). Research in reading has consistently shown that comprehension depends on both text features and reader knowledge, and successful understanding requires building coherent meaning beyond individual sentences (Duke, Ward, & Pearson,2021).

Schema theory is considered as a means to explain and facilitate reading comprehension process through highlighting the fact that texts are made from different schemata (Xue, 2019). In order to understand a text, the reader should process not only the linguistic structure of the text, but also the cognitive structures of its constituting schemata (Khodadady, et al., 2012) Schema theory makes it possible to explain the schemata forming the text both linguistically and cognitively through dividing the constituting schemata into different domains.

Domain refers to a scope of knowledge in brain having a meaningful structure and is considered as a subcategory of the schema. Schemata are categorized into three main domains i.e., semantic, syntactic, and parasyntactic. These domains work together to express a given concept and make it easier for readers to comprehend a given text more effectively. The proportion of the occurrence of each

domain may differ significantly from each other in a text. For example, FC1 consisted of 638 schemata types 361, 86, and 191 were semantic, syntactic, and parasyntactic, respectively. The total number of schemata types observed in FC2 was 868 attestations that semantic, syntactic, and parasyntactic domains had frequencies of 581, 104, and 183, respectively.

4.1 Semantic Schemata

The semantic schemata are considered as open-class words consisting of four genera, i.e., adjectives, adverbs, nouns, and verbs. These types of schemata are known as lexical words or content words because they form a large amount of the meaning of a given sentence. Out of 1,795 schemata tokens identified in FC1, the semantic domain had the highest frequency i.e., 718 schemata of all domains. The noun genus occupied a larger portion of semantic domain about 419 attestations, compared to other genera i.e., adjectives, adverbs, and verbs. The similar results were observed for FC2, that from among the 2,570 schemata tokens, semantic domain occurred with a total frequency of 1,117 schemata that from among its constituting genera, the noun genus was occurred with a total frequency of 614 considered as the most frequently occurring schemata in semantic domain. Noun genus includes eight species *i.e., adjectival, complex, compound, conversion, derivational, gerund, nominal,* and *simple nouns.* According to the findings of the present study, FC1 included all types of nouns except *conversion* and *gerund* nouns and FC2 had all types of noun except *adjectival* and *conversion* nouns. In the following, other genera of semantic schemata used in readings of FC1 and FC2 are presented.

In FC1, adjectives had a frequency of 107 tokens in the semantic domain. The genus of adjectives consists of nine species, *i.e., agentive adjective, agentive complex adjective, comparative adjective, complex adjective, dative adjective, derivational adjective, nominal adjective, simple adjective,* and *superlative adjective*, that all were observed in the semantic domain of the texts. Another genus constituting the semantic domain is the genus of adverbs that had a total frequency of 11 schemata. The genus of adverbs encompasses five species, *i.e., comparative adverb, complex adverb, derivational adverb, simple adverb,* and *superlative adverb*. From among these 5 all were observed except comparative and superlative adverbs. The verb genus had a frequency of 181 attestations. It consisted of five species *including complex, derivational, phrasal, simple,* and *slang*. Schemata forming the texts of FC1 were identified to include all, *except slang* and *derivational*.

In FC2, adjectives were identified to have a frequency of 151 tokens. From among the species forming the genus of adjectives all were observed except *agentive adjectives, comparative adjectives,* and *nominal adjectives.* Similar to FC1, with regard to the genus of adverb, all were identified except comparative and superlative adverbs. A total frequency of 336 attestations was estimated for the verb genus and it was found that all verb types were used in schemata of FC2, except s*lang*.

Syntactic schemata

The syntactic schemata which are known as closed-class words or function words consist of five genera including *conjunctions, determiners, prepositions, pronouns,* and *syntactic verbs*. This class of words does not convey any absolute meaning, unless it appears in a sentence in order to gain meaning through interaction with other words. The syntactic schemata occurred with frequencies of 714 and 1,068 schemata tokens in FC1 and FC2, respectively. The genera of syntactic schemata used in the whole contents of FC1 and FC2 are presented in the following paragraphs.

One of the constituting genera of syntactic domain is the genus of conjunctions. Its function is to connect words or groups of words to each other. In FC1, conjunctions were used 76 times throughout the whole schemata identified in texts of FC1. Species forming the genus of conjunction are *phrasal* and *simple* conjunctions that only simple conjunctions were used. Determiners are another genus forming the syntactic domain with a frequency of 269 in the texts of FC1. Determiners consist of seven species including *demonstrative, interrogative, numeral, possessive, quantifying, ranking,* and *specifying determiners* all of which were observed except *interrogative* determiners. Prepositions having four species, *i.e., complex, compound, phrasal*, and *simple preposition* were repeated with 179 attestations with only *phrasal* and *simple* types. With regard to pronouns which substitute a noun or a noun phrase, 124 attestations were observed. The genus of pronouns includes eight species*, i.e., demonstrative, interrogative, object, possessive, reflexive, relative, subject,* and *unspecified pronouns* that all were observed in the schemata except *possessive* and *reflexive* ones. In terms of syntactic verbs, a total number of 66 attestations were identified, encompassing species such as *past auxiliary, present continuous auxiliary, present auxiliary, future auxiliary, past phrasal auxiliary, past perfect phrasal auxiliary, modal (present), and modal (past).* From among these types, *present* and *past auxiliary* had the highest frequency. Following this, *present phrasal auxiliary* was the most frequently used syntactic verb.

Further analysis was performed to investigate the genera of syntactic domain in FC2 as well. Conjunctions were repeated 137 times only in simple type. Determiners had a frequency of 336, with the occurrence of all types, except *interrogative* ones. Prepositions had a frequency of 315 that similar to FC1, were only of *simple* and *phrasal* types. All types of species of pronouns were used with a total frequency of 193 attestations. In terms of syntactic verbs having frequency occurrence of 87, only *present* and *past* types were used repeatedly.

4.2 Parasyntactic Schemata

The parasyntactic domain consists of two closed-class words including para adverbs and particles and five open class words including abbreviation, interjection, names, numerals, and symbols. Parasyntactic schemata should attach to syntactic schemata in order to convey a specific meaning. The genera of parasyntactic schemata of FC1 and FC2 are presented in the following paragraphs.

One of the constituting genera of syntactic domain is the abbreviation genus which are known as a shortened form of a word or a phrase having two species types *i.e., abbreviation* and *antonyms.* In FC1, it was found to have a frequency of 98 by employing its two species. The

abbreviation employed in the texts of FC1, were mostly negative verbs and auxiliaries and subject-verb contractions (*e.g., can't, isn't, didn't, it's, they're*). Interjections referring to words conveying particular emotion or strong feelings such as fear, sadness, joy, etc., are another genus forming the parasyntactic domain. It includes one species which is interjection and was identified to have a frequency of 3 attestations *(e.g., yay, how, and please).* Names that are known as specific and unique nouns were used 124 times across the texts. Names include three species *i.e., full name, single name,* and *title name* among which single names were used more frequently. *(e.g., David, Julia, Lisa, Alan, etc.)* Numerals are nouns or symbols representing numbers and are another constituting genus of parasyntactic domain having four species*, i.e., alphabetic, digital, roman,* and *year.* They had a total frequency of 85 in forms of *digital* and *year* numerals. Digital numbers were used more frequently than years. Para-adverbs indicate place, location, time, etc., and encompass eleven species, *i.e., additive, emphatic, frequency, intensifying, interrogative, manner, negation/approval, prepositional, referential, time, and location.* A total number of 53 attestations were identified among which *emphatic, interrogative*, and *location* para-adverbs were not observed at all. Particles are parasyntactic schemata following certain verbs to indicate a specific action. They consist of two species i.e., *simple* and *complex* having a total frequency of 169 with the use of simple particles more than complex ones. The symbol genus of parasyntactic domain refers to a letter or a mark representing an abstract meaning. Symbols may refer to different entities that cannot stand by themselves. In general, symbols consist of two species i.e., *conventional* and *scientific*. The results of the analysis showed that no symbols were used in the texts of FC1.

Further analysis was performed to investigate the genera of parasyntactic domain in FC2 as well. Abbreviations were repeated 58 times using both types of species. Similar to FC1, the abbreviations used in FC2, were negative verbs and auxiliaries and subject verb contractions *(e.g., don't, doesn't, I'm, it's, etc.)* Determiners had a frequency of 336, with the occurrence of all types, except *interrogative* ones. Prepositions had a frequency of 315 that similar to FC1, were only of *simple* and *phrasal* types. All types of species of pronouns were used with a total frequency of 193 attestations. In terms of syntactic verbs having frequency occurrence of 87, only *present* and *past* types were used repeatedly. With regard to interjections, having a total frequency of 3 these examples were identified i.e., *hey, how,* and *please.* Names were investigated to have a frequency of 161 with only *single* and *full* names occurrence. Numerals were found to have 49 schemata, in forms of *digital, year,* and *alphabetic*. Then, para-adverbs were identified to have a frequency of 111 in forms of all species except *interrogative, manner,* and *prepositional.* Particles were occurred 294 times having different schema types such as *to, at, in, on, etc.* Symbol genus in FC2 were conventional with a total frequency of 2 and 1 for $ and %, respectively.

Both FC1 and FC2 were found to have a tendency to use some particular species that were rare or almost infrequent in the other textbook. According to the results of the analysis, from among the 718 schemata types observed in FC1, 616 attestations were used uniquely by its author (i.e., they were not found in the texts of FC2). On the other hand, the unique schemata found in FC2 were 1016 attestations out of a total number of 1,118 schemata types. The above results show that the two textbooks share about 102 schemata which make up 14.2% and 9.1% of all schemata in FC1 and FC2, respectively. Examples of the schemata types shared by the two textbooks include big, blue, build, busy, children, clothes, come, cook, country, family, famous, etc.

Interestingly, FC1 and FC2 shared mostly semantic schemata types with each other and were almost unique in terms of using syntactic and parasyntactic schemata types compared to semantic schemata types. As mentioned before, semantic schemata as a domain consist of four genera including verbs, nouns, adjectives and adverbs. The findings revealed that from among these genera, the two textbooks used common verb schema types more than other genera. Examples of these types include buy, call, come, cook, do, find, get, go, have, like, love, make, etc. Examples of other genera include animals, children, friends, country, family, map, name, etc. for nouns; big, busy, famous, delicious, funny, good, short, etc. for adjectives; and early, long, usually, etc.

In terms of syntactic schemata types the schemata used uniquely in FC1 included *can't, in front of, isn't, our, than, these, up, us,* etc. The distinct schemata types used in FC2 included *among, him, it, most, much, own, that,* etc. In terms of parasyntactic schemata types the schemata used uniquely in FC1 included *Brazil, California, DVD, for example, third*, etc. The distinct schemata used in FC2 included *ago ATM, British, Dr., first, no,* etc.

Language learners may read a text for different purposes including gaining a specific piece of information, detailed understanding and etc. As mentioned before, Four Corners series are developed based on the Common European Framework. FC1 and FC2 are classified as levels A1 and A2, respectively. According to Common European Framework, texts classified in level A1 should include the following elements in order that language learners can comprehend the text more effectively. Texts should be very short and simple, make use of single phrase at a time, and includes basic words and phrases. The results of the analysis in the current study reveals that texts of FC1 (referred to as level A1) were occupied mostly with nouns and easy words and phrases. With regards to the texts classified as A2, Common European Framework include the following elements. According to this framework, A2 level texts should be short and simple, include familiar matters consisting of every day or job-related language. Also, these texts are mostly consisted of international words. A close examination of the texts in FC2 confirms the notion of using international words with a considerable frequency of occurrence such as bank, hotel, museum, restaurant, taxi, TV, etc. All these properties are explained through the micro structural approach which considers words and phrases constituting given texts as building blocks needed for explaining the reading comprehension ability of language learners besides explaining how to teach a given text.

FC2, compared to FC1 is designed to be used for language learners with higher English language proficiency; therefore, it is not surprising that FC2 included more schemata types and tokens in its reading sections. In contrast to FC1, the species constituting the genera of FC2 were more sophisticated and advanced to meet its learners' needs.

5. Conclusion

The present study has offered a comparative evaluation of the reading sections of *Four Corners 1* and *Four Corners 2* by applying a micro structural approach of schema theory introduced by Khodadady (2008a). The study has provided some new information about the use of schemata in the reading sections of these textbooks. The findings of the current research provided further evidence to confirm that due to the fact that FC2 is used for higher level students compared to FC1, it should include more variety of schemata types and tokens. Also, it showed that nouns were the most frequently employed genera in syntactic domain while determiners and prepositions were the most frequently employed genera in syntactic domain. The names were, however, the most frequently occurring genus in parasyntactic domain.

The pedagogical implication of the findings of the present study is that they are likely to provide the material developers and language teachers with essential information when making decisions about the course syllabus which they intend to follow in their classrooms, and can help them prioritize the instruction of each domain based on their frequency and relative impact on the language and the specific needs of their group of learners (Jian-ping & Li-sha, 2016). Also, those who are involved in foreign language teaching and learning, can highly benefit from the findings of this study. It is recommended that teachers consider schemata as basic units of language that through their interactions sentences are made in order to make their teaching task more interesting and feasible.

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The authors declare that they have no competing interests.

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