Analysis of Factors Influencing Intercultural Communication Competence Based on Big Data

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Abstract. The cross cultural communication is an important part of cultural communication and language learning. Based on the method of big data analysis, 400 college students are divided into three groups to test their intercultural awareness and intercultural communicative competence. The test paper covers cross-cultural awareness, communication culture and knowledge culture. The results show that Chinese college students' deep intercultural communication awareness is generally weak. Intercultural communication course can effectively improve the level of cross-cultural communication. The main mistake in cross-cultural communication lies in the negative transfer of culture. The results of this paper have a certain reference value for the analysis of the factors influencing intercultural communication competence under big data.

Keywords: Cross Cultural Communication, Motivation, Data Association Analysis, Big Data

1. Introduction

Young Yun Kim, an American scholar, published the book “Becoming a Cross-cultural Person-A Comprehensive Theory of Communication and Cross-cultural Adaptation” in 2001 [1]. In this book, Kim completely rewrote the theory she put forward in 1988, and introduced a structural model, which organically constructed many factors that influenced cross-cultural adaptation [2-3]. It covers many subjects involved in cross-cultural adaptation, such as cultural anthropology, social psychology, linguistics, communication, sociology and environmental science. Unifying interdisciplinary macro and micro cross-cultural and adaptation studies from various viewpoints in a theoretical framework provides a theoretical schema for further deepening the study of cross-cultural communication in China and developing cross-cultural communication education in a universal sense [4].

The core of Kim’s theory includes three levels: cognitive level, emotional level and operational or behavioral level [5-7]. The three levels form a person's overall ability of cross-cultural communication in real life. There is a positive correlation among cognitive level, emotional level and behavior level, that is, the stronger the cognitive ability is, the greater the motivation for cultural communication of the target language is, the more positive and flexible one is about oneself and foreign culture, the more emotional and aesthetic resonance can be generated with people from other cultures, and the more flexible they can adapt to circumstances. Behavior ability is the explicit of cognitive ability and
emotional ability. For example, on the cognitive level, only by mastering the knowledge of language and non-verbal context and the rules of communication can we gain a deep understanding of culture [8]. On this basis, we can further achieve a complex cognitive structure. The same is true of the internal relationship between the emotional level and the operational level.

According to the characteristics of English Teaching in China, Gao Yihong [9], a Chinese scholar, divides the cultivation of intercultural intercultural competence into two levels: Cultural "Spanning" and "Surpassing". "Transcendence" focuses on the understanding of the target culture and the improvement of communicative competence, while "transcendence" focuses on the acquisition of general and holistic cultural awareness and reflective and tolerant attitudes . It is believed that "leapfrogging" is the preparation for "transcendence", while "transcendence" is not the inevitable result of "leapfrogging" [10].

Based on Kim's theory of intercultural communicative competence and Gao Yihong's idea of cultivating intercultural communicative competence, this paper makes a test and investigation on intercultural awareness and intercultural inter-language competence, and discusses the problems existing in cultural teaching and intercultural inter-language education in foreign language teaching at present in China.

2. Survey Methods and Objects
The purpose of this survey is to understand the following aspects:

(1) The awareness of cross-cultural awareness of college students in China; (2) the cross-cultural communication ability of college students in China; (3) what aspects of cross-cultural communication barriers do Chinese students have. Through the analysis of the survey results, this paper analyzes the problems existing in the cultural teaching and cross-cultural intercultural education in foreign language teaching in China, and puts forward the countermeasures.

The object of this survey is 400 students from an ordinary university in southern China. In recent years, the passing rate of CET-4 is about 70%; the passing rate of English majors is about 98%, and the passing rate of CET-8 is about 73%. Among the 400 people who participated in the survey, 186 students have just completed their third-year English major (94 of them have taken cross-cultural communication courses, and 92 have not taken cross-courses), and 214 non-English majors have taken CET-5 or CET-6. Most of the students in this school are the first batch of students admitted to the national college entrance examination. The students majoring in English have a second batch of admitted education classes and students who have been upgraded from junior colleges. Therefore, it should be said that these subjects are more representative. In addition, after three years of College English learning and edification, especially in today's foreign language teaching, they have a certain cross-cultural awareness and cross-cultural communication ability.

3. The Form, Content and Problem Source of the Test Paper
The test paper of this survey adopts multiple-choice questions A, B, C, D and E, which are divided into three categories: cross-cultural awareness, intercultural culture and knowledge culture. The specific distribution is described as Table 1.

From the distribution of the test content, it can be seen that the test content is mainly in the first two layers of cognitive level and behavioral level (Kim 2001), which is the "cross" level mentioned by Gao Yihong (Gao Yihong 2002), with a total of 34 questions. Emotional level is closely related to cross-cultural awareness, which can be classified as "beyond" level, a total of 7 questions.

The questions in the test paper are compiled according to the common situation of Chinese students in cross-cultural communication with foreign personnel, combined with the common problems found in the process of foreign language teaching and cross-cultural communication teaching, and referring to several materials. These materials include: (1) What are their cross-cultural experiences in the communication with Chinese students provided by senior foreign teachers; (2) the summary and feelings of 409 students in the intercultural communication course taught by the author in the past three years; (3) This paper analyzes the common errors of English learners in non English speaking
countries in cross-cultural communication, which are found by domestic and foreign scholars through investigation; (4) analysis of social culture test and its attached social culture test paper (Wang Zhenya, 1994).

**Table 1** Specific Distribution Table of Test Paper Content

| Test content | Number of questions | Communication culture | Number of questions | Knowledge culture | Number of questions |
|-------------|---------------------|-----------------------|---------------------|-------------------|---------------------|
| Cross cultural psychology | 2 | Gift collection and delivery | 3 | State polity | 1 |
| Understanding of values | 1 | Appointment | 1 | Geography | 2 |
| Ethnocentrism | 1 | Nonverbal communication | 7 | Literature | 2 |
| Set / individualism | 1 | Language communication | 9 | History | 1 |
| Behavior mode | 1 | Ladies first | 2 | Race | 1 |
| Problem cognition | 1 | Guest/hospitality/table manners | 5 | | |
| **Total** | **7** | | **27** | | **7** |

4. **Statistical Methods and Results of Answers**

In order to understand the difference between the scores of students in the third grade of English major in the next semester (hereinafter referred to as the third grade of English major) (Group 31) and those who have not taken cross-class (Group 2), the scores of these two groups of students are counted separately, and the scores of students in CET-5 and CET-6 (Group 1) are counted together. In order to know which problems are the most difficult for students, we count the number of mistakes in each problem. The calculation method of scores is that one of the multiple choices is one point, and the full score is 41 points. The author uses three methods, namely one-way variance analysis, multiple comparative analysis and average error rate, to make statistics on the collected data.

4.1 **Inter Group Variation Fanalysis**

One way ANOVA was used to analyze whether there were significant differences in F values between groups and among the three test groups which is shown in Table 2.

The above variable analysis shows that the F value is as large as 56.248, and the significance level is 0.000, which fully indicates that the scores of the three test groups are quite significant.

4.2 **Multiple Comparisons between Groups**

Multiple comparison analysis method is adopted to make multiple comparisons which is shown in Table 3.

**Table 2.** Variable Analysis Table (One-Way ANOVA)

| Sum of squares | Variance | Mean square | F | Significance level |
|---------------|----------|-------------|---|-------------------|
| Between groups | 2846.785 | 2 | 1423.393 | 56.248 | 0.000 |
| Within group   | 10046.325 | 397 | 25.306 | | |
| Total          | 12893.110 | 399 | | | |
Table 3. Multiple Comparisons between Groups

| (I) variable 1 | (J) Variable 2 | Mean difference ((I-J)) | Standard error | Significance level | 95% confidence interval |
|----------------|----------------|-------------------------|----------------|--------------------|-------------------------|
| 1.00           | 2.00           | -1.3867                 | 0.6271         | 0.069              | -2.8566 - 8.31E-02     |
| 3.00           | 1.00           | -6.5706                 | 0.6225         | 0.000              | -8.0295 - 5.1117      |
| 2.00           | 3.00           | -1.3867                 | 0.6271         | 0.069              | -8.31E-02 - 2.8566    |
| 3.00           | 2.00           | 6.5706                  | 0.6225         | 0.000              | 5.1117 - 8.0295       |

Note: The significance level of average difference is 0.05.

Table 4. Statistical List of Results of Each Survey Content

| Project category                                      | Group 1 | Group 2 | Group 3 |
|-------------------------------------------------------|---------|---------|---------|
| Average error rate of communicative culture questions  | 39.85%  | 31.15%  | 28.59%  |
| Average errors in communicative culture               | 10.76   | 8.41    | 7.72    |
| Average error rate of knowledge culture questions      | 50.71%  | 40.29%  | 39.29%  |
| Average errors in knowledge culture questions          | 3.55    | 2.82    | 2.75    |
| Average error rate of cross cultural awareness questions| 50.43%  | 44.86%  | 44.57%  |
| Average errors in cross cultural awareness questions   | 3.53    | 3.14    | 3.12    |

The above table specifically shows the differences among the three groups. The significance level between college English students (Group 1) and junior English majors (Group 2) who did not choose cross-class is 0.069, so there is no significant difference between the two groups. The significance level between college English group students (Group 1) and those who have taken cross-class courses (Group 3) is 0.000, showing considerable significant differences between them. The significance level between junior English majors (Group 2) who did not take cross-class courses and students (Group 3) who took cross-class courses is 0.069, which shows that there are quite significant differences between them.

4.3 Error Analysis of Each Test Item

Statistical list of results of each survey content is shown in Table 4. The statistical results of the above groups show that there are 27 communicative and cultural questions, and the error rate of CET-5 and CET-6 students is 39.85%. The error rate of junior high school students who have not taken cross-class is 31.15%, and that of junior high school students who have taken cross-class is 28.59%.

Among the seven knowledge and culture questions, the error rate of CET-5 and CET-6 students is 50.71, with an average error of 3.55. The error rate of junior high school students who have not taken cross-class is 40.29%, and that of junior high school students who have taken cross-class is 39.29%.

5. Conclusion

The results of the survey confirm that the cultivation of intercultural communicative competence is a long-term practical educational task. The course of intercultural communication can effectively improve students' intercultural level. It is a difficult qualitative leap from "crossing" to "Surpassing" in cross-cultural ability. To achieve this leap, the author thinks that we should construct a deep concept of intercultural communication education and explore a set of effective educational methods and testing means. From the psychological point of view, the expansion of cross-cultural psychological space, the improvement of cross-cultural psychological perspective and the formation of final cross-cultural personality should be the deep-seated concept of intercultural communication education. Flexible and broad psychological space, high cross-cultural psychological perspective and cross-cultural personality which means the overall growth of human beings will be the ideal goal of
intercultural communication education from "crossing" to "Surpassing".

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