Industry-University-Research Cooperation Education of Tourism English under Big Data Technology

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Abstract. With the development of computer technology and the enhancement of chip processing ability, data accumulation will become faster and more convenient. The rapid growth of large amount of data will enable people to find more and more patterns. According to large data, tourism English industry-university-research cooperation tourism can greatly improve students' comprehensive ability, we selected 60 students from the Foreign Language Institute and divided them equally into two groups. Among them, 30 students in Group A used big data technology for the industry-university-research cooperation education of tourism English and 30 students in Group B used traditional technology. Methods Travel English education was conducted. With the development of the experiment time, we found that there were significant differences between the two groups. The experimental results showed that 30 students in group A were better than those in group B in expressive ability test. The average test of group A students was 24.21, the average test of group B students was 15.10, the difference between the two groups was 9.11, and the ability of tour guide and explanation in group A was 6.97 higher than that in group B. Therefore, using big data technology can not only improve the expressive ability, but also improve the ability of tour guides and explanations. Big data can help students better adapt to their posts, move to society and create their own value.

Keywords: Big Data Technology, Tourism English, Industry-University-Research Cooperation, Tourism English Education

1. Introduction
With the liberalization of modern information technology, a large amount of data and information continue to be generated, and the knowledge structure is exploding exponentially. Getting data and information from people is saturated. In order to help people better analyze and obtain useful information from large amounts of data, a large data analysis platform and a large database [1, 2] are established on this basis. Therefore, large data is a collection of countless data, with strong fault tolerance, large data volume and content, and complex data types [3, 4]. In the context of large data, people can easily apply the information and data results obtained in real life and work, improve work efficiency, promote more convenient and effective problem management methods, and meet the current rapid development of social needs [5, 6]. In order to meet the requirements of education.
development under the background of big data, education must learn the methods of big data, reform innovative education, train talents to meet the needs of the times, and complete the tasks and missions of education.

The emergence of the big data era has increased many opportunities for the teaching of tourism English, at the same time, there are also immeasurable risks [7, 8]. The rapid development of the Internet has increased the way students access learning resources, and the way students learn is changing dramatically. In this case, the tourism English teaching must change the original teaching method, deeply understand the drawbacks of traditional teaching. Only by standing in the perspective of students, considering their actual learning purpose, and improving the teaching method, can more wonderful English tourism courses be trained. Promote internationalization and the development of domestic and foreign tourism [9, 10]. It is necessary to reform the teaching of tourism English on the basis of large data. Only by improving the teaching quality can the students and schools of tourism English teaching develop together.

This paper uses a comparative experimental method to study the cooperative education of tourism English industry-university-research under big data technology. We divide 60 students into two groups. One group uses traditional methods to educate, the other uses big data technology to experiment. Except for the different methods used in the experiment, all other data are identical. Finally, we find that using large data can improve students. Ability to express and guide and explain.

2. Big Data and Tourism English Education

2.1. Big Data Technology

2.1.1. The role of big data. Big data refers to the collection of data, which includes those data that can be extracted, managed and processed without tools and software in peacetime. Its greatest feature is mass, diversity, high speed and value. If you want to fully reflect the value of the data, you have to be prepared for the data technology associated with it. Large data, through its unique analysis methods, can effectively and quickly extract those required information from large-scale data. Educational data refers to all the data generated in the training process, such as basic information of students, students' academic examination results, activity courses, learning behavior and basic information of teachers, teacher planning, and other learning plan items. These data have been reused and stored repeatedly, thus expanding the number of its datasets, which contain many impressive educational analysis values.

2.1.2. Cluster analysis. Cluster analysis is short for clustering. In essence, the set of data objects is divided into several parallel classes or clusters based on the similarity and non-similarity between the data. Finally, the clusters and clusters are independent of each other, but the elements within the cluster have very high similarity. The calculation method is as follows:

Minkowski distance:

$$\text{dist}(p) = \left( \sum_{i=1}^{n} |x_i - y_i|^p \right)^{1/p}$$

When P approaches infinity, which is called the Chebyshev distance, then:

$$\text{dist}(p) = \max_{i=1}^{n} |x_i - y_i|^p$$

2.2. Travel English

2.2.1. Industry-university-research cooperation education. Tourism English industry-university-research maximizes the use of university research resources, educational resources, English education, tourism resources and so on. Focus on learning practical skills and experience, and combine the
production and service processes of enterprises with the practice of scientific research processes to form a specific training mode. This mode can effectively narrow the gap between schools and society in personnel training and talent needs, solve the problem of isolation between the two, and improve students' ability to adapt to future work and society. Co-operative education of obstetrics is an important way to develop students' working skills.

2.2.2. Status quo. First, there are some problems in the course setup. Generally speaking, tourism courses are divided into public basic courses, public choice courses, public service courses, Vocational Basic Courses and vocational choice courses, which are consistent with the curriculum classification of most higher education in China. Secondly, in the teaching of various disciplines, there is a general phenomenon of continuing the established teaching methods and concepts in high school teaching. Teachers just mechanically impart book knowledge to students.

Generally speaking, tourism courses are divided into public-funded courses, public elective courses, public service courses, professional basic courses and professional election courses. These courses meet the curriculum classification of most higher education in China. Secondly, in the teaching of different specialties, there is a widespread phenomenon of continuing the established teaching methods and high school training conditions. They only pass on the relevant theoretical guidance to the students, they do not know enough about the situation in real life, and they seldom actively combine the tourism phenomena and the needs of tourism development in real life. Finally, students' motivation and enthusiasm in learning is not high. They usually get learning knowledge and materials from educators, and even learning motivation from educators to make students think inertia and dependence.

3. Experimental Objects and Processes

3.1. Experimental Objects
We ranked the third-year students majoring in tourism English in our City Foreign Language College according to their usual results and experimental experience. Sixty students with similar overall results were selected and divided into two groups on average. Among them, 30 students in Group B used traditional methods to conduct tourism English education and 30 students in Group A used big data technology to conduct industry-university-research cooperation education in tourism English.

3.2. Experimental Processes

3.2.1. Method selection. Design a distributed evaluation method based on MapReduce for distributed calculation, and draw various graphics based on index data for more intuitive analysis. For the evaluation of academic quality, the horizontal, vertical and test paper validity are analyzed according to the selected norm index of statistical analysis. For the analysis of teachers' teaching process, this paper chooses the analytic hierarchy process combined with data mining association rules to conduct mining analysis, finds the factors that affect teachers' teaching, and uses the grey cluster analysis method to evaluate students' learning behavior process, in order to analyze group learning behavior.

3.2.2. Experimental steps. The experiment lasted for one semester. Group B students studied the tourism English course according to the previous school education methods, while Group A students used big data technology to analyze and calculate on top of the traditional methods. At the end of one semester, English expressive ability, tour guide ability and explanatory ability were tested and scored. Mean and standard deviation were calculated and compared between the two groups.

4. Analysis and Discussion of Results
Data mining is a process of extracting hidden and valuable information through algorithms for a large number of structured and unstructured data. Generally speaking, data extraction requires very low
form of analysis data. Whether it is structured data stored in the database, or simple text information, or even website information, can be used as the data source of data mining. It is flexible, and can deal with different data objects and different mining methods according to different needs. In the case of foreseeing the future market of travel agencies, travel companies can expand the scope of internship, so that students can: learn while doing, grow as soon as possible. Tourists are getting younger and younger, and young people are getting more aware of their needs. When tour guides become teammates and teammates can become friends, the percentage of sales will increase.

If it is school enterprise cooperation, colleges and enterprises should jointly cultivate students and make them learn faster with practical actions. This is a good way. In practical cooperation, we must strike a balance between theoretical study and teaching practice. If students invest too much in practice, they will inevitably reduce the time of theoretical learning, thus losing the basis of systematic learning, and ultimately affect the development potential of students, because in the end, school system education has the irreplaceable advantage of autonomous learning after graduation. When carrying out tourism research in University of technology, colleges and universities must formulate a reasonable learning plan, organize the classroom teaching of theoretical learning knowledge and the practical learning of enterprises, and combine them scientifically. In each stage of students' learning, they should give full play to the actual role of students. In the process of learning and practice, the information provided to students should also be archived, and their interests and personal characteristics should be recorded. Some data and big data should be used to analyze the process of students' development and improve its effectiveness.

4.1. Comparison of Expression Ability between the Two Groups
Tourists from all over the world are attracted by China's tourist resources and tourism industry. The sustainable development of China's tourism industry is facing good opportunities and challenges. In particular, high-quality tourism skills need more professionals to participate in this field. Therefore, the ability of expression is a step up in the requirements of English tour guides, which also requires our tourism English majors to have a good ability of expression. The foreign language level of tour guides has become a major obstacle to the international development of China's tourism industry. Therefore, there is a great demand for tourism. English speaking people have the ability to learn tourism, especially with solid English knowledge, proficient language and communication skills, as well as the application level of knowledge. In this experiment, the expression ability of group A and group B is shown in Table 1 and Figure 1.

|     | N  | Mean | Standard deviation | Standard error of mean |
|-----|----|------|--------------------|------------------------|
| A   | 30 | 24.21| 4.429              | 0.599                  |
| B   | 30 | 15.1 | 2.436              | 0.291                  |

Table 1. Comparison of expression ability between the 2 groups

![Figure 1. The expression ability of group A and B students](image-url)
From the data comparison in Table 1 and Figure 1, it can be seen that the 30 students in group A are better than those in group B in the test of expression ability. The average test value of group A is 24.21, and that of group B is 15.10, with a difference of 9.11. Obviously, this gap is mainly caused by the different teaching methods of the two groups of students. Group A students can make full use of information by using big data technology. Therefore, the expression ability of group A is better than that of group B.

4.2. Comparison of Tour Guide and Explanation Ability between the Two Groups

A well-trained foreign tour guide must have good English explanation ability, careful organization and coordination ability, smooth communication and cooperation with the team, be able to adapt to self-esteem and punctuality of tourists, be able to properly deal with emergencies, and be able to promote the environment and ability of tourism products. Among them, the special skills of explaining tourism English are the basic skills and basic skills of tour guides. This is related to whether the tour guide can establish a harmonious relationship with tourists, cultivate good feelings in tourism, whether the tour guide can trust tourists, and whether the tour guide can properly and skillfully promote local products. The so-called tourism English explanation ability is the ability to prepare, explain and guide all aspects of the tour guide's work in fluent English to ensure the smooth implementation of the project. Especially including oral English ability, language organization ability, adaptability and comprehensive knowledge application ability. Therefore, we compare the tour guide and explanation ability of the two groups of students, and the comparison results are shown in Table 2 and Figure 2.

|     | N  | Mean | Standard deviation | Standard error of mean |
|-----|----|------|--------------------|------------------------|
| A   | 30 | 22.83| 3.321              | 0.428                  |
| B   | 30 | 15.86| 2.637              | 0.322                  |

**Figure 2.** Comparison of tour guide and explanation ability between the two groups

From the above data analysis in Table 2 and Figure 2, we can see that the average guide and explanation ability of group A is 22.83, the average guide and explanation ability of group B is 15.86, and group A is 6.97 higher than group B. From the standard deviation, the standard deviation of group A was 3.321, and that of group B was 2.637. The standard deviation of group A was 0.684 lower than that of group B. This may be due to the short experimental time. Therefore, the use of big data can improve people's tour guide and explanation ability, but from a semester's experiment, the students' level of play is quite different.

5. Conclusions

With the continuous trend of modern technology into various industries, production and life fields, a variety of information processing methods and big data analysis platform emerge in endlessly, providing people with a more suitable way and platform of information disclosure. At the same time,
massive data has become an important feature of modern social life. In particular, it has become a rule in people's life to represent valuable social data sources and operate them effectively. In modern English tourism education, teachers can also use a large number of data to analyze and operate information, and encourage the development of tourism English in English education. They can make training plans to meet the needs of the development of the times and students. In addition, big data is a double-edged sword. In big data, various industries, universities and research chains, customers, enterprises and students can analyze various processes and results, and create special sources of value. In order to spread the virus to some people, people also know to hide the name of social networks, so that some criminals have more accurate attacks, so the industry can analyze a lot of data. And we also need to pay attention to the security of information in order to ensure the security of various problems in universities and scientific research.

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