

Quantitative Statistics and Analysis of Exercise Design in Comprehensive Chinese Course for Traditional Chinese Medicine

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Abstract

This paper takes Comprehensive Chinese Course for Traditional Chinese Medicine as the research object, and explores the scientificity, rationality and effectiveness of its exercise design through the combination of quantitative statistics and qualitative analysis. The study finds that the textbook has sufficient exercise quantity, rich exercise styles and comprehensive coverage of language elements, which conforms to the teaching principle of "explaining concisely and practicing more". At the same time, the exercise arrangement follows the cognitive law from easy to difficult and from controlled to open, which can effectively promote learners' mastery of professional Chinese for traditional Chinese medicine.

Keywords: chinese for traditional chinese medicine, exercise design, quantitative analysis

1. Introduction

The Comprehensive Chinese Course for Traditional Chinese Medicine (2013) selected in this paper is published by Beijing Language and Culture University Press. It is designed for "foreign students with a certain foundation in Chinese who are interested in learning traditional Chinese medicine-related majors, as well as traditional Chinese medicine enthusiasts". This textbook is a preparatory textbook, so the teaching of professional knowledge of traditional Chinese medicine will not be too in-depth, and the teaching purpose is mainly to introduce basic concepts. At the same time, "having a certain foundation in Chinese" determines that its teaching objects are foreign students who are preparing to enter Chinese universities to study traditional Chinese medicine and have a Chinese Proficiency Test score of level 3 or above.

The learning focus of this book is "professional terms, sentence patterns and knowledge of traditional Chinese medicine". There are a total of 30 lessons, each consisting of four class hours, plus an extra-curricular learning content - the Traditional Chinese Medicine Life Hall, which contains simple traditional Chinese medicine methods and small knowledge to enhance students' learning interest.

This paper aims to conduct a quantitative analysis of the exercise styles in Lessons 1 - 10 of this book, so as to examine the particularity and rationality of the exercise styles in the "Chinese for traditional Chinese medicine" textbook.

2. Preparation for Quantitative Analysis

2.1 "Exercises"

We know that there are four basic stages in teaching: perception, understanding, consolidation and application, and "exercises" can be carried out in each of these four stages, corresponding to different learning purposes. For the convenience of statistical operation, this paper believes that any content with task requirements, action instructions and operability is an exercise. According to this definition, we exclude the questions in the "review" and "summary" sections and the non - operable questions in the "warm - up" section (such as simple knowledge explanation, cultural background introduction, illustration or example sentence display) from the scope of "exercises". The reason for adopting such an operation standard is that this paper believes that "warm - up" is a "preparatory exercise" and belongs to the front - end link of the exercise system.

2.2 Types and Statistical Units of "Exercise Styles"

When summarizing exercise styles, this article does not strictly follow the question terminology in the textbook but divides them according to the exercise items. For example, some questions use the form of asking questions to practice students' understanding of vocabulary: "Find the words containing '疹' in the text and explain their

meanings." Finally, 14 exercise styles are summarized: answering questions, filling in the blanks, retelling, choosing the right words to fill in the blanks, reading aloud, finding synonyms and antonyms, explaining words, completing sentences, connecting lines, completing charts, judging true or false, imitating, discussing, and writing.

For the choice of units when counting exercise styles, both filling in the blanks and retelling of the text content are counted by sentences. For "reading aloud", it specifically depends on the requirements of the questions. For reading aloud words, the unit is the number of words, and for reading aloud the text, the unit is paragraphs. There are also filling - in and text - sorting exercises designed in the form of charts in this book. This type of exercise is classified into the "completing charts" style and counted by "blanks". Both "verbal expression" and "writing expression" are counted by times.

Sometimes, for the same exercise style, if teachers and learners use it differently, its functions will also be different. When counting exercise styles in this article, we try to classify the exercise styles according to the question requirements and the instructions on the use of exercises by the compiler of the book. According to the "Instructions for Use" of the book, teachers should assign tasks in the "extracurricular activities" section after the second class for students to complete, so as to encourage them to go out of the classroom for practical practice. The classroom teaching in the fourth class mainly guides students to discuss the activity structure, and finally assigns the written content as homework for each lesson. Therefore, this section is classified as "writing" in terms of exercise styles but as "communication" and "discourse" in terms of language elements.

The classroom discussions in some lessons of this book also require writing exercises. For example, the classroom discussion in the fourth lesson: "Do you know Chinese qigong? What kind of qigong do you know? Look up relevant information about qigong and discuss it with Chinese friends, then write it down below. (About 150 words)" requires written writing expression while discussing. So this exercise style is not only "discussion" but also "writing".

2.3 Selection of Language Elements and Statistical Units

Considering that the content of the book is mainly "professional Chinese medicine terms, sentence patterns, and knowledge", in terms of the selection of language elements, this article sets five aspects: "vocabulary, sentences, discourse, pronunciation, and communication". "Sentences" are used instead of "grammar" because the teaching objects of this book have a certain foundation in Chinese, and the textbook rarely involves basic Chinese grammar knowledge but more professional sentence patterns in Chinese medicine. The commonly set "Chinese characters" element is excluded because there is no content specifically for Chinese character teaching in the book.

Regarding what content belongs to "vocabulary, sentences, and discourse", the exercise formats that are relatively easy to handle are as follows: "synonyms and antonyms, explaining words" belong to the "vocabulary" element, "completing sentences" belongs to the "sentence" element, and "writing" belongs to the "discourse" element. However, which specific language element the "answering questions" in the exercise format belongs to depends on what is specifically asked. This makes the distinction rather vague because the questions in the textbook can be open - ended or restrictive. For some restrictive questions, we can clearly know from the question whether we should answer with vocabulary or sentences, and even which content we can use to answer, so they are relatively easy to classify. But for completely open - ended questions, although we can preset the answers according to the intention of the question, we cannot specifically classify them. Regarding this difficult problem, this article believes that in Chinese, both words and phrases are sentence - forming units. As long as there are obvious pauses before and after, they can become answer sentences, while discourse is a larger unit than sentences, involving the relationships between sentences and between paragraphs. Therefore, it is more reasonable to classify the exercise format of "answering questions" into the "sentence" element. At the same time, we also classify "filling in the blanks according to the text content" and "retelling the text" into the "sentence" element.

As for the selection of statistical units, it should fully follow the units used in the statistics of exercise formats. Therefore, in the last two tables, the total quantity of each topic should be one more for language elements than for exercise formats (if there is no communication element, they remain the same, for example: Lesson 5).

3. Quantitative Statistics and Analysis

3.1 Statistics and Analysis of the Number of Questions

Table 1. Statistics Table of the Number of Questions and Exercise Styles

EXERCISE STYLE	ANSWER QUESTIONS	FILL IN THE BLANKS	RETELL	FILL IN THE BLANKS	READ ALOUD	SYNONYMS AND ANTONYMS	EXPLANATION	COMPLETION	DRILL	COMPLETION	JUDGMENT	IMITATION	DISCUSSION	WRITING	TOTAL NUMBER OF QUESTIONS PER LESSON
UNIT	Question	Sentence	Sentence	Word	Word/Paragraph	Correct	Word	Sentence	Line	Blank	Question	Time	Time	Time	
L1	12	11	4	0	22	24	6	6	5	12	3	0	1	1	107
L2	11	8	3	5	18	0	0	0	0	26	3	0	1	1	76
L3	14	10	7	0	18	0	0	5	9	0	3	0	1	1	68
L4	13	13	8	5	20	0	8	0	0	0	3	0	1	2	73
L5	10	13	9	6	25	4	0	4	0	9	4	0	1	2	87
L6	14	9	6	0	22	0	10	0	4	0	4	1	1	2	73
L7	14	10	7	0	32	0	24	4	0	0	3	0	1	1	96
L8	12	8	5	9	20	0	0	0	6	4	7	0	1	1	73
L9	16	16	9	8	24	0	5	0	0	0	4	0	1	1	84
L10	9	10	6	7	20	0	0	0	0	17	3	0	1	1	74
FLAT	12.5	10.8	6.4	4	22.1	2.8	5.3	1.9	2.4	6.8	3.7	0.1	1	1.3	81.1
AVERAGE	15.1%	13	7.89	4.93%	27.25%	3.45%	6.54%	2.34%	2.	8.38	4.	0.12	1.23	1.	100
PROPORTION			96						96	96	56%			60%	100%
TOTAL QUANTITY	125	108	64	40	221	28	53	19	24	68	37	1	10	13	811

According to the statistics of the number of questions, we found that the average number of questions per lesson is 81.1. The course type of this book is positioned as a comprehensive course, so it is quite reasonable that there are a relatively large number of in - class exercises. Zhou Jian and Tang Ling (2004) [1] believe that "providing a sufficient amount of exercises plays a crucial role in helping students transform their knowledge of Chinese rules into Chinese expression skills." Therefore, a large number of questions meets the current demand for "a large quantity of questions."

Meanwhile, they believe that "it is more appropriate to keep the ratio of the time spent on after - class exercises in the comprehensive course to the time spent on classroom teaching at around 1:1." Except for the last "writing" exercise in this book, which is clearly indicated as homework for students to complete after class, other exercises are regarded as classroom exercises. If we count the time for text explanation and vocabulary and sentence pattern

explanation as teaching time, and the time for doing exercises as "after - class exercise" time, then the number of questions in this book meets the level of about 1:1 mentioned by Zhou Jian and Tang Ling (2004) [1].

We found that except for the texts, almost all the other parts of this book consist of exercises. This also conforms to what is stated in the "Instructions for Use" of this book, that is, learners can either learn this book through 90 hours of classroom study or through self - study.

3.2 Analysis of Exercise Styles

The exercise styles that account for a relatively large proportion in the total number of questions are: reading aloud, answering questions, filling in the blanks, and completing charts. The first two exercise styles have the largest number of questions. For the former, the statistical unit when reading words is the word. Generally, there are about 20 new words in each lesson, and with the reading of text paragraphs, its average value is relatively high; for the latter, it appears in many links. It appears in the "warm - up, text learning, classroom discussion, and extended reading" links of each lesson, and the number of questions is not small, so the statistical data is relatively large. It is quite common for filling in the blanks to be an exercise style with a large number of questions. It is worth noting that the number of questions in the "completing charts" exercise style in this book is relatively large and it appears 5 times in the first 10 lessons. Since this book mainly focuses on "Chinese medicine professional terms, sentence patterns, and knowledge" which are highly logical, it is a good way to help international students who are new to Chinese medicine understand and memorize Chinese medicine professional terms in the form of charts. For example, in the lesson about "Five Elements", the "Five - Element System Diagram" is used to help them learn and practice new words.

The exercise styles with a relatively small proportion in the statistical results are: imitation, discussion, and writing. "Imitation" only appeared once in the "Learning and Practicing Traditional Chinese Medicine Professional Terms" of Lesson 6. Since the teaching content of this lesson is the "Four Diagnostic Methods" for actual medical operations, which is highly operable, arranging a "simulated" communication activity for students here not only helps students understand "inspection, auscultation and olfaction, inquiry, and palpation" but also facilitates clinical application. The proportion of "discussion and writing" is small because their statistical unit is "times", and their proportion is still quite large in the actual learning and teaching process.

Table 2. Number of occurrences of exercise styles in Lessons 1 - 10

EXERCISE	ANSWER	FILL IN	RETELL	FILL IN	REWRITE	SYNOPSIS	EXPLANATION	COMPLETION	DR	COMPLETION	JU	IMITATION	DISCUSSION	WRITING
STYLE	QUESTIONS	THE BLANKS		THE BLANKS	ALPHABET	AND ANTONYMS	NOUNS	SENTENCES	LINE	CHARACTERS	E	ATE	CUS	ITE
		NKS		NKS	D	NYMS	DS		TO		UE			
				WIT					MA		OR			
				H					TC		FA			
				THE					H		LS			
				GIV							E			
				EN										
				WO										
				RDS										
FREQUENCY OF APPEARANCE OF THE FORM	10	10	10	6	10	2	5	4	4	5	10	1	10	10

Table 3. Statistical table of the distribution of exercise styles for Lessons 1 - 10

TOTAL TYPES OF EXERCISES	L1	L2	L3	L4	L5	L6	L7	L8	L9	L10	UNIFORM DISTRIBUTION	PERCENTAGE OF THE TOTAL TYPES
14	12	9	9	9	11	10	9	11	9	9	9.8	70 %

Based on the above table, we can find that the main question types that appear in each lesson of this textbook are: answering questions, filling in the blanks, retelling, reading aloud, judging true or false, discussing, and writing; the secondary question types that appear randomly according to the content of each lesson are: filling in the blanks with given words, finding synonyms and antonyms, explaining words, completing sentences, matching, completing charts, and imitating. Among the secondary question types, those with a high frequency of appearance are: filling in the blanks with given words, explaining words, and completing sentences; those with a low frequency are: finding synonyms and antonyms, and imitating. The main question types are related to the curriculum content arrangement of this textbook and are the exercises that need to be carried out in each lesson, covering the four skills of listening, speaking, reading, and writing. "Finding synonyms and antonyms" and "imitating" appear the least frequently, but they are the exercise forms that best match the content of the current lesson. The combination of the main and secondary exercise designs is appropriate. The exercise styles in each lesson do not change much, maintaining a basic framework, which gives students a certain sense of familiarity when doing exercises and facilitates them to establish a good knowledge - learning process. At the same time, new question types can be flexibly added or removed according to the content of the current lesson, so that students will not feel tired of the exercise styles.

According to the statistics, we have summarized 14 types of exercise styles and also counted the distribution of exercise styles in each lesson. From the results, the average distribution of exercise styles in each lesson is 9.8 types, accounting for 70% of the total. Li Shaolin (2003) [2] believes that "the total number of exercise styles is best equal to or slightly more than the distribution of exercise styles" and "it is ideal to streamline the total number of exercise styles to about 10". According to this standard, the distribution of exercise styles in this book is relatively reasonable.

3.3 Statistics and Analysis of Language Elements

Figure 4. Quantitative statistical table of language elements in Lessons 1 - 10

	VOCABULARY	SENTENCE	DISCOURSE	COMMUNICATION	PRONUNCIATION	
L1	37	46	1	2	22	108
L2	33	23	1	2	18	77
L3	2	46	1	2	18	69
L4	15	35	2	2	20	74
L5	19	40	2	1	25	87
L6	16	31	2	3	22	74
L7	25	37	1	2	32	97
L8	17	34	1	2	20	74
L9	19	39	1	2	24	85
L10	26	26	1	2	20	75
AVERAGE	20.9	35.7	1.3	2	22.1	82
PROPORTION	25.49%	43.54%	1.59%	2.44%	26.95%	100%
TOTAL	209	357	13	20	221	820

From the above table, it can be found that vocabulary, sentences, and pronunciation are the language elements with relatively large proportions. The components of the pronunciation element are very clear, mainly the words to be read fluently and the paragraphs to be read aloud in each lesson. In fact, while the textbook requires students to read the words fluently, it also requires them to understand the words. So the statistical quantity of the vocabulary element should be the largest. However, to avoid double - counting, it is counted in the pronunciation element. Therefore, the actual proportion should be: vocabulary > sentences > pronunciation. Secondly, the statistics of "discourse" in the table are relatively strict, only including the writing part, resulting in its low proportion. But in fact, "retelling the text" and "extracurricular reading" are also exercises for students' discourse understanding. These parts are all classified into the "sentence" element during the statistics, which is also the

reason why the proportion of sentences is the highest. Generally speaking, from vocabulary to sentences to discourse, the textbook follows the principle of "step - by - step progress", progressing layer by layer from smaller language units to larger language points, covering exercises for each language unit, which is relatively comprehensive and in line with the positioning of the teaching target of this book. In addition, this textbook focuses on guiding students to the ultimate goal of language learning - communication. Almost every lesson has 2 - 3 parts (classroom discussion, writing, imitation) related to communication. Such an arrangement helps students apply what they have learned to practice and in turn helps them better learn the language.

4. Conclusion

Through the above quantitative analysis, the following conclusions can be drawn: The exercise arrangement of this textbook is scientific and reasonable, which can effectively promote learners' mastery of Chinese for traditional Chinese medicine majors. The research shows that the textbook exercises are characterized by sufficient quantity, diverse forms, and step - by - step progress, fully reflecting the teaching principle of "explaining concisely and practicing more". In terms of language elements, the textbook focuses on the training of vocabulary and sentence patterns, and at the same time cultivates learners' communication ability through tasks such as discussion and writing. It is worth noting that the textbook innovatively uses visual means such as charts to help learners understand traditional Chinese medicine concepts. This design is especially suitable for the teaching of professional terms. However, there are relatively few exercises at the discourse level, and relevant training can be appropriately increased.

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