

Research Article

The Application of Literary Maps to the Teaching of English and American Literature in the Age of Big Data and the Internet of Things

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The concept of the Internet of Things has had a dramatic impact on the traditional way of life of human beings since its birth. This shock has almost spread to education, medical, and other fields. It is reflected in the teaching process of English and American literature in colleges and universities, which greatly enhances the vividness of teaching and makes rigid knowledge memory more vivid and specific. Literary maps, as an important entry point for regional research on the development of literature, are playing an increasingly important role in the teaching of English and American literature. This paper studies the role of literary maps in British and American literature in order to improve students' ability to study British and American literature and promote the development of teaching. This paper mainly uses the experimental method and the investigation method to analyze this in detail and gets the concrete result. The data shows that literary maps play a certain role in structure, positioning, and empathy. All aspects are supported by nearly 25%. Therefore, the study of literary maps still has a significant impact on the teaching of English and American literature.

1. Introduction

After entering the new century, Internet technology has ushered in a golden stage of development. New things such as big data and the Internet of Things are gradually entering the lives of ordinary people. People's work and study have been affected by this emerging technology. This is especially true in the teaching in colleges and universities, which is closely integrated with cutting-edge technology, has launched a series of innovative activities. The application of literary maps has also ushered in great changes in the context of this era.

English and American literature teaching has always been the focus of research, with many representative viewpoints. For example, Zhang said that in recent years, the flipped classroom teaching model has been adopted and promoted by various disciplines, mainly advocating the learning of certain knowledge before or after class, and emphasizing the internalization of knowledge in the classroom [1]. Wenyi

said that British and American literature is an important part of language education, and appreciating British and American literature is an important cognitive and aesthetic activity [2]. Mengyue believes that cultural education is an integral part of professional English training, English and American literature courses are compulsory courses for English students, and cultural education is part of their educational responsibilities [3].

At present, the research on literary maps mainly focuses on the literary development context of a certain city, but the research on the application, development, and innovation of literary maps belongs to a blank field. In order to promote the sustainable development of literary map application in the new era, this paper studies the related theories of literary map and its role in British and American literature. Through the background elaboration of big data and the Internet of Things, its performance in teaching is analyzed, its application status in the current context is obtained through experiments, and

development suggestions are put forward on the basis of obtaining relevant data results.

2. The Application of Literary Maps to the Teaching of English and American Literature in the Age of Big Data and the Internet of Things

2.1. Literary Map. While Western space exploration has enjoyed the lofty status of the logos since ancient Greece, a critique of time became popular in the early 18th century and wiped out space in the early 20th century. Mainstream social critical science has experienced an unprecedented crisis of trust. The long-standing modern critical tradition began to deteriorate, and space again received widespread attention [4, 5].

At the same time, the spatial consideration of human society also triggered the cultural transfer of geography, and cartography was also included in it. The emergence of the concept of literary map implies the circulation and distribution of knowledge and power, the adjustment, and tension of space and imagery. The standardization and differentiation of symbols have contributed to the innovation of postmodern cognitive literature map design without exception. "Conceptual iconography" subsequently became a buzzword in humanities studies. British and American literature cartography is conceived at the interface between the changes in cartographic culture and the study of British and American literary spaces [6, 7].

From another perspective, literary maps are not only containers of space objects and human culture but also an important force in the field of British and American literature. At this time, British and American literature was neither an external thing nor an internal emotion. All languages became the carrier of human representation of objective reality or self-reflection, but the spatial logic hidden in the form was the command of order and concept. Literary map metaphor draws on the spatial narrative of British and American literature to create a specific spatial grammar and draws the complementary vocabulary of British and American literary imagination from the spatial organization of related objects. Literary maps not only conform to the metaphorical laws of British and American literature and art but are also a place for discussion, even a challenge of meaning, thus highlighting the spatiality of British and American literary forms. Each image has its own geometric features, urban boundaries, spatial taboos, and preferred routes. In this sense, the literary map is "a symbolic field where the plot can be unfolded and justified," a screen of character and internal relationships that brings the logic of the story to the fore. In short, British and American literature and literary maps have a priori spatial nature, which is the basic logic of the fusion of British and American literature and literary maps, and are also the theoretical basis for the rapid development of British and American literature and literary cartography research since the official birth of the United States [8, 9].

This description of the literary map, which focuses not only on the author but also on the work, not only on the entire British and American literary tradition but also on the works of individual writers, should be more comprehensive. However, it obviously pays more attention to "point" information and pays different attention to the geographic information of linear and flat English and American literature [10, 11].

2.2. Big Data and Internet of Things. Big data refers to a technical form that adopts a distributed architecture to complete the analysis and refinement of large-scale data. The concept of the Internet of Things was born at the end of the last century. It refers to connecting all items with information equipment. We are currently in a period of rapid development, where new concepts and technologies are constantly being offered and used, and old ones are constantly being replaced. However, since there are no defined and normative standards for new things, different concepts and techniques are explained in different scenarios. Many respondents agreed that the goal of big data is the analysis and application of "data", and "big" is nothing more than the emergence of massive data generated by development and continuous information technology. The value of big data lies in the in-depth exploration of the connections between various scattered data, so that the data belonging to one category can achieve qualitative change. Generally speaking, all data closely related to educational activities can be defined as educational big data, and the data volume is stably increasing [12].

The entropy of information is called entropy in information theory, and it reflects the average value of the information it transmits. Its value is equal to the mathematical expectation of the amount of (self) information $K(\gamma_i)$ of each event:

$$F(\gamma) = - \sum_{i=1}^s f(\gamma_i) K(\gamma_i), \quad (1)$$

$$F(\gamma) = - \sum_{i=1}^m f(\gamma_i) \log f(\gamma_i), \quad (2)$$

where m is the number of possible symbols for the source γ . This algorithm can be used to organize and count the information of BAL in detail.

Mobile education has achieved rapid development in recent years and has achieved continuous innovation with the improvement of mobile terminal functions [13, 14]. It breaks through the limitations of traditional education in the fields of time and space and realizes cross-time and space communication between teachers and students with the help of Internet technology and mobile devices. The current stage of mobile education is mainly composed of the following elements: teachers, students, parents, learning materials, and learning places. It is necessary to build a mobile education platform, collect education data, and use technologies such as big data for learning analysis. At the same time, because of the high dependence of mobile education on Internet

technology and mobile devices, if its actual product design is too complicated and exceeds the support capabilities of existing theories and technologies, then in some problematic areas, it often cannot meet the needs of creative development [15, 16].

Information systems represent a general introduction to the operating environment of information systems, the architectural models used, and the distribution of functions. Through the overall structure, the whole system can be clearly understood [17]. The mobile education platform implemented in this paper adopts a distributed structure and is divided into three components: cloud, pipe, and terminal according to the location of the system deployment and the communication method. With “courses and knowledge points” as the core, an educational resource management system and a course creation system are constructed, and building blocks are used to build intelligent connections between people and people, people and courses, and people and resources. The advantage of this system lies in highlighting the mastery of knowledge and the cultivation of thinking ability in teaching, the participation of designers and students, the organization of classroom activities and resources, and the consolidation and development of teaching (online and offline), interaction, communication, and after-school education points [18].

2.3. Teaching of BAL. From a linguistic point of view, English and American literature can stimulate students to master vocabulary and grammar, and develop four language skills of reading, writing, listening and speaking [19, 20].

Depending on the teaching environment and themes, language courses can be divided into native language courses, second language courses, and foreign language courses. British and American literature can provide real language material, real language nourishment, and real language culture. Learning English and American literature is also the process of learning English [21, 22]. This enables students to better understand the characteristics of the language. Language is the carrier of culture. In order to truly understand the cultural meaning contained in a language, it is necessary to have a corresponding understanding and mastery of the language [23]. Therefore, in general, the teaching of English and American literature is of great significance for stimulating students' interest in learning, improving students' language skills, enhancing students' understanding of culture, and improving students' personal performance.

3. Investigation Method

3.1. Purpose of the Investigation. The research carried out by the Institute is focused on analyzing the specific application of literary maps to the teaching of English and American literature in the context of current technology. As we all know, the literary map, as an important concept to sort out the development of literature, has made remarkable achievements in recent years. Especially for the teaching object of the cross-cultural system of British and American literature, it has a very significant positive impact on the

improvement of teaching effect. It is hoped that through the investigation of the application status, the detailed data in this field will be mastered, and the scientific reference will be provided for the innovative application of the application system.

3.2. Survey Design. For the purpose of comprehensively grasping the current situation of the application of literary maps, the research subjects were divided into two groups: students and teachers. After discussion, the form of questionnaire survey was selected to realize the grasp of the status quo. And according to the survey data, it analyzes students' attitudes and understanding of literary maps in English and American literature teaching. At the same time, the questionnaire also took into account the inconsistency of students' and teachers' understanding of English literature teaching and the difference in knowledge structure, and a lot of energy was spent on the logic, readability, and conciseness of the survey statistics. After calculation, the reliability value of the questionnaire reached 8.64, which is higher than the specified value.

3.3. Questionnaire Distribution and Recovery. The research selects sophomore students and some teachers of a foreign language college in Nanjing as the subjects of the questionnaire. There are 100 student questionnaires, 100 of which are returned, and the recovery rate is 100%. There were 10 teacher questionnaires, 10 were recovered, and the recovery rate also reached 100%. When designing the test, according to the differences between students and teachers, the test is divided into student work and teacher work, and the content of the questionnaire should be composed of multiple-choice questions.

4. Analysis of Data Results

4.1. Results of the Student Questionnaire. The 1, 2, 3, and 4 in the vertical axis of Table 1 refer to film and television drama literature, novels, prose, poetry, and biographical literature, respectively. The numbers on the abscissa, respectively, refer to the number of readings per month. According to the reading of English and American literary works by students, the popularity rate of literary works is found.

As shown in Figure 1, we can see that the literary genre of reading volume is British and American literary works of film and television drama, which is closely related to the development of the era of BD. Students will choose appropriate and relaxing literary works to enrich themselves. In addition, the number of people reading prose, poetry, and biographical literature is relatively small. The details are shown in Table 2 and Figure 2.

4.2. Data Analysis of Teacher Questionnaire. As shown in Table 3 and Figure 3, the literary genres that teachers prefer are poetry and film and television drama works. Relatively speaking, for literary genres such as prose, poetry, and biographical literature, teachers are not so fond of it.

4.3. The Application of Literary Maps in the Teaching of BAL. Finally, according to the statistical results of the

TABLE 1: The number of students reading various genres of literary works.

	1	2	3	4
1	39	37	47	44
2	35	34	24	29
3	3	5	3	4
4	4	6	5	3
5	4	3	6	5

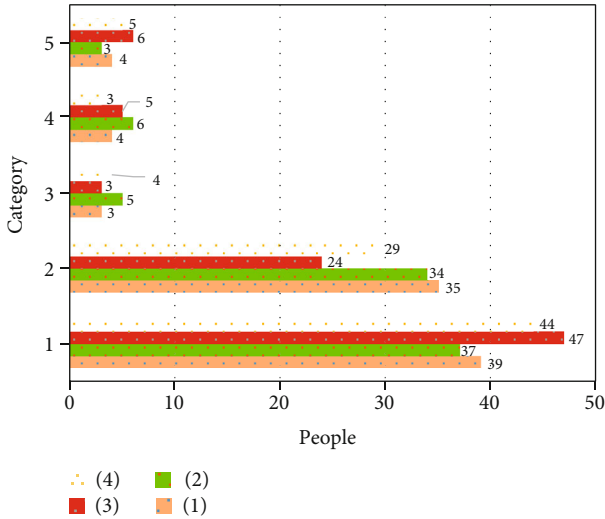


FIGURE 1: The number of students reading various genres of literary works.

TABLE 2: The extent to which various literary genres play a role in linguistics.

	1	2	3	4
1	14.13	8.89	6.48	9
2	21.58	16.78	15.37	19
3	25.27	26.69	25.08	31
4	21.39	30.59	30.13	17
5	3.58	3.12	9.16	9

questionnaire survey in this article, this article finds that the influence of literary maps on the teaching of BAL is relatively large. Among them, it mainly summarizes several common functions, such as the location of literature (the city’s place in literature), the structure of learning (writer’s style), the metaphors (deep meaning of city names), and empathy (the writer’s main emotional tendencies) among them. The details are shown in Table 4.

As shown in Figure 4, we can see that students believe that the impact of literary maps on British and American literature learning is mainly in their structuring. The teachers felt the same way, with five teachers emphasizing its importance. In addition, the positioning and empathy ability of the literary map should not be underestimated, and 2 teachers were selected for each.

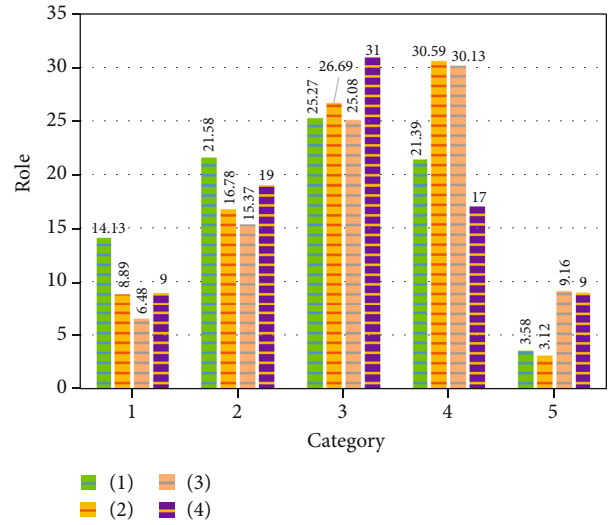


FIGURE 2: The extent to which various literary genres play a role in linguistics.

4.4. *Suggestions on the Reconstruction of English and American Literature Curriculum System by Literature Map in the Context of Big Data and Internet of Things.* The mutually beneficial relationship between literary maps and the English language is even more evident in the context of big data and the Internet of Things. Literary maps provide teachers and students with a new perspective on ELT theory, which expands the field of application of literary maps. With the development of ELT theory, each ELT method is designed to meet the individual needs or interests of students. Interpersonal relationships (interpersonal intelligence) are valued in both communication methods and cooperative learning in an effort to facilitate students’ English learning. Literary maps enable students to become aware of and utilize their multiple intelligences, which play a positive role in their self-esteem and lead to improved success rates in language learning. Literary maps enable English teachers to better understand students’ specific strengths, unique learning styles, and different learning potentials. And English teachers can teach in a variety of ways to make teaching more effective. Literary maps have a great influence on the education circle and even caused a sensation. The connection between literary maps and ELT theory expands the application field of literary maps.

The application of literary maps mainly includes the introduction of historical figures and works and the description of historical figures and events to help students understand the author’s creative background. Through the use of a lot of imagery and associations, some obscure and difficult to understand and difficult to express in words.

With the change of foreign language environment and the deepening and weakening of the influence of Chinese traditional culture on British and American literary works, foreign linguistics and translation studies continue to flourish, spread, and develop rapidly. In the teaching of English and American literature, the application of literary maps mainly helps students understand the story background

TABLE 3: Teachers' preference for teaching various literary genres.

	1	2	3	4
1	0	0	0	0
2	11.48	11.37	10.59	19.83
3	49	59	30	21
4	19	0	20	11
5	0	0	20	0

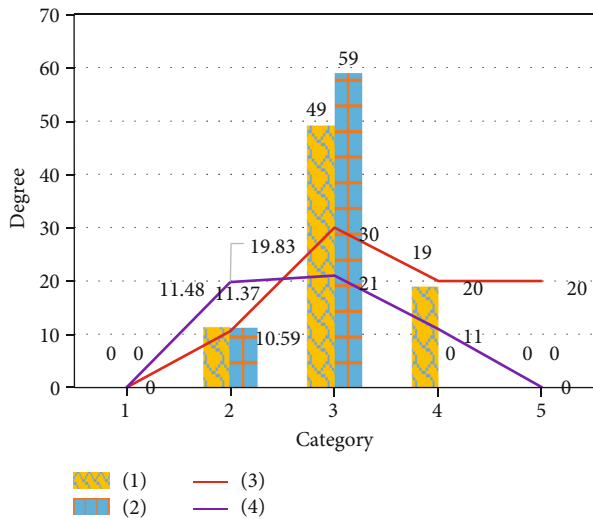


FIGURE 3: Teachers' preference for teaching various literary genres.

TABLE 4: The application of literary map in the teaching of English and American literature.

	Students	Teachers
Location	23	2
Structure	26	5
Metaphor	18	1
Empathy	25	2

behind the works through image analysis of characters and environments. At the same time, it also allows students to learn to understand natural landscapes and social phenomena from two aspects of color and text. Mainly based on pictures, the image is intuitive. Teachers can use the method of importing literary maps to stimulate students' interest in novel plots and characters. Use the scene as the carrier for teaching design to enhance the fun and attraction. Some of the textbooks involve knowledge points of English and American literature. Teachers can help students understand them through pictures and words. In a literary map, there are many elements such as vocabulary and grammar. The combination of these elements is also regular and plastic. Teachers should work hard for each student to design a reasonable, feasible, and practical design that can help them improve their geographic spatial imagination and language skills. The application of literary maps is systematic and highly normative, involving language and thought, as well

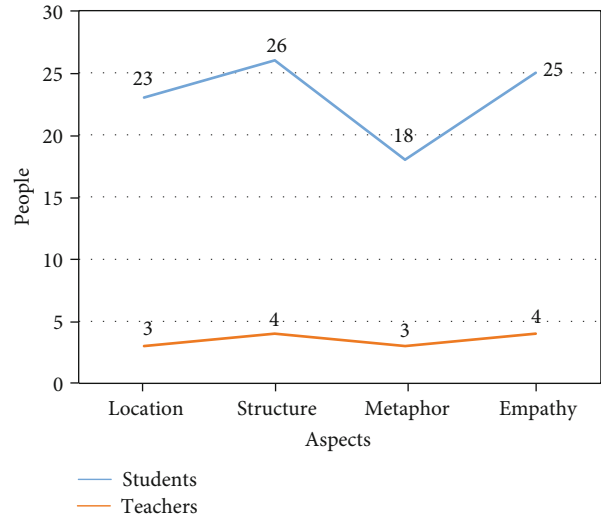


FIGURE 4: The application of literary map in the teaching of English and American literature.

as various technical means. Continuous improvement is required throughout the process.

5. Conclusion

In the era of the Big data, the development of the Internet has led to a dramatic increase in the amount of data. And most of these data belong to different fields, showing obvious fragmentation. People use scientific and technological means to gather these massive amounts of unstructured and heterogeneous information to achieve certain goals. In this era, the application of literary maps has become more and more extensive. It plays a certain role in the teaching of English and American literature. Because the literary map has the characteristics of positioning and spatial connection, it has a better adaptability with the new technology. The application of this method to the teaching of English and American literature can well construct the knowledge system. In the next step of research, I will adopt the method of case analysis to analyze and summarize a certain course example of literary map in the context of big data and the Internet of Things and propose more practical development strategies.

Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Conflicts of Interest

The author declares that he/she has no conflicts of interest.

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