

Interdisciplinary Analysis in Reading Texts in Senior High School English Textbooks

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Abstract: Interdisciplinary analysis is of great significance and far-reaching impact in the current education field, which not only responds to the reform requirements of the new curriculum standard, but also conforms to the trend of global knowledge economy development, and plays a key role in cultivating students' comprehensive ability and innovative thinking. Through interdisciplinary research and practice, students' comprehensive quality and innovative ability can be effectively enhanced, providing them with a broader space for development in their future life and work. Therefore, sustained attention to and in-depth study of the interdisciplinary content of teaching materials will promote the integration of disciplinary knowledge, better help teachers to teach interdisciplinary content. In this paper, from the perspective of interdisciplinary research, the reading texts in the compulsory 1-3 books of the FLTRP edition for senior high school English are analyzed quantitatively and qualitatively, and through the analysis it is summarized whether the textbook embodies the interdisciplinary characteristics and specifically how the interdisciplinary content is presented, and it provides suggestions for the writing of interdisciplinary content of the textbook as well as for the teaching of English in China.

Keywords: Interdisciplinary Analysis; High School; Textbook; Reading Text; Subject

1. Introduction

With the continuous progress of technology and the continuous integration of subject content, interdisciplinary research has become one of the mainstream directions of international education reform. Interdisciplinary content study plays a vital

role in stimulating students' interest in active inquiry, and the authenticity, practicability, and integration of interdisciplinary, these features not only change the traditional way of learning, but also promote students' in-depth understanding of knowledge and application ability. Wang, believes that interdisciplinary learning pays more attention to information fusion between different subjects and reflection on the whole learning process, and the focus of learning has shifted [1]. It is pointed out in the English curriculum standard that new achievements and results of economic, political, cultural, scientific, technological, social and ecological development should be presented in the teaching materials as much as possible [2]. Chen and Wu elaborated that textbooks are important carriers of teaching, which provide content, topics, methods and design guidelines for teaching and learning, and the key to the success of interdisciplinary learning lies in the interdisciplinarity of textbooks [3]. The mission and significance of textbooks are significant, so it is crucial to analyze the relevant contents of textbooks.

Jia and Li believe that single subject knowledge can no longer meet the needs of innovative talents cultivation, and that subject synthesis and interdisciplinary education is an important direction for the development of education in the future [4]. Zhang and Chen believe that interdisciplinary integration, focusing on the intrinsic connection between various subjects, can form a new knowledge structure based on disciplinary knowledge but beyond disciplinary knowledge, thus making up for the fact that it can make up for the single knowledge limitations, promote students' overall understanding of knowledge, and lay a knowledge foundation for the comprehensive development of human beings [5]. With the development of China's education reform, interdisciplinarity has become an important concept in the

preparation of teaching materials, but China's study of English textbooks from the "interdisciplinary" perspective of the reading section is less, so the author takes the English textbooks of the FLTRP edition for senior high school as the research object.

2. Theoretical Basis

2.1 Theory of English Textbook Analysis

The theory of English textbook analysis is a theoretical system that studies the content, structure, function and usage of English textbooks. Xiao and Wang believe that textbook analysis refers to the analysis based on the theme. The process of choosing appropriate methods to analyze the textbook texts, in order to summarize the characteristics and laws of the textbooks, discover the problems existing in the textbook compilation process, and put forward improvement suggestions [6]. The main goal of the theory of English textbook analysis is to provide teachers with a scientific and systematic method of evaluating textbooks and to help them choose and use the textbooks that best suit their teaching needs. At the same time, it also provides a feedback mechanism for textbook writers so that they can continuously improve and refine their textbooks according to actual teaching needs.

2.2 Multiple Intelligences Theory

Multiple Intelligences Theory (MI Theory) was proposed by the American psychologist Gardner, whose core proposition is that human intelligence is not a single quantitative, but a synthesis of multiple independent intelligences. Gardner initially proposed seven types of intelligence, including linguistic intelligence, logical-mathematical intelligence, spatial intelligence, musical intelligence, physical-motor intelligence, interpersonal intelligence, and self-awareness intelligence. Multiple Intelligences theory has been adopted by the education systems of many countries to improve teaching strategies and curriculum design to meet the learning needs of different students. Tang, believes that teachers should not limit themselves to teaching a single area of knowledge, but should expose students to a full range of knowledge in order to promote their all-round development [7].

2.3 Content-Based Teaching

Content-based teaching, also known as content-driven teaching, is an educational method that emphasizes the importance and centrality of teaching content. In this mode of teaching, teachers design lessons and teaching activities around the core concepts, theories and knowledge systems of the subject. Shi and Cen believe that textbook writers should improve the coverage of reading texts in English textbooks and expand the diversity of reading texts in English textbooks [8]. The reading text in senior high school English textbooks is an important support for teachers to teach, so the interdisciplinary content are all reflected through the reading text of senior high school English textbooks. Liu, believes that the key to the full play of the function of teaching materials lies in teachers [9].

3. Research Methods

This study adopts the content analysis method to quantitatively analyze the Understanding ideas section of the compulsory 1-3 books of the 2019 edition of the senior high school English textbook of the FLTRP edition, and then takes a qualitative approach to give an overview of some of the reading texts. There are 18 reading texts in total, and the reading texts are numbered 1-18 in order. The main reference is the Chinese national standard for subject classification, which is combined with the actual situation to construct the coding categories for this study. Specifically, they include Chinese, mathematics, English, politics, history, geography, physics, biology, chemistry, art, music, physical education, health, information technology, literature, medicine, astronomy, architecture, and ethnography, which constitute the values taken for the content analysis method. The Understanding ideas content of the textbook was then coded based on this disciplinary classification and categories as an interdisciplinary analysis framework. (The coding of this study refers to "Interdisciplinary Analysis of High School English Teaching Materials--Taking the Compulsory Module of the PEP Edition as an Example" published by P.H. Chen and Yueh-Wen Wu in 2012.) When conducting the qualitative study, in order to ensure the fairness of the sample selection, the author selected six reading texts for the qualitative study from among the eighteen

reading texts. 6 reading texts were selected for qualitative analysis, the sampling spacing was determined to be 3, and the selected texts numbered 2, 5, 8, 11, 14, and 17 were qualitatively analyzed after equidistant sampling. The research questions of this study are as follows:

(1) What subjects are involved in the interdisciplinarity of the reading texts in the FLTRP edition for senior high school English textbook?

(2) What are the characteristics of the interdisciplinarity of the reading texts in the FLTRP edition for senior high school English

textbook?

4. Findings and Analysis

4.1 Quantitative Analysis

The author has counted the number of disciplines involved in the reading texts in the compulsory edition of English textbook for senior high schools of the FLTRP edition, which mainly involves Chinese, English, biology, geography, ethnography, physical education, literature, information technology, fine arts and other contents. The results are shown in the following Table 1.

Table 1. FLTRP Edition of Senior High School English Textbooks Interdisciplinary Statistics

Subject	Title	Number	Percentage(Approximate)
Chinese	My First Day at Senior High Click For A Friend Absolute Agony!	3	17%
English	Neither Pine nor Apple in Pineapple	1	6%
biology	The Monarch's Journey Sharks: Dangerous or Endangered?	2	11%
geography	Longji Rice Terraces Blogging Australia CLIMBING QOMOLANGMA: WORTH THE RISKS? Hot! Hot! Hot!	4	22%
ethnography	The Real Father Christmas	1	6%
physical education	A Game for the World	1	6%
literature	When Hamlet meets Peking Opera	1	6%
information technology	The New Age of Invention	1	6%
fine arts	Live from the Louvre	1	6%
other	Like Father, Like Son A Child of Two Cuisines The Well That Changed the World	3	17%

According to the statistics above, the reading texts in the compulsory English 1-3 textbooks of the FLTRP edition are clearly subject-oriented, accounting for about 83%, and involving a total of nine subjects, including Chinese, English, biology, geography, ethnography, physical education, literature, information technology and fine arts. The largest number of subjects involved is geography, followed by language and biology, and the fewer subjects involved are English, ethnography, physical education, literature, information technology, and fine arts, and the fewer of these subjects are consistent in number. In general, natural sciences accounted for the largest proportion, followed by humanities, and the content of the textbooks showed a clear interdisciplinary tendency,

reflecting the necessity of interdisciplinary research. The choice of textbook content is more close to the actual life, providing students with real situations, focusing on the students' sense of experience and participation, and the richness of the subject content, based on reading texts, combining English learning with the content of other disciplines, which largely enriches the method of English learning, improves high school students' interest in and participation in English learning, and at the same time further promotes the integration of the subjects. However, although more interdisciplinary subjects are involved, most of the subjects are concentrated in geography of natural sciences and language of humanities, and other subjects account for a small proportion, which shows the unevenness

of interdisciplinary subjects in the reading texts of Books 1-3 of the compulsory version of the FLTRP edition for senior high school, so that the contents of other subjects are missing, and the students can't get to learn the contents of other subjects, which is detrimental to the comprehensive reserve of knowledge and the development of the comprehensive ability of the students.

4.2 Qualitative Analysis

According to the number, the author qualitatively describes the selected reading texts, which are mainly related to numbers 2, 5, 8, 11, 14 and 17. The reading text numbered 2 lists the “crazy” phenomena in English that confuse learners with humor and funny language style and evaluates them, which reflects the fun, variety and creativity of the English language. The reading text numbered 5 introduces the migration of the Monarch based on scientists' observation and research. The main purpose of the reading text is to help students look at the migration phenomenon of the Monarch in a dialectical way and think about the relationship between human beings and animals, and the reading text is mainly related to the subject of Biology. The reading text numbered 8 introduces Tolkien's Letter from Santa Claus. This text explains the reasons for the book's popularity, describes its content, and concludes with a discussion of Tolkien's deep fatherly love for his children and the true meaning of Christmas, which relates to the subject of ethnography. The reading text numbered 11 describes the work of a professional photo blogger's connection to the continent of Western Australia and his views on the environment. The text provides students with cultural information about Western Australia, an appreciation of cultural diversity, and is useful in guiding students to make real-life connections, talk about the impact of travel, and express their own opinions about the work of tourism. This reading text is primarily concerned with the subject of geography. The reading text numbered 14 presents the story of a Canadian named Ryan, who has been helping children in water-scarce places in Africa to solve the problem of drinking water since he was a child, which is conducive to guiding young learners to be socially responsible, to engage in public welfare and volunteer service, and to actively

help others. The subject classification of this reading text is divided into other, but it involves the relevant content of the African region, which involves the subject of geography to a certain extent. Reading discourse number 17 analyzes the “exploratory” nature of explorers and the value of exploratory activities by giving examples and quotes from explorers and psychologists, and the explorers' exploratory activities are related to some geographic locations, which is related to the subject of geography in this reading text. To sum up, almost every reading discourse involves related subjects, but some of them are not very obvious, and the distribution of subjects is not very balanced. Yao believes that the implementation of interdisciplinary teaching is not to completely abandon subject teaching, but interdisciplinary understanding and disciplinary thinking are presupposition and complement each other [10].

5. Conclusion and Recommendation

From the above analysis, the reading texts in the compulsory English textbook of the FLTRP edition for senior high school reflect the “interdisciplinary” nature of the textbook. Among them, the most involved is geography, followed by language and biology, and the interdisciplinary reading texts are mainly distributed in natural sciences, which shows the uneven distribution of interdisciplinary reading texts. However, overall, the reading texts of the FLTRP edition for senior high school reflect interdisciplinarity better, and only 18 reading texts reflect 15 interdisciplinary contents. In a word, the reading texts of the FLTRP edition for senior high school focus on the diversity of subjects and the connection with daily life, which has a great effect on the expansion of students' knowledge, the experience of humanism in the English language subject, and the increase of their interest in English learning. This is a great promotion for students to expand their knowledge, experience the humanity of English subject and increase their interest in English learning. To a certain extent, this is in line with the basic purpose of advocating and pursuing the correlation and complementarity between different subjects. In view of the lack of interdisciplinary reading text in the compulsory version of the FLTRP edition for

senior high school English textbooks, the author puts forward the following suggestions.

(1) For the writers of the textbooks, while noting the interdisciplinary nature of the reading texts, they should also pay attention to the balance of the interdisciplinary content, which should not be limited to only one or two subjects, with other subjects being involved in little or nothing. The selection of reading materials can cover the contents of several disciplines. In addition, textbook writers should pay attention to the authenticity and interest of the contents of the textbooks, which are close to the reality of life and in line with the learning level of students.

(2) For teachers, in the process of using teaching materials, they should consciously cultivate students' "interdisciplinary" literacy. Han, argues that teachers can "promote learning through competition" by organizing regular "interdisciplinary" knowledge competitions in the classroom to stimulate students' independent learning and active learning.

(3) For students, they should increase their own subject knowledge reserves, master the interdisciplinary content in the English reading discourse, and expand their reading text input through reading to enrich their learning of interdisciplinary content.

The above is the author's interdisciplinary analysis of the reading text of the compulsory version of the English textbook of the FLTRP edition for senior high school, we should pay more attention to the cross-fertilization of subjects, in order to cultivate the comprehensive development of people in the new era to pave the way for the integrated development of knowledge, to cultivate the comprehensive ability of the students and the spirit of innovation, to achieve the purpose of education, and to truly realize the value of education.

References

[1] Wang Min. Interdisciplinary Analysis of Senior high school English Textbooks under the new Curriculum Standards: A

case study of the compulsory section of the FLTRP edition. *The Road to Success (Middle)*, 2019, (01): 9-10.

[2] Ministry of Education of the People's Republic of China. *English Curriculum Standards for Senior High Schools: 2017 edition (revised in 2020)*. Beijing: People's Education Press, 2020.

[3] Chen Baihua, Wu Yuewen. An Interdisciplinary analysis of senior high school English Textbooks: A case study of Compulsory Modules in the PEP Edition. *Curriculum, Textbooks, Teaching Methods*, 2012, 32(04): 49-55.

[4] Jia Chenfang, Li Jing. Hot spots, evolution and prospects of interdisciplinary research on primary and secondary school textbooks. *Basic Education Research*, 2023(21):1-4.

[5] Zhang Wenchao, Chen Mingrui. The value implication, basic orientation and implementation of interdisciplinary integration. *Educational Theory and Practice*, 2019, 43(29):3-7.

[6] Xiao Lei, Wang Ning. Analysis of Chinese Textbooks: Review of the Process and Outlook for the Future. *Curriculum. Textbook. Teaching Methods*, 2021, 41 (10): 42-50.

[7] Tang Yanling. Interdisciplinary Analysis of reading texts in junior high School English textbooks -- A case study of the Oxford Translation Press Edition. *English Plaza*, 2024, (08):129-132.

[8] Shi Bowen, Cen Haibing. Cross-disciplinary Analysis of reading texts in 2019 PEP edition high school English textbooks. *English Teachers*, 2018, 24(23):53-56.

[9] Liu Daoyi. On the important factors affecting the construction of foreign language teaching materials. *Curriculum. Teaching Methods*, 2019, 40(02): 64-71.

[10] Yao Guoyan. Teacher research community and its construction in interdisciplinary teaching. *Teaching and Management*, 2024(14): 23-26.