

A Study on the Adaptability of Foreign Students in Universities of Henan Province

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Abstract: *With the enrollment scale of higher education and education internationalization not expanding, this group of international students has been growing. At the same time, there are many obstacles for international students to adapt to life in a foreign university. Based on large-scale real corpus and Python statistical platform, this study adopts the research idea of "from the outside to the inside", and combines the natural corpus investigation of social platform with the semi-natural corpus investigation of questionnaire. Taking universities in Henan Province as an example, By listening to the "heartfelt voice" of overseas students, this paper tries to investigate the adaptability obstacles of overseas students in psychology, study and life, so as to put forward countermeasures and suggestions to further optimize the adaptability education of overseas students under the new situation, so as to promote the high-quality development of overseas education.*

Keywords: *Adaptability; Foreign students; Henan*

1. Introduction

International students are the strength of international students in higher education. According to the latest data on the official website of the Ministry of Education (September 2022), a total of 700,000 international students were enrolled in various colleges and universities in 2022, which shows that this group is quite large. However, the transition from domestic middle school students to foreign students involves the change of identity environment, the change of learning content and methods, the change of living scope and way, and the change of communication scope and way. For this group, it is not only the beginning of a new journey, but also a challenging leap, which is the key transition period of college career.

Along with the rapid development and popularization of Chinese higher education in recent years, the adaptability of overseas education is increasingly concerned (Wang Shaomei, 2011; Zhu Lingyun, 2015; Shi Xin, 2021; Feng Zhi, 2022, et al) [3][5][6][8]. However, in terms of research scope, previous researches are mostly limited to individual universities or individual majors, and the research vision and significance need to be improved (Cheng Fang, 2019) [1]. In terms of research methods, most of them are introspective and non-empirical investigation, or most of them are empirical investigation based on traditional questionnaires based on semi-natural corpus, which makes it difficult to guarantee the scientificity and accuracy of the research. In terms of research issues, more attention is paid to the psychological or learning adaptability of overseas students, but there is a lack of comprehensive investigation on the adaptability of overseas students [7]. In view of this, based on large-scale real corpus and Python statistical platform, this study adopts the research idea of "from the outside to the inside", and combines the natural corpus investigation of social platform with the semi-natural corpus investigation of questionnaire (Gu Xiaoqing, 2005) [4]. Taking universities in Henan Province as an example, this study comprehensively investigates the adaptive obstacles of international students in psychology, learning and life. To master the effectiveness and shortcomings of the adaptive education for international students, and put forward countermeasures and suggestions to further optimize the adaptive education for international students under the new situation, in order to bring useful reference for universities in other regions and promote the high-quality development of higher education (Evans, 2010) [2].

2. Research Design

2.1. Research the problem

This part mainly examines the following three issues:

- ① Universities in Henan Province (undergraduate/junior college; What are the main obstacles to the adaptability of public/private students? What are the similarities and differences?
- ② Universities in Henan Province (undergraduate/junior college; What are the main reasons for the adaptability obstacle of public/private students?
- ③ How to alleviate the problems of colleges and universities in Henan Province (undergraduate/junior college; The Adaptability Barrier of Public/Private Students?

2.2. Research objects and data sources

In this study, international students from colleges and universities in Henan Province were selected as the research object, and 20 universities (undergraduate and junior college ratio 1:1, public and private ratio 1:1) were selected as representative samples, so as to give consideration to the operability and scientific nature of the study.

The main corpus data of this study are the comments from overseas students on Baidu Post Bar and Weibo Super chat of target universities. The reasons are as follows: 1) The college students' comments on Baidu Post Bar and Weibo Super chat are very active, which is a social platform with a high degree of comments from overseas students of universities. The data resources are huge, which can provide sufficient empirical basis for this study. 2) The statements on Baidu Post Bar and Weibo super talk are pure natural language materials for international students, which can ensure the effectiveness of viewpoint capture.

2.3. Research ideas and statistical methods

(1) Research ideas:

① Combination of qualitative and quantitative: Based on social platform language big data and the index system of China College Students Adjustment Scale (CC-SAS), in the python operating environment, Latent Dirichlet allocation (LDA) subject analysis model and sentiment analysis were used to analyze the corpus of student help messages. To find out the main themes, keywords, emotional characteristics and their different tendencies among different types of colleges and universities in Henan Province, and systematically summarize, so as to ensure the validity and scientific results of the study.

② Combination of description and explanation: This study combines description and explanation, adopts the ideas of "bottom-up" and "from the outside to the inside", and on the basis of relatively full observation of the big data of language on social platforms and questionnaire data, grasates the general characteristics of the adjustment obstacles of college students in Henan Province, and further conducts explanatory investigation on the motivations behind the statistical results. It tries to achieve the unity of descriptive adequacy and explanatory adequacy.

The combination of artificial intelligence method and artificial introspection method. In terms of data collection and analysis, mainly based on Python operating environment, LDA topic analysis and SVM emotion analysis are carried out on the target corpus data. However, manual secondary processing before machine processing and manual analysis and verification after machine processing are also carried out on the corpus. The comprehensive application of the two is mutually beneficial, which jointly ensures the scientific nature of the study(Kinzie , 2014)^[5].

2.4. Data collection and statistics

(1) Data collection

① Message data collection

Firstly, a large number of data are collected and analyzed for the international students section, and the corpus is collected by taking the essence and eliminating the dross. The team summarized the

corpus of 20 universities with a clear division of labor. Taking new college students as the research object, the obstacles of college students were classified, such as financial and economic obstacles and accommodation problems, etc. A total of 5,766 messages were collected, and the corpus size of direct statistics reached 126,580 words.

② Questionnaire data collection

Aiming at the prominent problems existing in the adaptability of overseas students in colleges and universities, this research group developed a questionnaire to grasp the deep-seated reasons behind it and provide empirical reference for universities to deal with the adaptability of overseas students in the future.

The survey respondents are: For first-year Students of undergraduate, junior College, public and private universities, the research group adjusted the questionnaire index according to the index system of China College Students Adjustment Scale (CC-SAS) by Delphi method. Several prominent question indicators (campus activities, catering, Internet and accommodation activities) were added in the message data of international students, and finally a questionnaire was formed. This questionnaire adopts 4-level scoring, and the higher the overall score, the better the adaptability. The options are very consistent, difficult to determine, relatively inconsistent, completely inconsistent, respectively recorded as 4, 3, 2, 1. The questionnaire was distributed by anonymous method, which was carried out in two ways: network electronic questionnaire and unified paper questionnaire. A total of 2000 questionnaires were designed and distributed evenly to 20 colleges and universities in Henan Province, each of which had 100 questionnaires, among which the ratio of citizen office, college and male to female ratio was 1:1, so as to ensure the balance and representativeness of the data. Through practice, a total of 2000 questionnaires were released and 2000 questionnaires were recovered, with a recovery rate of 100%. Among them, there were 1973 valid questionnaires, the effective rate was 96.5%. The majors covered humanities and social sciences, engineering, science, art, physical education and other majors, and the questionnaire survey was well-balanced.

(2) Data statistics

Artificial intelligence analysis has greatly improved the efficiency of natural language processing, but it has made greater demands on the quality of corpus data. Before the statistical analysis of the data, this study firstly processed the clauses and stopping words of the original raw corpus to generate the word frequency table, and then extracted the subject keywords and analyzed the emotion of the data.

1) Theme and keyword extraction

The core information of corpus big data can be effectively obtained by analyzing the subject and key words of corpus. In this study, subject and keyword analysis was carried out on the message data of overseas students from Baidu post bars and Weibo of colleges and universities in Henan Province, so as to obtain the prominent problems existing in the adaptability obstacles of overseas students in colleges and universities in Henan province. Specific findings are as follows:

2) Emotion analysis

Emotion analysis is the process of analyzing, processing, concluding and reasoning the subjective text with emotion, which is one of the most important branches in the field of natural language processing. People use social platforms to express their feelings, emotions and attitudes. Posts on social platforms often contain rich information, so social media has become a popular research object. Emotion analysis is one of the most fundamental and key research topics and the purpose of emotion analysis is to analyze the polarity of social media, to determine whether people have positive, negative or neutral attitudes towards certain events.

This study is based on the positive and negative emotion dictionary and negative dictionary developed by the Institute of Psychology of Chinese Academy of Sciences and loaded into python. Python. The calculation process is as follows: let the NTH emotion word of Stn text t , $n \in \{1, 2, \dots, I\}$, W (Stn) represents the weight value of emotion. If the emotion word is in the positive emotion dictionary, W (Stn) is +1; if the emotion word is in the negative emotion dictionary, W (Stn) is 1 1. Secondly, let N be the number of negative words within 5 characters before and after emotion words. If N is odd, weight of emotion words *-1; if N is even, weight of emotion words *1. The final score of sentiment analysis is the sum of the weight of emotion words, and the formula is as follows:

Finally, the judgment of emotional tendency is carried out. If the emotion score ≥ 0 , the text is judged as a positive comment, and the output result is 1; If the emotion score is less than 0, the text is judged

as a negative comment, and the output result is 1. The formula is as follows:

Since there may be multiple feature items in the same clause, which may interfere with the judgment of each feature emotional tendency, this kind of clause is manually checked and the final feature emotional tendency table is generated.

3. Research Findings

3.1. Theme distribution of adaptive disorders

Based on the message data and the characteristics of topic keywords under the LDA model, this study found that, on the whole, the adaptability barriers of college students in Henan Province exist in many aspects, but the following five topics are the most concentrated: campus activities, course examinations, accommodation, catering and Internet).

At the same time, we also found that there are some differences in adaptability among different types of schools. The specific manifestation is: (1) Campus activities and how to enrich campus time are the main concerns of both undergraduate and junior college students. This may be related to the abundant time in college and the more liberal teaching atmosphere in junior and senior high schools. Students in college have more time at their discretion, so how to make good use of time and enrich college life with campus activities is a problem that international students pay more attention to. (2) Undergraduate students pay more attention to academic issues such as course examination and course selection, while junior college students pay more attention to life quality issues such as accommodation and catering. Even though campus activities attract more attention, the fundamental purpose of going to university is to study, which is difficult for international students to adapt to. While accommodation and dining are about quality of life, accommodation and dorm relationships are about whether you can concentrate on studying for the next four years rather than living in an environment that makes you feel uncomfortable. (4) College students are different from undergraduate students in that they pay more attention to network problems. It shows that there are obvious problems in the use of electronic equipment in junior colleges, or the poor network leads to poor teaching effect of online courses; Or because of network reasons to bring games or watching TV and other poor experience. (5) As can be seen from the table, both junior college students and undergraduate students attach the same importance to emotion. It is expressed in personal emotion and social emotion. Personal feelings are confusion about the future, anxiety about the status quo, etc.; The social emotion is reflected in the communication with people. In the previous learning stage, students were generally mentally immature, and because the focus of the previous learning stage was completely on learning, they were extremely lacking in the emotional problems caused by interpersonal communication.

In addition, we also found that: (1) Public colleges and universities pay special attention to the problem of accommodation. The dormitory relationship is the first interpersonal relationship when entering the university. It will also accompany every international student in the next four years, so the accommodation conditions and roommate relationship are particularly important. (2) Compared with private colleges and universities, public colleges and universities pay more attention to course examination. The reason may be that public colleges and universities have strong teachers and high requirements for students, and the difficulty coefficient of college knowledge makes course examination difficult. It may also be due to the epidemic situation, which leads to the poor teaching quality of online teaching, coupled with the epidemic containment management, resulting in the uncertainty of course examination time, and the fact that international students have just entered the campus and are not familiar with various examination time and requirements, resulting in common obstacles for international students in public universities. As private colleges and universities belong to capital groups, teachers and requirements are not as good as public colleges and universities, so students pay less attention to courses than public colleges and universities. (3) Campus activities also appear to be very important because of the rich college life after study. As can be seen from the chart, both public and private colleges attach great importance to campus activities, while private colleges pay more attention to the sense of university participation brought by them. In the current epidemic environment, it is particularly difficult to hold a variety of campus activities. Therefore, the problems brought by this aspect need to be paid close attention to. (4) Compared with public schools, freshman students in private colleges pay more attention to emotional problems, which may be related to the style of study in private schools.

3.2. Results of emotion analysis

Considering the large and high size of the message, in order to take into account the effectiveness and operability, we carried out the emotion analysis of the top 500 messages on the most popular help posts of overseas students in various colleges and universities, in order to determine the emotional tendency of students in various colleges and universities in Henan province. On the whole, the emotional tendency of leaving messages is mostly positive, but public universities are higher than private universities, and undergraduate universities are higher than junior colleges. Specifically, the emotional distribution of messages left by international students in various colleges and universities in Henan Province can be divided into seven categories: Happiness, anger, sadness, fear, shock, disgust and no significant emotional tendencies, but there are some differences among different types of colleges and universities, public and undergraduate colleges and universities are higher than private and junior colleges and universities in the overall positive emotion.

3.3. Prominent Problems

According to the statistical results of the previous data, the adaptability obstacles of college students in Henan Province are mainly distributed in the following five fields: Campus activities, course exams, accommodation, catering and Internet. In order to further clarify the reasons behind the existence and the expectations of the student group, this study conducted a questionnaire survey. A total of 2000 questionnaires were designed and distributed evenly to 20 colleges and universities in Henan Province, with 100 questionnaires for each college. 1. To ensure the balance and representativeness of data. Through practice, a total of 2000 questionnaires were released and 2000 questionnaires were recovered, with a recovery rate of 100%. There were 1973 valid questionnaires, the effective rate was 96.5%. The results of the questionnaire are summarized as follows:

4. Conclusion

Adaptability is the first problem for international students to enter universities. It is directly related to life, study and psychology, and it is an urgent problem for higher education to solve. This study adopts the idea of empirical research. Based on the help statements of representative overseas students in colleges and universities in Henan Province on social platforms as the corpus data, this paper tries to investigate the adaptive obstacles and inter-school characteristics of this group in psychology, study and life by listening to the "heartfelt voice" of overseas students, and finds out the outstanding problems and suggestions with the help of questionnaire survey, in order to bring beneficial enlightenment for the education of overseas students in colleges and universities in Henan province.

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