Innovative Research on the Cultivation of Cross–Cultural Sensitivity in Higher Vocational English Education through Digital Empowerment

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Abstract The cultivation of students' cross–cultural communication skills has garnered widespread recognition in the education sector, and cross–cultural sensitivity—as the emotional dimension of this skill—is a prerequisite for successful cross–cultural communication. To innovate the model for cultivating cross–cultural sensitivity in vocational English education, this study employed the Intercultural Sensitivity Scale (ISS) as a tool, conducting a survey among students majoring in Business English at Shanghai Donghai Vocational & Technical College in China. Independent samples t–tests and Pearson correlation coefficients were used to analyze the overall level of cross–cultural sensitivity among students, explore the correlations among the five dimensions composing cross–cultural sensitivity, and identify the factors influencing students' cross–cultural sensitivity. According to the results of this study on intercultural sensitivity, the correlation coefficients between the five dimensions—communication participation, difference recognition, communication confidence, communication enjoyment, and communication focus—and intercultural sensitivity are 0.784**, 0.715**, 0.706**, 0.735**, and 0.512**, respectively, indicating a highly significant correlation. The grade level of students and teaching methods of instructors have a significant impact on students' intercultural sensitivity ($P < 0.05$).

Index Terms intercultural sensitivity, independent samples t–test, Pearson correlation coefficient, vocational English

I. Introduction

With the increasing integration of global cultures, cultivating students' cross–cultural sensitivity has become increasingly important [1]. Developing cross–cultural sensitivity not only helps students effectively avoid pragmatic errors but also enhances their cross–cultural communication skills [2]–[4]. As key institutions for cultivating highly skilled applied talents, vocational colleges have widely recognized the importance of fostering students' cultural sensitivity, fostering their cross–cultural awareness, and enhancing their "cultural competence" [5]–[8].

However, in traditional teaching models, instructors primarily rely on lecture–based methods, resulting in limited teaching approaches. English resources are often confined to new vocabulary and grammatical sentences from textbooks, with students typically relying on rote memorization to acquire knowledge [9]–[12]. Traditional teaching models not only fail to stimulate students' interest in learning English but also leave teachers feeling overwhelmed and exhausted during the teaching process, making it difficult to effectively cultivate cross–cultural sensitivity [13]–[15]. In the digital age, with the widespread adoption of computers and the internet, English teaching has gradually shifted toward networked and multimedia–based instruction. Traditional listening, speaking, reading, and writing courses have become more engaging and diverse through the integration of multimedia teaching methods [16]–[19]. In a digital teaching environment, the accuracy of English pronunciation can be ensured, and the language information and contextual information in English textbooks can be presented to students in a more vivid and engaging manner. This enriches classroom teaching resources, enhances students' learning motivation, and ultimately improves their cross–cultural learning outcomes [20]–[23].

With the continuous development of network information technology, English learning in a digital environment has become more flexible and diverse. The constant innovation of electronic devices has made it possible to learn English anytime and anywhere, reducing students' anxiety in traditional English learning processes and promoting their learning autonomy and initiative [24]–[27]. It is worth noting that English learning in a digital environment requires students to strengthen self–discipline and teachers to provide proper supervision. Communication platforms can be established through WeChat, Weibo,

and other means to maintain good communication with students, thereby enhancing their focus and effectiveness in online learning [28]-[31].

This study took 216 business English majors at Shanghai Donghai Vocational & Technical College in China as the research subjects and used the Intercultural Sensitivity Scale (ISS) as the main research tool to collect research data related to students' intercultural sensitivity and explore the overall status of intercultural sensitivity among students in higher vocational colleges. Using Pearson's correlation coefficient method, the study conducted correlation tests on cross-cultural sensitivity and its five dimensions: communicative participation, acceptance of differences, communicative confidence, communicative enjoyment, and communicative focus. This aimed to determine whether there were significant correlations between these dimensions, assess the strength of the correlations between each dimension and cross-cultural sensitivity, and analyze the directions for improving the emotional dimensions of cross-cultural sensitivity. Using the independent samples t-test method, we excluded demographic variables such as gender and grade level and attempted to conduct an in-depth analysis of the factors influencing cross-cultural sensitivity among vocational college students by combining other variables such as overseas experience, cultural activities, and teaching methods. Finally, based on the results of this study on the current status and influencing factors of cross-cultural sensitivity in vocational college English education, we propose targeted strategies for innovating the cultivation model of cross-cultural sensitivity in vocational college English education.

II.   Research Design

The rapid development of economic globalization and the implementation of the Belt and Road Initiative have led to increasingly frequent political and cultural exchanges between different countries, creating a more open environment for communication. In this context, interpersonal communication is increasingly characterized by cross-cultural elements. In today's era of deepening digital technology development, cross-cultural communication is increasingly appearing in our daily lives as economic globalization progresses. Scholars are also placing greater emphasis on issues related to cross-cultural sensitivity, and new requirements have been proposed for the cultivation of cross-cultural sensitivity in vocational English education [32].

II. A.   Definition of Cross-Cultural Sensitivity and Significance of Research

Cross-cultural sensitivity represents the emotional aspect of cross-cultural communication skills. It refers to the changes in an individual's emotions and feelings in a specific situation or when communicating with people from other cultures. The emotional dimension of cross-cultural communication specifically highlights that individuals with cross-cultural communication skills can project and receive positive emotional responses before, during, and after communication. Such positive emotional responses ultimately lead the communicators to a state of acknowledging and accepting cultural differences, further integrating sensitivity into their daily mindset. To cultivate the ability to project and receive positive emotional responses, an individual with cross-cultural sensitivity must possess self-love, self-reflection, an open mind, empathy, interactive engagement, and the ability to withhold judgment.

Whether considering the educational objectives of vocational English or future career development needs, cross-cultural communication skills are an essential foundation that vocational college students must master. Cross-cultural sensitivity is a crucial component of cross-cultural competence, and positive communicative emotions are a prerequisite for successful cross-cultural communication. This study investigates the cross-cultural sensitivity of vocational college students, analyzes the current state of their cross-cultural sensitivity, explores the factors influencing cross-cultural sensitivity, proposes practical methods to enhance cross-cultural sensitivity, and innovates a cross-cultural sensitivity cultivation model for vocational English education based on digital empowerment.

II. B.   Research subjects

The subjects of this study were students majoring in Business English at Shanghai Donghai Vocational & Technical College in China. A total of 216 students participated in the survey, including 100 males and 116 females; 79 first-year students, 76 second-year students, and 61 third-year students.

II. C.   Research Methods

II. C. 1)   Literature review method

By reviewing relevant monographs, journals, master's and doctoral theses, and other literature materials from both domestic and international sources, this study organizes and summarizes the theoretical knowledge and research findings related to cross-cultural sensitivity. Additionally, by analyzing the achievements and shortcomings of domestic and international research findings, this study provides a solid research direction and lays a strong foundation for the writing of the thesis.

II. C. 2) Questionnaire survey method

This study will use a questionnaire survey method to investigate the current level of cross-cultural sensitivity among students at higher vocational colleges and related variables. The questionnaire was randomly distributed to students majoring in Business English, using a combination of online and offline distribution methods. A total of 225 questionnaires were distributed, with 216 valid responses collected, resulting in a response rate of 96%. After the questionnaires were collected, the data was analyzed using SPSS.

II. C. 3) Independent samples t-test method

The independent samples t-test is divided into single population tests and two population tests [33]. The single population t-test will not be discussed here; instead, we will focus on the two population t-test, which is used to test whether the difference between the mean values of two samples and their respective populations is significant. The two population t-test is further divided into two cases: the independent samples t-test and the (correlated samples) paired samples t-test.

The statistical test for the independent small sample t-test is:

$$t = \frac{\overline{x}_1 - \overline{x}_2}{\sqrt{\frac{(n_1-1)s_1^2 + (n_2-1)s_2^2}{n_1+n_2-2}(\frac{1}{n_1}+\frac{1}{n_2})}} = \frac{\overline{x}_1 - \overline{x}_2}{\sqrt{s^2(\frac{1}{n_1}+\frac{1}{n_2})}} \tag{1}$$

where $\overline{x}_1, \overline{x}_2$ is the mean of the two samples; s_1, s_2 is the standard deviation of the two samples; s^2 is the combined variance of the two samples; $s^2 = \frac{\sum x_1^2 - (\sum x_1)^2/n_1 + \sum x_2^2 - (\sum x_2)^2/n_2}{n_1+n_2-2}$; $df = n_1 + n_2 - 2$.

The paired small sample t-test statistic is:

$$t = \frac{\overline{x}_1 - \overline{x}_2}{\sqrt{\frac{s_1^2 + s_2^2 - 2rs_1s_2}{n}}} = \frac{\overline{x}_1 - \overline{x}_2}{\sqrt{\frac{\sum D^2 - (\sum D)^2/n}{n(n-1)}}} \tag{2}$$

where $\overline{x}_1, \overline{x}_2$ are the two sample means; s_1, s_2 are the two sample standard deviations; r is the correlation coefficient of the paired samples; D is the data difference, i.e., $D = x_1 - x_2$; $df = n-1$.

II. C. 4) Pearson correlation coefficient method

Correlation analysis has been a hot topic in the field of statistics, with research beginning in the early 1990s. Correlation measures the strength of the linear relationship between two random variables. If one random variable increases (decreases) as another random variable increases (decreases), then the two random variables are said to have a positive correlation; conversely, if one random variable decreases (increases) as another random variable increases (decreases), then the two random variables are said to have a negative correlation.

For parametric statistics, the most commonly used method is the Pearson correlation coefficient method [34]. It is typically denoted by r and is used to measure the correlation between two random variables X and Y. When r is positive, it indicates that the two random variables are positively correlated; when r is negative, it indicates that the two random variables are negatively correlated, with r taking values in the range [−1, 1]. The correlation coefficient between two random variables can be defined as the ratio of the covariance of the two random variables to the product of their standard deviations. The correlation coefficient r can be expressed as:

$$r = \frac{\sum_{i=1}^{n}(X_i - \overline{X})(Y_i - \overline{Y})}{\sqrt{\sum_{i=1}^{n}(X_i - \overline{X})^2}\sqrt{\sum_{i=1}^{n}(Y_i - \overline{Y})^2}} \tag{3}$$

From equation (3), it can be seen that the absolute value of the Pearson correlation coefficient is less than or equal to −1. When the correlation coefficient is 1 or −1, it indicates that the two random variables are perfectly correlated, and all the collected data points precisely lie on a straight line; when r = 1, it indicates that X and Y are positively perfectly correlated, and there is a good linear relationship between X and Y, i.e., Y increases as X increases; When r = −1, it indicates that X and Y are perfectly negatively correlated, and there is also a good linear relationship between X and Y, with Y decreasing as X increases. When the correlation coefficient r = 0, it indicates that there is no linear relationship between X and Y.

II. D. Research Tools

The questionnaire used in this study was the Intercultural Sensitivity Scale (ISS), which is currently the latest and most reliable tool for measuring intercultural sensitivity. Scholars in many countries are testing the reliability of this scale in different cultural contexts, and it has been confirmed in Germany that it can be used in their samples and environments with a certain degree of reliability and validity. In this study, the scale was translated into Chinese and back-translated into English to ensure translation accuracy. The scale consists of 24 closed-ended questions, reflecting five dimensions of cross-cultural sensitivity: communicative engagement, acceptance of differences, communicative confidence, communicative enjoyment, and communicative focus. The Likert scale method was used, with scores ranging from 1 to 5: 1 represents strongly disagree, 2 represents disagree, 3 represents unsure, 4 represents agree, and 5 represents strongly agree. According to the ISS scale usage instructions, the final scores of the students in the scale options designed in this study were positively correlated with their levels of cross-cultural sensitivity. The grading standards for scores are as follows:

(1) Low level: 1–1.8;
(2) Low-moderate level: 1.81–2.6;
(3) Moderate level: 2.61–3.4;
(4) Moderate-high level: 3.41–4.3;
(5) High level: 4.21–5.0.

Validity refers to the degree of correspondence between measurement results and the content being assessed, including content validity, construct validity, and criterion validity. The survey questionnaire used in this study, except for the general demographic information section, was primarily based on the ISS scale and possesses high content validity. Therefore, the validity testing in this study primarily focused on construct validity. The statistical method used in SPSS for validity testing was exploratory factor analysis (EFA), with the results shown in Table 1. The results indicate that the KMO coefficient is 0.816, greater than 0.6, and the Bartlett's sphericity test significance is 0.000, less than 0.05, indicating that the validity testing of this survey questionnaire is satisfactory and can proceed to further data analysis.

Table 1: Validity of Intercultural Sensitivity Scale

KMO and Bartlett tests		
KMO sampling appropriateness quantity		0.816
Bartlett sphericity test	Approximate chi-square	1252.886
	Freedom	287
	Significance	0.002

III. Analysis of the Current Status and Influencing Factors of Cross-Cultural Sensitivity in Vocational English Education

This chapter will utilize SPSS 13.0 statistical analysis software to conduct an in-depth analysis of the collected research data from multiple perspectives, including the current state of cross-cultural sensitivity, the correlations among different dimensions of cross-cultural sensitivity, and the factors influencing cross-cultural sensitivity. This analysis will provide a foundation for proposing innovative strategies for cultivating cross-cultural sensitivity in vocational English education in subsequent sections.

III. A. Analysis of the overall status of cross-cultural sensitivity

First, we analyzed the mean and standard deviation of the five dimensions of cross-cultural sensitivity, communicative engagement, difference recognition, communicative confidence, communicative enjoyment, and communicative focus among the surveyed students. The descriptive statistics are detailed in Table 2. From the mean data, it can be seen that the surveyed students' level of difference recognition (3.9958) was the highest, followed by communicative focus (3.8419) , followed by communicative engagement (3.7251), communicative enjoyment (3.7171), and the lowest was communicative confidence (3.1927). The order of mean levels is: difference recognition > communicative focus > communicative engagement > communicative enjoyment > communicative confidence.

The highest score was for cultural difference recognition, indicating that students performed best in terms of cultural cognition. This suggests that students can understand and acknowledge cultural differences. Cultural difference recognition reflects the extent to which students acquire knowledge about cultural differences and the depth of their understanding of them. The surveyed students scored highest in cultural difference recognition, indicating that their cultural cognition is relatively well-developed.

Students' scores for communication focus and communication participation were lower than those for cultural difference recognition, indicating that their behavioral performance was not as strong as their cognitive performance. Most students recognize cultural differences and are willing to acquire cultural knowledge to achieve better learning outcomes. However,

learning about cultural differences is merely the cognitive aspect of cross-cultural sensitivity, which also encompasses behavioral and emotional dimensions.

Communication enjoyment and communication confidence were the two least ideal dimensions among the five, indicating that students lack awareness of the need to cultivate their own cross-cultural sensitivity. Vocational colleges tend to overlook the emotional factors of cross-cultural sensitivity across all dimensions.

Table 2: Current status of intercultural sensitivity

Dimensions	N	Minimum	Maximum	Mean	Standard deviation	Variance
Communicative participation	216	1.83	4.55	3.7251	0.54657	0.305
Differential recognition	216	1.38	3.77	3.9958	0.66618	0.457
Communicative confidence	216	1.52	4.79	3.1927	0.86786	0.722
Communicative pleasure	216	0.87	4.31	3.7171	0.68463	0.412
Communicative focus	216	0.54	4.51	3.8419	0.70932	0.522

The cross-cultural sensitivity scores of the 216 students surveyed and the overall average score are shown in Figure 1. It can be seen that the average cross-cultural sensitivity score of the students surveyed was 3.6945, which falls within the 3.41–4.3 score range mentioned earlier and is considered a medium-high level. Based on the distribution of data points in the figure, it can be seen that there are relatively large differences in cross-cultural sensitivity among individual students.
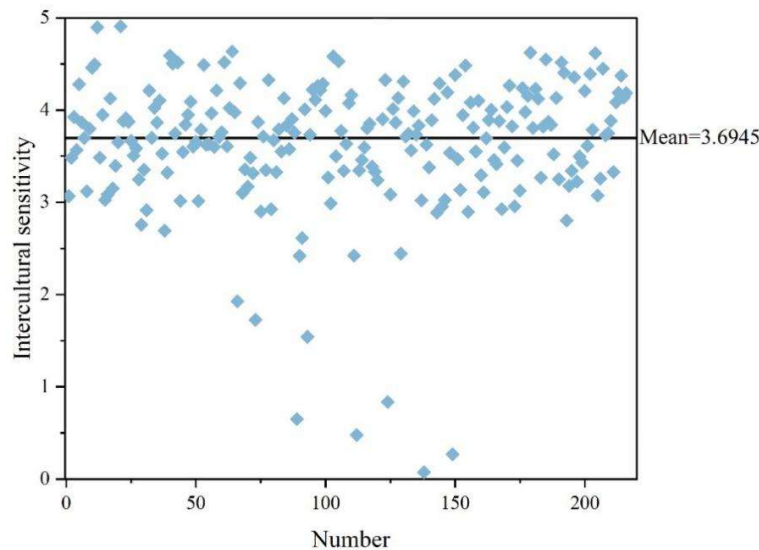

Figure 1: Mean score of intercultural sensitivity

III. B. Correlation Analysis of Cross-Cultural Sensitivity Dimensions

Pearson correlation analysis requires variables to be continuous numerical variables. In questionnaire studies, Likert scale data are generally considered continuous numerical variables. Therefore, Pearson correlation analysis is the most commonly used statistical method in scale analysis. A bivariate correlation analysis was conducted to test the correlation between cross-cultural sensitivity and its five dimensions. The results of the Pearson correlation analysis are shown in Figure 2. In the figure, D1 to D6 correspond to the five dimensions of communicative participation, acceptance of differences, communicative confidence, communicative enjoyment, and communicative focus, respectively, and their correlations with cross-cultural sensitivity. As can be seen, all correlation coefficients are marked with ** (** indicates $P < 0.01$), indicating that the correlations between variables are highly significant. Additionally, all correlation coefficients are greater than 0 but vary in magnitude, indicating that there are significant positive correlations of varying degrees between students' communication participation, acceptance of differences, communication confidence, communication enjoyment, communication focus, and cross-cultural sensitivity. The correlation coefficients between the five dimensions of communicative participation, acceptance of differences, communicative confidence, communicative enjoyment, and communicative focus, and cross-cultural sensitivity are 0.784**, 0.715**, 0.706**, 0.735**, and 0.512**, respectively. This indicates that the strength of the correlations between the five dimensions and cross-cultural sensitivity is ranked as follows: communicative engagement > communicative enjoyment > communicative confidence > difference acceptance > communicative focus.

Among the five dimensions, the results of Pearson's correlation analysis show:

(1) The correlation coefficient between acceptance of differences and communicative enjoyment is 0.452**, indicating a significant positive correlation between the two. This suggests that in cross-cultural communication, the more vocational English students accept cultural differences, the more enjoyment they derive from the communication process, and vice versa.

(2) The correlation coefficient between communication participation and communication confidence is 0.446**, and the correlation coefficient between communication participation and communication enjoyment is 0.462**, both of which are significantly positive correlations. Communication participation belongs to the behavioral level of cross-cultural sensitivity, while communication confidence and communication enjoyment are emotional-level contents. This indicates that actively participating in cross-cultural communication can effectively enhance vocational English students' emotional-level communication confidence and communication enjoyment related to cross-cultural sensitivity. In turn, the enhancement of communication confidence and communication enjoyment can also increase students' willingness to participate in cross-cultural communication and lead to better performance.

(3) The correlation coefficient between communication participation and acceptance of differences is 0.425**, which is also a significant positive correlation. During the process of participating in communication, students may discover gaps in their cultural background knowledge. To better engage in communication, enhance communication confidence, and gain more enjoyment, students will actively compensate for these gaps by learning cultural knowledge, thereby further enhancing their sense of difference recognition. Conversely, the more robust a student's cultural background knowledge, the more confident they will be in actively participating in cross-cultural communication, leading to increased frequency and depth of communication participation.
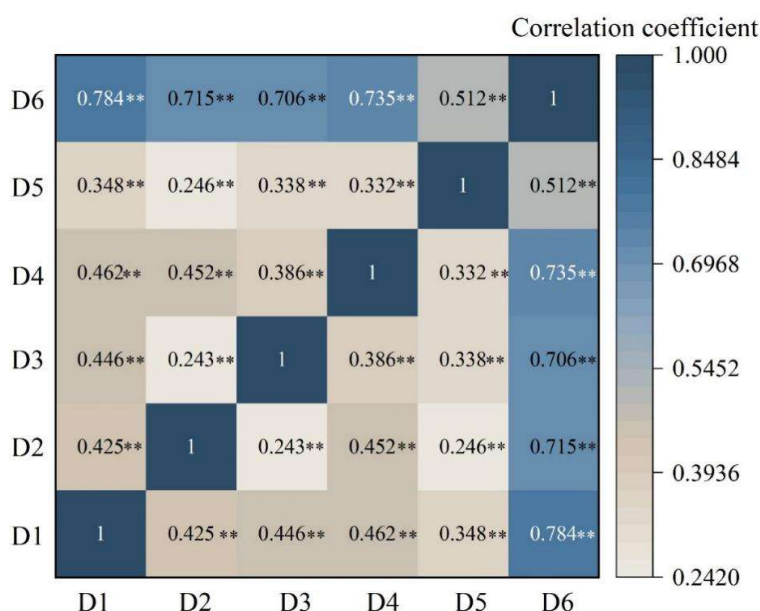

Figure 2: Correlation of dimensions of intercultural sensitivity

Based on the results of literature review and Pearson correlation analysis of the five dimensions of cross-cultural sensitivity, a diagram illustrating the interrelationships among the five dimensions is presented in Figure 3. The three levels—cognitive-level difference recognition, behavioral-level communication participation and communication focus, and emotional-level communication enjoyment and communication confidence—complement and interact with one another, forming a positive feedback loop that mutually reinforces and promotes each other. This provides a robust and reliable basis for the strategic recommendations proposed in this study. Based on this, the study suggests that to enhance students' communication confidence and communication enjoyment, in addition to directly proposing targeted recommendations through surveys, one can also indirectly improve the emotional dimension by enhancing difference recognition, communication participation, and communication enjoyment.
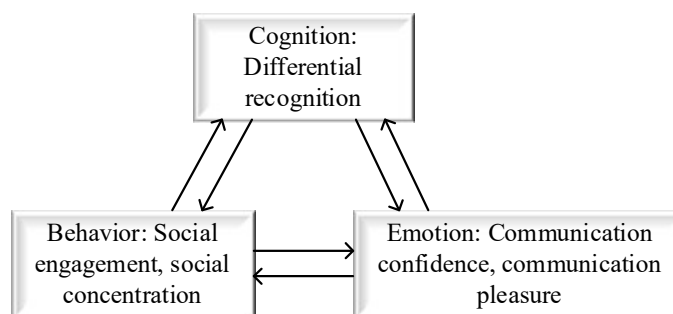
Figure 3: The relationship between the five factors of intercultural sensitivity

III. C. Analysis of Factors Affecting Cross-Cultural Sensitivity

III. C. 1) The Influence of Gender and Grade Level on Cross-Cultural Sensitivity

(1) The influence of gender on cross-cultural sensitivity

Regarding the differences in the influence of different genders on cross-cultural sensitivity, this paper used an independent sample t-test, with the results shown in Table 3. After testing, the probability P value = 0.072 (P > 0.05) was obtained through a two-tailed test for students of different genders in cross-cultural sensitivity, indicating that there is no significant difference between males and females in cross-cultural sensitivity. Specifically, for each dimension, the P-values for communicative participation (P = 0.106), difference acceptance (P = 0.547), communicative enjoyment (P = 0.342), and communicative focus (P = 0.684) were all P > 0.05, indicating no significant differences. The most significant difference was observed in the dimension of communicative confidence, with p = 0.024 (P < 0.05), indicating a significant difference. The average communicative confidence score for males (3.67) was significantly higher than that for females (3.32), indicating that males exhibit greater confidence in cross-cultural communication than females.

Table 3: The Influence of Gender on Intercultural Sensitivity

–	Male	Female	T	P
Communicative participation	3.7	3.75	−2.233	0.106
Differential recognition	3.84	3.92	−2.642	0.547
Communicative confidence	3.67	3.32	0.634	0.024
Communicative pleasure	3.37	3.42	−1.286	0.342
Communicative focus	3.45	3.45	−2.191	0.684
Intercultural sensitivity	3.61	3.57	−2.207	0.072

(2) The Impact of Grade Level on Cross-Cultural Sensitivity

The results of the differences in the impact of grade level on cross-cultural sensitivity are shown in Table 4. As shown in the table, the two-tailed test probability P-value for cross-cultural sensitivity across all grade levels is 0.018, which is less than 0.05, indicating a significant difference. Third-grade students demonstrate significantly higher cross-cultural sensitivity than first- and second-grade students. This may be directly related to the fact that third-grade students have accumulated more English knowledge and have richer language learning experiences. In specific dimensions, significant differences (P < 0.05) are observed between grade levels in terms of difference recognition and communication focus, and the mean values for third-grade students are higher than those for first- and second-grade students in all dimensions. Clearly, the accumulation of knowledge and experience with age has made third-grade students' perspectives on culture and cross-cultural communication more mature, and their participation in activities and communication practices more extensive, resulting in superior performance in the dimensions of difference recognition and communicative focus within cross-cultural sensitivity.

Table 4: The Influence of Grade on Intercultural Sensitivity

–	Grade 1	Grade 2	Grade 3	F	P
Communicative participation	3.62	3.42	3.78	2.064	0.121
Differential recognition	4.08	4.05	4.21	3.72	0.022
Communicative confidence	2.86	3.11	3.26	1.79	0.166
Communicative pleasure	3.48	3.35	3.33	2.188	0.118
Communicative focus	3.32	3.31	3.75	4.141	0.016
Intercultural sensitivity	3.47	3.45	3.67	1.403	0.018

III. C. 2) The Impact of Overseas Experience on Cross-Cultural Sensitivity

In terms of overseas experience, the specific differences in cross-cultural sensitivity between students with and without overseas experience are shown in Table 5. As indicated by the survey results in the table, a two-tailed test revealed a probability of $P = 0.156$ ($P > 0.05$) for cross-cultural sensitivity between students with and without overseas experience, indicating that there is no significant difference in cross-cultural sensitivity between the two groups. Specifically, for each dimension, the P-values for communicative participation, acceptance of differences, communicative confidence, communicative enjoyment, and communicative focus are 0.562, 0.275, 0.584, 0.667, and 0.752, respectively, all of which do not show significant differences ($P > 0.05$). Therefore, overseas experience does not influence students' cross-cultural sensitivity or any of its dimensions.

Table 5: The influence of overseas experience on intercultural sensitivity

–	Have experience abroad	No experience abroad	T	P
Communicative participation	3.83	3.69	3.806	0.562
Differential recognition	4.26	4.03	2.724	0.275
Communicative confidence	3.25	3.12	1.122	0.584
Communicative pleasure	3.34	3.36	9.883	0.667
Communicative focus	3.48	3.58	3.202	0.752
Intercultural sensitivity	3.63	3.56	6.715	0.156

III. C. 3) The Impact of Cultural Activities on Cross-Cultural Sensitivity

Cultural activities are one of the primary methods for higher vocational colleges to enhance the effectiveness of cultural education and serve as an important vehicle for campus cultural development. By statistically analyzing the frequency of students' participation in cultural activities, this study explores the impact of such participation on cross-cultural sensitivity. The specific analysis results are presented in Table 6. The data indicate that the number of times students participate in cultural activities does not directly affect their level of cross-cultural sensitivity ($P=0.589>0.05$), but it does significantly influence their communication confidence ($P=0.007<0.05$) and communication focus ($P=0.032<0.05$). Additionally, students who participated in cultural activities more than three times had higher average scores for cross-cultural sensitivity and its various dimensions compared to students who participated in cultural activities fewer than three times or never participated in cultural activities. Participating in English cultural activities helps improve students' communication confidence and communication focus levels. Vocational colleges should actively encourage students to participate in cultural activities to motivate them.

Table 6: The influence of the number of cultural activities on intercultural sensitivity.

–	More than 3 engagements	Less than 3 engagements	Never participate	F	P
Communicative participation	3.97	3.75	3.48	4.056	0.803
Differential recognition	4.19	4.07	3.99	1.466	0.214
Communicative confidence	3.39	3.11	2.88	8.344	0.007
Communicative pleasure	3.97	3.54	3.13	3.258	0.781
Communicative focus	3.8	3.71	3.29	7.426	0.032
Intercultural sensitivity	3.86	3.64	3.35	0.417	0.589

III. C. 4) The Impact of Teaching Methods on Cross-Cultural Sensitivity

Based on whether teachers incorporate and integrate cultural knowledge into their teaching process, teaching methods are categorized into non-cultural teaching methods and cultural teaching methods. The specific impact of teaching methods on cross-cultural sensitivity is shown in Table 7. According to the research results, the p-value for the significance of the difference between non-cultural teaching methods and cultural teaching methods in terms of cross-cultural sensitivity is 0.002, which is less than 0.05, indicating a significant difference. This suggests that incorporating cultural knowledge into teaching can significantly enhance students' cross-cultural sensitivity levels. Differences in cultural teaching not only manifest in students' cross-cultural sensitivity but also exhibit prominent effects in terms of difference recognition ($P = 0.005 < 0.05$) and communicative focus ($P = 0.012 < 0.05$).

Table 7: The influence of teaching methods on students ' intercultural sensitivity

-	Non-cultural teaching methods	Cultural teaching methods	T	P
Communicative participation	3.25	3.9	1.735	0.154
Differential recognition	3.68	4.3	4.796	0.005
Communicative confidence	2.67	3.35	9.413	0.547
Communicative pleasure	3.04	3.63	4.109	0.136
Communicative focus	3.22	3.83	5.495	0.012
Intercultural sensitivity	3.13	3.83	6.504	0.002

IV. Innovative Strategies for Cultivating Cross-Cultural Sensitivity in Higher Vocational English Education

Based on the analysis of the current state of cross-cultural sensitivity in vocational English education and its influencing factors discussed above, this chapter will propose innovative strategies for cultivating cross-cultural sensitivity in vocational English education from the perspectives of students, teachers, and vocational colleges, and offer relevant suggestions for enhancing students' cultural sensitivity.

IV. A. Innovative strategies from the students' perspective

(1) Adopt appropriate learning strategies to enhance cross-cultural sensitivity.

The broad concept of teaching strategies also includes student learning strategies. As the main subjects of cultural and knowledge learning, students must first set requirements for themselves and adopt certain learning strategies to achieve their goals. To enhance cross-cultural sensitivity, students can adopt two types of learning strategies: direct and indirect.

(2) Expand learning channels to enhance cross-cultural sensitivity.

The development of modern digital technology has provided students with numerous convenient and efficient learning platforms. By asking questions about the content encountered during the learning process and utilizing books, periodicals, learning materials, and online learning platforms, students can accumulate cross-cultural knowledge.

(3) Strengthen oral communication training to enhance cross-cultural sensitivity.

Language is the external expression of thought. The type of thinking a student has will be reflected in their oral communication. Therefore, during the English learning process, students should cultivate good logical thinking to enhance their oral communication skills.

(4) Strengthen attention training to enhance cross-cultural sensitivity

Students should pay special attention to improving their attention span during the knowledge accumulation process. They can enhance their attention span through in-class lectures, self-study sessions, and extracurricular reading. Extracurricular self-study is a process that tests a student's ability to learn independently. Therefore, students can use self-study sessions to enhance their independent learning abilities, thereby improving their attention span. Improving attention span can also begin with cultivating good reading habits. Before each reading session, students should set a specific reading time and refrain from doing other activities until the reading time has ended. In cross-cultural interactions, the ability to concentrate will translate into cross-cultural sensitivity and focused communication.

IV. B. Innovative Strategies from the Perspective of Teachers and Higher Vocational Colleges

(1) Promote the scientificization of teachers' teaching strategies through scientific teacher training.

Teachers' teaching strategies should not only enable students to master language knowledge, but also allow them to experience the culture embodied in the language. When selecting teaching strategies, teachers should take into account cultural differences, expand diverse cross-cultural teaching resources for students, and choose strategies that suit students' cognitive characteristics and preferences.

(2) Actively encourage and support students' participation in school-organized club activities.

Teachers and vocational colleges should actively guide students to learn through recreational activities, organize various types of cultural events, and maintain an open and encouraging attitude toward the management of cultural activities on campus. The cultural diversity of such activities can comprehensively enhance students' overall quality and improve their cross-cultural sensitivity.

V. Conclusion

This study took 216 business English majors at Shanghai Donghai Vocational & Technical College in China as the research subjects and used the Intercultural Sensitivity Scale (ISS) as a research tool to collect data related to the intercultural sensitivity of vocational college students through a questionnaire survey. Using the independent sample t-test and Pearson's correlation coefficient method, we conducted an in-depth exploration of the overall status of students' intercultural sensitivity, analyzed

the correlation between different dimensions of intercultural sensitivity, and identified the factors that influence intercultural sensitivity. According to the research data, the scores for each dimension of cross-cultural sensitivity among the surveyed students, ranked from highest to lowest, were as follows: Sense of Difference (3.9958) > Communication Focus (3.8419) > Communication Participation (3.7251) >Communication Enjoyment (3.7171) > Communication Confidence (3.1927). The average score for cross-cultural sensitivity was 3.6945, which falls within the medium-to-high range. There were significant positive correlations of varying degrees between students' communication participation, difference acceptance, communication confidence, communication enjoyment, communication focus, and cross-cultural sensitivity. The correlation coefficients between the five dimensions of communicative engagement, acceptance of differences, communicative confidence, communicative enjoyment, and communicative focus and cross-cultural sensitivity are 0.784**, 0.715**, 0.706**, 0.735**, and 0.512**, respectively. All five dimensions also exhibit significant positive correlations with cross-cultural sensitivity. Further analysis of the factors influencing cross-cultural sensitivity was conducted. There were no significant differences in cross-cultural sensitivity among students based on gender, overseas experience, or cultural activities ($P > 0.05$). However, there were significant differences in cross-cultural sensitivity based on grade level and teaching methods ($P < 0.05$). Finally, from the perspectives of students, teachers, and vocational colleges, corresponding innovative strategies for cultivating cross-cultural sensitivity in vocational English education are proposed, providing a reference for enhancing students' cross-cultural sensitivity.

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