

## Research on college English teaching based on intercultural communication in engineering universities

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**ABSTRACT:** In China, engineering universities traditionally have placed more emphasis on the cultivation of students' science and engineering knowledge, whilst ignoring the significance of intercultural communication ability. This article is based on a test of sophomores at an engineering university conducted to establish the correlation between their language ability and social culture competence. Based on the analysis of the results, suggestions on how to enhance students' intercultural communication awareness have been put forward.

### INTRODUCTION

In China, the foreign language field did not accord adequate significance to English cultural teaching and the relevant research until the 1950s. Since the 1980s, the teaching of culture has been given an important position in foreign language teaching. Especially in recent decades, foreign language teaching researchers have made great efforts to advance cultural teaching, both in China and other countries. Also, foreign language teachers have paid much more attention to cultural introduction in the teaching process. However, the question remains as to what is the real situation about the students' social cultural ability?

In order to find out about college students' English social cultural ability, some experts have undertaken relevant empirical research [1-4]. However, compared with the number of general discourses and speculative articles, the proportion of material based on empirical research is still low. Most of this research has focused on English-major students, and even though some take non-English majors, they tend to prefer the liberal arts specialty. Based on teaching practices over many years, the engineering university students' intercultural communicative competence is less than optimal.

According to a survey of 50 sophomores at Jiangsu University of Technology, 82% reported that they *never read the relevant books* about intercultural communication knowledge or non-language; 74% said they knew little about western communication customs; and when facing the English foreign language teachers, 38% of interviewees felt great psychological pressure and became speechless.

The aim in this article is to describe the real situation of intercultural quality cultivation in the English teaching process in an engineering university. Over a long time, the focus of China's higher education was to pursue professional education and too much attention was attached to students' business education and the cultural quality of education was ignored, especially, in science and engineering colleges. This has led to the fact that some students majoring in science only obtain technical textbook knowledge, while knowing less about social life. They are good at reading English, while have learnt much less about intercultural communication. They are able to think logically in both science and English language, but demonstrate poor competence and performance in communication with foreign business partners, and to the extent that misunderstandings occur. As well as describing the situation, the author of this article suggests some solutions.

### THE RESEARCH DESIGN

As culture is the main background for intercultural communication, engineering-major students were selected to test the correlation between their language ability and their intercultural communication skills.

## Subjects in the Research

One hundred sophomores coming from the Mechanical Engineering and Chemical Engineering Schools at Jiangsu University of Technology were the subjects of this study, comprising 43 men and 57 women aged from 18 to 22.

## Research Contents

The research content is based on two sets of tests: the language test used was the College English Test (CET) organised by China's Ministry of Education; the social culture test was adapted from the Test and Analysis of Social Culture, which is mainly related to social cultural knowledge, an outline of the UK and the USA, intercultural communication, and skills [3]. The structure and contents of the test are listed in Table 1.

Table 1: The structure and contents of the tests.

Code	Contents		Types	Number of items	Marks
1	Non-verbal behaviours	Common culture	Judgment	30	30%
2	Verbal behaviours				
3	Social cultural knowledge	Advanced culture	Multiple-choice questions	30	30%
4	Vocabulary cultural knowledge	Vocabulary culture	Multiple-choice questions	20	40%

The first part contains questions about non-verbal behaviour, including lifestyle, social etiquette, communication behaviour patterns (such as facial expressions, visual behaviour, gestures, posture, physical distance), as well as friendship, gifts, accepting gifts and attending gatherings.

The second part is also about non-verbal behaviour, which is related to the English social etiquette of daily greetings on different occasions, congratulations, praise, gratitude, invitations, accepting invitations to leave, as well as the differences between English and Chinese expressions, and the appropriateness of language exchanges [4]. The two choices of *decent* and *non-decent* behaviour are offered for each question.

The third part concerns social and cultural knowledge, which includes the geography, history, politics, economics, religion, festivals and other knowledge about the UK and the USA. The item types are multiple-choice questions.

The fourth part is mainly about vocabulary and cultural knowledge, related to differences in the American culture vocabulary, and the cultural meaning of names, idioms and slang, etc.

## Data Collection

One hundred questionnaires were distributed to students, and 97 valid responses were received, a response rate of 97%. Responses were processed with SPSS software package.

## RESULTS AND ANALYSIS

### The Comparison of Language Test and Social Culture Test

The result of the language test (converted into 100 points) and the result of the social culture test are listed in Table 2.

Table 2: Test results.

Number of students	Test items	Average marks	Highest marks	Lowest marks	SD	P
97	CET band 4	59.34	78	46	7.819	0.000
	Social culture test	45.19	64	28		

As is shown in Table 2, the students' average marks obtained for CET-4 was 59.34, while for the social culture test, the average was 45.19,  $P = 0.000$ , which means that there are huge differences between students' language test marks and those for their social culture test.

According to the correlation analysis of CET-4 marks and social culture test marks for which  $R = 0.186$  and  $P = 0.065$ , it can be concluded that they are basically irrelevant. In other words, whether the engineering students are able to undertake intercultural communication well is not decided by their language ability.

## The Comparison of Items of the Social Culture Test

The comparison of three items of the social culture test is shown in Table 3.

Table 3: The comparison of items from the social culture test.

	Test items	Average marks	Highest marks	Lowest marks	SD	P
97	Non-verbal behaviours	22.89	28	7	4.168	0.556
	Verbal behaviours	21.52	28	7	3.019	
97	Verbal behaviours	21.52	28	7	3.019	0.000
	Vocabulary culture knowledge	8.21	38	4	3.22	
97	Non-verbal behaviours	22.89	28	7	4.168	0.000
	Vocabulary culture knowledge	8.21	38	4	3.22	

According to Table 3, it is obvious that only the P value ( $P = 0.056$ ) for the mark of non-verbal behaviour and verbal behaviour is over 0.05, and the P value for both verbal behaviours and vocabulary culture knowledge, non-verbal behaviours and vocabulary culture knowledge is less than 0.050. Therefore, it can be concluded that there are no obvious differences between non-verbal behaviours and verbal behaviours. Furthermore, compared with non-verbal behaviours and verbal behaviours, the engineering students' marks for vocabulary culture knowledge are far from good.

Correlations between pairs of items in the social culture test, were calculated and are shown in Table 4.

Table 4: The correlation analysis of items in social culture test.

Number of students	Test items	R	P
97	Non-verbal behaviour	0.06	0.558
	Verbal behaviour		
97	Non-verbal behaviour	-0.128	0.206
	Social culture knowledge		
97	Non-verbal behaviour	-0.044	0.668
	Vocabulary culture knowledge		
97	Verbal behaviour	-0.029	0.777
	Social culture knowledge		
97	Verbal behaviour	-0.044	0.662
	Vocabulary culture knowledge		
97	Social culture knowledge	-0.058	0.57
	Vocabulary culture knowledge		

As is shown in Table 4, there is only one positive correlation in all comparison results, which is the correlation between verbal behaviour and social culture knowledge, where  $R = -0.029$  and  $R = 0.06$ , respectively. All the other correlations were negative, and their R values ranged from -0.029 to -0.128, which did not reach the significance level. Therefore, it can be concluded that all elements of social culture have less relevance.

## STRATEGIES

Based on the data above, it is obvious that the engineering students' social culture ability is inferior to their language ability. This situation has confirmed again that China's English education is still trapped in the language teaching domain. The low correlation between their language ability and social culture competence has shown that the effective relationship between these two abilities has still not been established. In other words, the students' language ability cannot impact on the improvement of their cultural knowledge.

## DEVELOPING STUDENTS' CULTURAL AWARENESS

English teachers should not only be acquainted with the importance of different cultures, and social and cultural knowledge between Chinese and English, but should also cultivate awareness of these cultures to the learners of English. Establishing the cultural similarities and distinctions is the main element in cultivating learners' cultural awareness. Although the similarities between different cultures are not difficult to master, students still tend to make mistakes in intercultural communications due to the lack of cultural awareness. If teachers fail to help students to form their awareness of cultural differences, they will behave according to their customary ways without being conscious of that. Thus, cultural differences should be the main areas for students to focus on. Teachers should outline the contents of culture in a text in the process of teaching, and ensure the different cultural knowledge is understood.

## COMMUNICATING WITH NATIVE SPEAKERS OF ENGLISH DIRECTLY

Due to the consideration of professional development, more and more foreign teachers are being employed in engineering universities, which provides more convenient opportunities for students to develop their relationships with native speakers of English. It is not only a good opportunity for them to develop their spoken English, but also the best approach for understanding the target culture. The teacher should encourage their students to talk with foreigners as regularly as possible. English enclaves can be regarded as the best place to communicate with foreigners who are studying or working in China, and the relationship between foreigners and learners of English can be established easily through this approach.

## INTEGRATING CULTURAL TEACHING IN CLASSROOMS

For English teachers, one of their tasks is to create a cultural atmosphere in English classes and to make the students know the English language, which exists not only in textbooks, but also in every aspect of our life. What English teachers should do is to discover these cultural factors from the activities in English classes, because students can understand the English countries' culture explicitly through English activities or games.

## TEACHING CASE

Taking Unit 7 in New Horizon College English IV as an example, the topic is *genetics*. Even though the development of genetic technology and the safety of GMO food has been arousing hot discussion both in the academic world and in society over the decade, students are still puzzled about the possible negative effect of genetic technology on everyday life. The reflection and debate on this *double-edged sword* has become a significant social issue, but is still short of the blending of scientific culture and human culture. Based on teaching experience, most college students have spent little or no time considering this issue, which makes them inadequate on the necessary background information. What is more, the texts are exclusively technological articles, and give few lines about social interaction and effects.

Normally, technical terminology and theoretical concepts will lead to the students being uninterested and easily distracted, and the in-class teaching effect cannot be satisfactory. Since the lack of knowledge of technical terminology and humanistic thought, engineering students may not perform well in class-time with the commonly-used communicative teaching methodology. To stimulate students' interest and sense of participation, movies, such as Jurassic Park are recommended, followed by dividing students into several groups for in-depth discussion and analysis of the ethical issues raised by technology and, then, a 10 minutes' PowerPoint presentation on the topic should follow. What is more, the documentary *Genetically Correct* from the Discovery channel was played, and students were directed to try to find the similarities between the text and documentary in argumentation, logic and standpoint.

Because this text has a large vocabulary on an esoteric topic, it is not suitable for students to discuss in class and, therefore, an *evasive* way of teaching is preferred by letting students try to narrate what they see and what they think, and by having the teachers' comments focus on how to make the cultural analysis and criticism, which is actually the basic way of language learning.

After seeing the film and preparing for presentation in class, students feel more familiar with the topic and their minds are full of thoughts on this issue, so it is easy for them to perform actively and confidentially during the class.

At the end of the class, several books were recommended for students to undertake further study on this topic, such as *High Tech High Touch: Technology and Our Search for Meaning Technology* by John Naisbitt et al [5] or *Endangered by Science?* by Albert Jacquard [6].

It is a sustainable teaching theory and method for introducing the cultural knowledge and intercultural communication sense into language teaching, which can help students to establish an independent language learning habit and gain the ability to understand rational and critical thinking on life and social issues. It is not necessary for an English teacher to know all the cultural knowledge of the target language. They should arrange or design some activities or games to let students obtain some knowledge of English through their own experiences. Students can comprehend the power of culture in communication easily through this way.

All in all, teaching culture in classrooms is very important for students. At present, English teaching is still packed with grammar knowledge and vocabulary, and students cannot have a deep understand of English without learning the culture. However, the teachers may still not know how to arouse students' learning interests without the focus on culture. The above descriptions provide some explanation of the importance of culture teaching and supply a motive power to further study of language and culture.

## CONCLUSIONS

In China, engineering universities have placed more emphasis on the cultivation of students' science and engineering knowledge at the expense of their intercultural communication ability that is also highly significant. This article outlines

investigation into sophomores at an engineering university carried out in order to find the correlation between their language ability, and social and cultural competence.

All in all, teaching culture in classrooms is necessary for students. English teaching is still packed with grammar knowledge and vocabulary, and students cannot have a deep understanding of English without learning about the culture. Teachers may still not know how to arouse students' learning interests without the focus on culture. This article provides some explanation of the importance of culture teaching and supplies a motive for further study of culture.

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