

A Study on Interaction in College English Class - Based on Courses for Non-English Majors in Wenzhou Medical University

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Abstract:

This study takes Wenzhou Medical University as an example to explore the status quo and the influencing factors of interaction in college English classrooms. Six real classes were recorded in audios or videos, and analyzed by using the iFIAS coding system. Then, a questionnaire was distributed to students, and interviews are followed as complements to the study. The results of the iFIAS coding system show that the overall level of interaction in college English class is good, but some problems emerge (1) teachers focus on lecturing but not posing questions; (2) teachers' direct influences account for too much; (3) students do not apply enough technology. From the results of questionnaire survey, the scores of each dimension of interaction are as follows: interaction orientation, interaction scope, frequency of interaction with technology, interaction depth, students' interests in acquiring English, and interaction frequency. Moreover, gender and English levels of students do not have a significant impact on classroom interaction, while students' grade, motivation, and personality have some.

Keywords:

Classroom Interaction, iFIAS, Learning Interest, Learning Motivation, Educational Technology

1. Introduction

Effective interaction in English class plays an important role in improving teaching quality. *College English Curriculum Requirements (2020 Edition)* (CECR) states that college English teaching should take the characteristics of a wide range of college English courses into account and strengthen the interaction between teachers and students [1]. At the same time, CECR points out that in terms of teaching methods, multimedia technology and modern information technologies such as artificial intelligence, virtual reality and big data should be integrated into college English education and teaching [2]. As we ushered in a new era driven by technology where the educational technologies are widely used, it is of great importance to study the behavior of using technology in the classroom. This thesis will investigate the status

quo of interaction in college English class, especially on the students-technology and teacher-technology interaction. As for experimental subjects, students and English teachers of Wenzhou Medical University are interviewed. Through classroom observation with the help of iFIAS coding system, questionnaire survey and interviews, teachers-students, students-students, and human-technology interaction under the blended teaching mode will be studied, with a view to promoting the interaction in college English classes and improving the teaching quality.

2. Research Design

2.1. Research questions

The present study focuses on the research topic of “interaction in college English class”. The following two main questions are discussed.

- (1) What is the status quo of interaction in college English class?
- (2) What are the factors that influence interaction in college English class?

3.2. Research procedures

To begin with, offline classroom observations were recorded in audio or video. Then, those records, were coded and analyzed by the iFIAS analysis program and coding assistant. Meanwhile, quantitative data was processed by SPSS software. The research makes a comprehensive investigation on the phenomenon of college English classroom interaction and its influencing factors in order to promote college English classroom interaction and improve teaching quality.

3.2.1. Research subjects

Participants involved in this study are students and English teachers from Wenzhou Medical University. This study randomly selected six English teachers and their students as the objects of classroom observation. Three English classes were filmed and the rest of them were recorded in audio. And students of the 6 classes are all non-English major students. In order to facilitate recording statistics and conducting the research, the six lessons are classified as CLASS 1, CLASS 2, CLASS 3, CLASS 4, CLASS 5 and CLASS 6. In CLASS 1, there are freshmen from A-level English class. In CLASS 6, there are freshmen from B-level English class. The students in CLASS 2, CLASS 3, CLASS 4 and CLASS 5 are sophomores who have passed CET-4 but have not passed CET-6 and all of them are classified into the same level of English class in Wenzhou Medical University.

3.2.2. Research instruments

Firstly, iFIAS is used to encode the recorded video and analyze the teacher-student interaction, student-student interaction, and human-technology interaction. The coding system's corresponding interpretation is shown in Table 1 [3]. With the help of coding system, every 3 seconds constitute one code unit. Each lesson lasts for 80 minutes and consists of two 40-minute sessions. Due to the fact that some teachers have utilized 5-minute break between two sessions of a class, there will be about 5 minutes difference. We have accumulated 1589 iFIAS codes in total for CLASS 1, 1606 iFIAS codes in total for CLASS 2, 1605 iFIAS codes in total for CLASS 3, 1581 iFIAS codes in total for CLASS 4, 1581 iFIAS codes in total for CLASS 5, 1690 iFIAS codes in total for CLASS 6.

Table 1. *The improved Flanders interaction analysis system.*

Classification		Code		Description
Teacher talk	Indirect influence	1		Teachers accept feeling
		2		Teachers praise or encourage
		3		Teachers accept or use student's ideas
		4	4.1	Ask open questions
	Direct influence		4.2	Ask closed questions
		5		Lecturing
		6		Giving direction
Student talk		7		Criticizing or justifying authority
		8		Response passively
		9	9.1	Response proactively
			9.2	Question proactively
Silence		10		Discussion with peers
		11		Silence or confusion that doesn't contribute to teaching
		12		Silence or confusion that is beneficial for teaching
Technology use		13		Teachers use technology
		14		Students use technology

Secondly, an anonymous questionnaire survey on interaction was distributed to college students in Wenzhou Medical University. The main purpose was to understand students' attitudes and opinions on interaction in college English class as well as their status quo of English class interaction. The questionnaire mainly refers to evaluation index of "teacher-student interaction in college" [4]. A total of 24 questions were set, all of which were single-choice questions. The questionnaire answers were set based on the five-level Likert scale. And the 24 items were classified into 6 dimensions, namely, interaction orientation (questions a1-a4), interaction depth (questions a5-a8), interaction scope (questions a9-a12), interaction frequency (questions a16-a19 and a24), frequency of interaction with technology (questions a13, a14, a20-a23), and students' interests in acquiring English (question a15). SPSS 26 was used for statistical analysis. Cronbach's Alpha of 0.931 indicates good reliability of the questionnaire, and KMO value of 0.917 indicates good validity of the questionnaire.

Thirdly, interviews were designed to know the status quo of interaction in college English class. It is complementary to the overall understanding of the situation of interaction with more in-depth information.

3. Data Analysis and Discussions

3.1. Class observation

The following 6 lessons will be qualitatively studied. As for statistical analysis, it falls into three aspects: the overall structure of classroom interaction, the interactive characteristics of posing questions and the characteristics of human-technology interaction and student-student interaction so as to understand the status quo of classroom interaction and summarize the characteristics of classroom interaction behavior.

3.1.1. The overall structure of classroom interaction

By analyzing the four aspects of teachers' language, students' language, silence that benefits teaching, and silence that does not benefit teaching, the overall structure of classroom interaction can be concluded. Teacher language ratio = Teacher language (code 1-7)/All teaching interaction behaviors (code 1-14). Likewise, the ratios for the other three aspects can be calculated. Table 2. provides statistics on these four dimensions.

Table 2. The overall structure of classroom interaction.

Class	Teacher language ratio	Student language ratio	Silence ratio	SN ratio
CLASS 1	67.23%	12.45%	7.61%	1.51%
CLASS 2	48.47%	9.93%	8.37%	0.31%
CLASS 3	78.95%	16.3%	3.94%	0.37%
CLASS 4	51.39%	18.27%	9.1%	1.52%
CLASS 5	74.46%	8.09%	0.63%	1.64%
CLASS 6	54.4%	33.35%	0.94%	1.75%
Norm	68%	20%	11-12%	

Note: SN represents Code 11: Silence or confusion that doesn't contribute to teaching

From the indirect and direct, positive and negative effects of teacher's influences on students, the characteristics of the interactive influence of lessons can be inferred. (Table 3)

Table 3. The interactive influence mode.

Class	indirect / direct influences (ratio)	positive / negative influences(ratio)
CLASS 1	42.91%	80.67%
CLASS 2	51.86%	114.42%
CLASS 3	60.61%	132.21%
CLASS 4	33.06%	104.50%
CLASS 5	41.25%	672.22%
CLASS 6	34.00%	142.68%
Norm	100%	100%

Note: indirect / direct (ratio) = the sum of code (1-4) / the sum of code (5-7); positive / negative (ratio) = the sum of code (1-3) / the sum of code (6-7) referred to Fang Haiguang et al. (2012)

According to Fang Haiguang et al. [3], the greater the proportion of indirect influence of classroom teaching interaction, the better class involvement will be. In all these classes, the indirect impact outpaced direct impact of teacher language on student.

3.1.2. The interactive characteristics of posing questions

Teachers' appropriate ways of raising questions can promote students' understanding, strengthen their acquiring of knowledge, and reflect their true understanding of knowledge through their answers. (Table 4)

Table 4. The characteristics of posing questions.

Class	Frequency of questioning	Ratio of questioning	Frequency of open-ended questions	Ratio of open-ended questions	Frequency of closed-end questions	Ratio of closed-end questions
CLASS 1	204	12.83%	156	76.47%	48	23.53%
CLASS 2	146	18.81%	87	59.59%	59	40.41%

CLASS 3	280	17.49%	141	50.36%	139	49.64%
CLASS 4	86	10.58%	55	63.95%	31	36.05%
CLASS 5	102	8.66%	67	65.69%	35	34.31%
CLASS 6	104	11.94%	74	71.15%	30	28.85%
Norm	--	26%	--	--	--	--

Note: Ratio of questioning= the frequency of teacher's questioning (code 4)/ the sum of teachers' speaking (code 1-7); Ratio of open-ended questions= the frequency of open-ended questions/ the sum of teachers' questioning; Ratio of closed-end issues= the frequency of closed-end issues/ the sum of teachers' questioning

In addition to teachers' ways of asking questions, students' responding plays a role in classroom interaction. As can be seen from Table 5, the active response ratio of students in all these 6 classes exceeds the norm, indicating that the teacher-student interaction in the classes meets the standard. Among them, the proactive response rate of CLASS 1 students is as high as 100%, indicating that students can actively respond to teachers' questions and have stronger learning initiative. According to the characteristics of college English courses, classroom interaction in CLASS 1 is more conducive to the cultivation of English communication skills and better results.

Table 5. *The characteristics of responding.*

Class	Frequency of students' response	Frequency of proactive response	Ratio of proactive response	Frequency of passive response	Ratio of passive response
CLASS 1	170	170	100%	0	0
CLASS 2	159	103	64.78%	56	35.22%
CLASS 3	239	207	86.61%	32	13.39%
CLASS 4	208	204	98.08%	4	1.92%
CLASS 5	16	14	87.5%	2	12.5%
CLASS 6	283	200	70.67%	83	29.33%
Norm	--	--	34%	--	--

Note: Ratio of proactive response= Frequency of proactive response (code 9) / Frequency of students' response (code 8-9); Ratio of passive response= Frequency of passive response (code 8) / Frequency of students' response (code 8-9); Ratio of student-student interaction = Frequency of student-student interaction (code 10) / sum of students

3.1.3. Characteristic of human-technology interaction and student-student interaction

As science and technology advance at a rapid speed, information technology has become an indispensable element in English teaching, especially for college ones. As is explicitly shown in the Table 6. every teacher uses it and teacher in CLASS 2 ranks the first.

According to what have captured in classroom observation and the interview after the class, it is partly because teacher in CLASS 2 uses two kinds of online tests that takes up more than 30% of the time in the whole class. And for teacher of CLASS 3 who spend nearly 0.5% of the whole class's time in utilizing technology, or say, PPT in this sense, she focuses heavily on face-to-face communication with students and prefers the traditional pattern of teaching, according to the interview. As for the subject using technology, generally speaking, teachers use more technologies than

students in class. Among the 6 classes, only in CLASS 1, students' use of technology outpaces that of teachers.

In addition to teacher-student interaction and human-technology interaction, student-student interaction in class cannot be overlooked. Among the 6 classes recorded, only CLASS 6 has a high ratio of peer interaction. (Table 6)

Table 6. *The characteristic of human-technology interaction and student-student interaction.*

Class	Ratio of using technology	Ratio of teacher using technology	Ratio of students using technology	Ratio of student-student interaction
CLASS 1	11.19%	33.15%	66.85%	1.76%
CLASS 2	32.92%	82.35%	17.65%	0
CLASS 3	0.44%	100%	0	1.37%
CLASS 4	19.72%	30.13%	69.87%	5.12%
CLASS 5	15.17%	52.50%	47.5%	7.08%
CLASS 6	9.56%	100%	0	15.68%

Note: Ratio of using technology = teachers use technology + students use technology (code 13-14) / the sum (code 1-14); Ratio of teacher using technologies = teachers use technology (code 13) / the sum of using technology (code 13-14); Ratio of students using technologies = students use technology (code 14) / the sum of using technology (code 13-14); Ratio of student-student interaction = code 10: student talk: discussion with peers / the sum (code 1-14)

3.1.4. Discussion on the results of class observation

From what have shown in the statistics plus the information from the interview, some good traits of interaction in college English class can be concluded as follows.

(1). The teacher's guidance is appropriate and moderate, which indicates the fact that teachers have changed the mindset of "teacher-centered" class.

(2). The silence time for each class did not reach the norm, meaning that the teacher is able to control the whole classroom, students actively give responds to teachers, and the teacher leaves sufficient time for students to consider.

(3). Teachers are willing to raise open-ended question rather than Yes-No ones, which is beneficial for students critical thinking. And students always give answers proactively.

(4). Teachers tend to provide various methods of positive teaching like encouragement and agreement, positively influencing students in class. For instance, in class, some teacher gave feedback right after student's answer by saying, "Amazing, you did a good job" or "Thank you very much" or "well done" and etc.

At the same time, there are some shortcomings reflected in these classes.

(1). Students do not have the chance or time to freely express themselves in class.

(2). Teachers do not ask students as many questions as they are supposed to do, the ratio of teachers' asking do not reach that of the norm. Rather, they prefer to pay too much attention to their lecturing.

(3). Students cannot involve the class well due to teachers' direct influences. From what have been observed in classroom observation, it has been found that teachers tend to give instructions like "read after me", "look at the book", and "take out your note" and etc.

3.2. Questionnaires

This part mainly explores the status quo of English classroom interaction, and its research contents are as follows: the first step is to analyze the status quo of interaction in classroom from descriptive statistics; the second is to explore the differences of English classroom interaction in demographic variables such as gender, grade, motivation to acquire English and personality by using independent sample T-test and one-way ANOVA.

3.2.1. The reliability and validity analysis

The total reliability value of the classroom interaction scale is higher than 0.9, and the reliability value of each internal dimension of the scale is higher than 0.7. It indicates that the reliability of classroom interaction scale is relatively good, and passes the consistency test.

Through the validity test of the classroom interaction scale, it can be seen that the KMO value of the whole scale is 0.917, and Approximate Chi-squared value is 4009.879, $P=0.000 < 0.01$. This demonstrates that the whole scale is suitable for follow-up research and analysis.

3.2.2. Basic information of survey subjects

Before doing further analysis, basic information as well as the reliability and validity analysis should be made. A total of 210 valid questionnaires were collected. Then the questionnaire was coded, and the data of the questionnaire was entered into SPSS successively. The basic information about the respondents is shown in the following Table 7.

Table 7. Basic information of survey subjects.

Variables	Category	Frequency/people	Ratio/%
Gender	Male	61(N=210)	29%
	Female	149	71%
Grade	Freshmen	88(N=210)	41.90%
	Sophomore	120	57.10%
	Senior	2	1%
The level of the English class	A-level	36(N=88)	40.90%
	B-level	52	59.10%
The score of CET-4 and CET-6	Not pass CET-4	3(N=122)	3.28%
	Have passed CET-4 but not pass CET-6	115	94.26%
	Have passed CET-6	4	2.46%

The survey results show that the average score of interaction in college English class is 3.4661, indicating that the overall level of interaction in classroom is above the average level. The average scores of each dimension from high to low are as follows: interaction orientation, interaction scope, frequency of interaction with technology, interaction depth, students' interests in acquiring English, and interaction frequency. (Table 8)

Table 8. Descriptive Statistics (N =210).

Dimensions	Min	Max	M	SD
Interaction orientation	2.25	5.00	3.8417	.77157
Interaction depth	2.00	5.00	3.4393	.57837
Interaction scope	2.75	5.00	3.6714	.69112

Interaction frequency	1.00	5.00	2.9762	.64296
Frequency of interaction with technology	2.14	5.00	3.4415	.58954
Students' interests in acquiring English	1.00	5.00	3.3905	.71210
The whole scale	2.67	5.00	3.4661	0.51618

3.2.3. Demographic variables of interaction in college English class

Five demographic variables, including gender, grade, level of English classes, motivation of acquiring English and personality were used as independent variables in the research. Dichotomous variable such as gender will be tested by Independent Samples t-test. And three or more than three-variables like grade, kinds of motivation and personality need One-Way ANOVA.

Through the One-Way ANOVA test, it can be found that students of various grades have significant difference in terms of interaction orientation ($F=20.098$, $P=0.000<0.05$), interaction depth ($F=18.380$, $P=0.000<0.05$), interaction scope ($F=20.794$, $P=0.000<0.05$), frequency of interaction with technology ($F=15.611$, $P=0.000<0.05$), and students' interests in acquiring English dimension ($F=13.149$, $P=0.033<0.05$). If seen from the whole scale, different grades still play a significant role. With a view to discovering the specific correlation, post hoc comparison (LSD) in SPSS 26.0 should be made. For convenience, freshman, sophomore, and senior were marked as FM, SO, and SN, respectively. After post hoc comparison, it was found that in all dimensions except for the frequency of interaction which do not have influence to the interaction, $FM > SO$. It represents that freshmen tend to receive more helps and guidance from their teachers in English classes. They are more involved in class and have more in-depth communications or interactions in class. Moreover, they are possessed with much more interests in acquiring English when compared with the sophomore counterparts. (Table 9)

Table 9. Analysis of grade differences in classroom interaction.

Grade	IO		ID		IS		IF		IF with T		SI	
	M	SD	M	SD	M	SD	M	SD	M	S D	M	S D
Freshmen	4.07	.79	3.6 8	.63	3.83	.77	3.22	.75	3.7 8	.69	3.1 6	.94
Sophomore	3.67	.73	3.3 1	.53	3.54	.64	2.92	.56	3.3 6	.55	3.3 2	.61
Senior	4.18	.72	3.6 2	.56	3.95	.68	2.90	.73	3.7 8	.63	3.3 5	.71
F	9.236		9.017		6.744		3.783		12.358		3.736	
P	.000		.000		.001		.024		.000		.025	
LSD	FM > SO, SN > SO		FM > SO, SN > SO		SN > SO				FM > SO, SN > SO			

Note: IO represents interaction orientation, ID represents interaction depth, IS represents interaction scope, IF represents interaction frequency, "IF with T" represents frequency of interaction with technology, SI represents students' interests in acquiring English

After the One-Way ANOVA test, it can be seen that students of various motivation have significant difference in terms of students' interests in acquiring English dimension ($F=6.913$, $P=.000<0.05$). With a view to discovering the specific correlation, post hoc comparison (LSD) in SPSS 26.0 should be made. For convenience, instrumental motivation, integrative motivation, resultative motivation and intrinsic motivation were marked as INS, INTE, R, and INTR respectively. After

post hoc comparison, it was found that $INS < R$, $INS < INTR$, indicating that students with instrumental motivation tend not to have strong interests in acquiring English compared with those possessed with resultative motivation and intrinsic motivation. And they do not have as many interactions in class as others. (Table 10)

Table 10. Analysis of motivation differences in classroom interaction.

Motivation	IO		ID		IS		IF		IF with T		SI		W	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Instrumental	3.82	0.8	3.41	0.58	3.65	0.71	2.89	0.64	3.45	0.62	3.28	0.66	3.42	0.52
Integrative	3.63	0.57	3.42	0.6	3.61	0.62	3.17	0.52	3.53	0.57	3.54	0.78	3.48	0.46
Resultative	3.98	0.69	3.57	0.62	3.81	0.61	3.21	0.65	3.74	0.62	3.8	0.8	3.69	0.55
Intrinsic	4.12	0.58	3.53	0.36	3.69	0.61	3.47	0.58	4.08	0.62	4	0.53	3.82	0.36
F	0.998		0.583		0.4		4.178		4.013		6.913		3.242	
P	0.399		0.627		0.753		0.007		0.008		0		0.023	
LSD							INS < R, INS < INTR		INS < R, INS < INTR		INS < R, INS < INTR		INS < R, INS < INTR	

Note: IO represents interaction orientation, ID represents interaction depth, IS represents interaction scope, IF represents interaction frequency, "IF with T" represents frequency of interaction with technology, SI represents students' interests in acquiring English, W represents the whole scale

After the One-Way ANOVA test, it can be seen that students of varying kinds of personalities show significant difference in terms of interaction orientation ($F=9.236$, $P=0.000<0.05$), interaction depth ($F=9.017$, $P=0.000<0.05$), interaction scope ($F=6.744$, $P=0.001<0.05$), frequency of interaction ($F=3.783$, $P=0.024<0.05$), frequency of interaction with technology ($F=15.611$, $P=0.000<0.05$), and students' interests in acquiring English dimension ($F=3.736$, $P=0.025<0.05$). And seen from the whole scale, $F=9.843$, $P=0.000<0.05$. With a view to discovering the specific correlation, post hoc comparison (LSD) in SPSS 26.0 should be made. For convenience, extroversion, intermediate type and introversion were marked as EX, IM, and INTRO respectively. After post hoc comparison, it was found that $EX > IM$. That is to say, extroverted people are more likely to be involved in interaction in English class. That is in concordance with what have been found in Ni's research [5] - extroverted students perform better than introverted students in the integration of professional skills and oral English. (Table 11)

Table 11. Analysis of personality differences in classroom interaction.

Personality	IO		ID		IS		IF		IF with T		SI	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Extroversion	4.07	0.79	3.68	0.63	3.83	0.77	3.22	0.75	3.78	0.69	3.66	0.94
Intermediate type	3.67	0.73	3.31	0.53	3.54	0.64	2.92	0.56	3.36	0.55	3.32	0.61
Introversion	4.18	0.72	3.62	0.56	3.95	0.68	2.9	0.73	3.78	0.63	3.35	0.71
F	9.236		9.017		6.744		3.783		12.358		3.736	
P	0		0		0.001		0.024		0		0.025	
LSD	EX > IM, INTRO > IM		EX > IM, INTRO > IM		INTRO > IM				EX > IM, INTRO > IM			

Note: IO represents interaction orientation, ID represents interaction depth, IS represents interaction scope, IF represents interaction frequency, "IF with T" represents frequency of interaction with technology, SI represents students' interests in acquiring English

As can be seen from Table 12, T statistics of undergraduates of different genders in terms of interaction orientation ($T=0.769$, $P=0.434 > 0.05$), interaction depth ($T=1.570$, $P=.118 > 0.05$), interaction scope ($T=0.723$, $P=0.470 > 0.05$), interaction frequency ($T=1.148$, $P=0.252 > 0.05$), frequency of interaction with technology ($T=-.056$, $P=0.956 > 0.05$) and students' interests in acquiring English ($T=1.538$, $P=0.126 > 0.05$) have not reached significant level. These results indicate that the gender will not influence the classroom interaction, which is not in accordance with what we have assumed before. (Table 12)

Table 12. Analysis of gender differences in classroom interaction.

	Gender	N	M	SD	T	P
Interaction orientation	male	61	3.91	.73	.769	.443
	female	149	3.81	.79		
Interaction depth	male	61	3.54	.68	1.570	.118
	female	149	3.40	.53		
Interaction scope	male	61	3.73	.70	.723	.470
	female	149	3.65	.69		
Interaction frequency	male	61	3.06	.67	1.148	.252
	female	149	2.94	.63		
Frequency of interaction with technology	male	61	3.44	.60	-.056	.956
	female	149	3.44	.59		
Students' interests in acquiring English	male	61	3.51	.70	1.538	.126
	female	149	3.34	.71		

Note: $p > 0.05$ shows there is no significant influence.

As is shown in Table 13, the levels of English classes will not make changes to the classroom interaction.

Table 13. Analysis of level of English class differences in classroom interaction.

	English class	N	M	SD	T	P
Dimension of interactive	A-level	36	4.03	0.67	-1.908	.060
	B-level	52	4.29	0.60		
Interaction depth	A-level	36	3.51	0.6	-2.420	.018
	B-level	52	3.82	0.56		
Interaction scope	A-level	36	3.82	0.69	-1.888	.062
	B-level	52	4.08	0.61		
Interaction frequency	A-level	36	3.04	0.77	-.148	.883
	B-level	52	3.07	0.78		
Frequency of interaction with technology	A-level	36	3.70	0.61	-1.221	.225
	B-level	52	3.87	0.63		
Students' interests in acquiring English	A-level	36	3.69	0.67	.264	.793
	B-level	52	3.65	0.74		

Note: $p > 0.05$ shows there is no significant influence.

3.2.4. Discussions on the results of questionnaire

According to the questionnaire, factors influencing the interaction in college English class are different grades, motivations to learn English and the personality while others like gender does not make a big difference in class interaction.

It can be seen that the average score of interaction orientation and interaction scope is higher than the overall average score of classroom interaction, indicating that teachers and students can maintain an equal and friendly relationship amid teaching process, and teachers are willing to offer helps and guidance to students. Moreover, the knowledge imparted in class is not limited to the textbook itself, but will involve career planning, learning methods, cutting-edge academic topics, or other kinds of knowledge beyond the textbook.

However, the average scores of interaction depth and interaction frequency are both lower than that of the overall level, which is a sign of the fact that the interaction in the classroom is mostly shallow informative question-answers, without deeper interaction and communication. Furthermore, teachers are still the “controller” and the “game changer” of the class, leaving students fewer involvements in class. The result is in accordance with what Zhou [6] has found -- the relationship between teachers and students in classroom teaching still shows a subject-object relation. And most importantly, only 7.6% of students say that they always communicate with their teachers after class while 20.5% of them deem that they hardly have communications with their teachers after class. Most of them, namely 56.7%, say that they sometimes talk to their English teacher off-class. As for the utility of technology, it is shown that such online learning platforms like Ding Talk and Chaoxing learning platform play a significant role in college students’ English learning and the interaction both in-class and off-class.

Based on the statistical analysis of the questionnaires, conclusions can be made as follows. Gender and the level of English classes of students in Wenzhou Medical University will not influence the interaction in English class. However, the grade of a student, motivation to learn English, and their personality will take effect in interaction. And the overall interaction in interviewed English classes is barely good. The statistics show that students have a harmonious relationship with their English teachers. In class, they have more contents to learn beyond the limitation of textbooks. However, students’ interests to acquire English is slightly low and they do not raise questions or communication with teachers in class and off class, which is not a good sign of interaction. And with the advancing development of science and technology, students and teachers are prone to utilize those cutting-edge gadgets in promoting English learning. That is in accordance with what Xu and Shu [7] has found – technologies are increasingly playing a significant role in English learning and interaction both in class and after class.

3.2. The pedagogical implications

According to the problems generalized through the analysis of classroom observation, questionnaires and interviews, this study tries to put forward corresponding solutions so as to improve the interaction in college English class.

First, teachers are advisable to create more chances for students to express themselves in target language like organizing group work, encouraging students to deliver a presentation on a certain subject and etc., rendering “students-centered class” a reality. Raising questions is one of the important means of English classroom interaction, playing a very important role in teaching. Teachers effectively ask questions, and guide students to think about them, strengthening students’ mastery and application of language knowledge. Asking questions cannot only encourage students to be involved in interaction, but also guide them to adjust their language and

optimize language output [8]. Thus, teachers are supposed to raise more questions to improve the overall development of interaction in English class.

Second, in college English class, rather than primary and secondary ones, teachers are advisable not to give too much directions or guidance. What they are supposed to do is give students initiatives.

Third, various kinds of motivation of acquiring English and personalities make difference in interaction. Students with instrumental motivation don't participate in as many interactions in class as others. And extroverted students are more likely to take part in interacting or communicating with teachers or their classmates in class.

Fourth, creating a harmonious relationship between students and teachers is a necessary element in promoting interaction. As for the content that has been imparted, it should be as extended as possible. Furthermore, as is shown in the questionnaire, more in-depth contents are advisable to be offered to students. And online platforms such as Chaoxing learning platform and MOOC are accessible to both students and teachers, facilitating the interaction and the learning process.

Fifth, interest is not only a powerful motivational process that empowers learning in various subjects, but also an indispensable factor for academic success. In terms of interaction in college English class, it also plays a significant role as what have been founded in the questionnaire. For ways to promote students' interests in learning English, it can be various, like providing English videos, novels, songs and films, interesting in-class activities, and etc.

4. Conclusions

This study focuses on the interaction in college English class in the context of "Blended teaching", exploring the status quo and the influencing factors of interaction in college English class. And some effective suggestions in interaction are given to improve the quality of English teaching and learning.

Six classes in Wenzhou Medical University were observed and recorded in audios and videos. And they were analyzed by using the iFIAS coding system to figure out the status quo of interaction in class. Some good traits of class interaction can be concluded. First, the teacher's guidance is appropriate; second, students actively give responds to teachers; third, open questions are widely used in class; and last, teachers are able to use positive teaching like encouragement and agreement, positively influencing students in class. However, there are also some problems in class. First, teachers pay too much attention to lecturing but not to posing questions; second, teachers' direct influences have taken up for too much; and last, students do not have opportunities to apply technology.

In addition to class observation and the iFIAS scale, a questionnaire was distributed to respondents and interviews are followed as a complement to the study.

It is found in the questionnaire that gender and English levels of students do not influence classroom interaction, while other components like students' grade, motivation, and personality have a significant impact on class interaction. According to the statistics, students have a harmonious relationship with their English teachers. And as for the learning contents, they have access to varied materials. Nevertheless, some problems emerge: students do not have interests in English learning; they do not raise questions or communicate with teachers, especially off class. These are the indications of poor performances in class interaction.

Although the author has conducted a relatively comprehensive and in-depth study on the interaction in college English class in Wenzhou Medical University, there are some limitations in the research due to the limited research time. Firstly, it should be a longitudinal study. That is to say, the conducted time should last for a period of time, such as a semester-long course. Secondly, the sample size of the survey is limited and needs to be expanded. Only 210 valid questionnaires were collected. If the geographical scope and sample data of the study can be expanded, there may be more discoveries. Thirdly, as for online interaction like the statistics of teacher-student and student-student interaction online, the author has already taken it into consideration, but the author still don't have time to carry it further. Therefore, in future studies, it is advisable to expand the number of subjects and prolong the duration of the study, so as to conduct a more detailed study on class interaction and to further explore the interaction online in the context of an increasingly technology-driven world.

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

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Appendix A iFIAS Analysis Matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Tally
1	5	9	0	0	2	1	0	0	0	0	0	0	0	0	8
2	0	11	10	0	10	1	0	0	0	0	0	0	0	0	32
3	0	9	32	8	21	3	0	0	3	0	0	2	0	0	77
4	0	0	0	119	28	3	0	0	35	0	1	18	0	0	204
5	0	3	1	49	504	30	0	0	7	1	0	7	1	0	603
6	1	0	0	14	12	98	0	0	1	2	2	9	3	5	145
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9	0	9	34	3	9	0	0	0	115	0	0	0	0	0	170
10	0	0	0	1	0	0	0	0	0	26	0	1	0	0	28
11	1	0	0	1	0	3	0	0	1	0	18	0	0	0	24
12	0	1	0	9	16	1	0	0	8	0	2	83	0	1	121
13	1	0	0	0	1	1	0	0	0	0	0	1	55	0	59
14	0	0	0	0	0	6	0	0	0	0	0	0	0	0	113
Tally	8	32	77	204	603	145	0	0	170	28	24	121	59	119	1590
Ratio	0.5%	2.01%	4.84%	12.83%	37.82%	9.12%	0%	0%	10.58%	1.76%	1.51%	7.61%	3.71%	7.48%	

CLASS 1

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Tally
1	199	2	0	7	7	0	0	0	0	0	2	0	2	0	219
2	0	8	9	1	7	0	0	0	0	0	0	0	0	0	16
3	0	0	1	0	6	0	0	0	0	0	0	0	0	0	7
4	6	2	0	45	29	0	0	1	10	0	5	3	1	0	102
5	12	2	1	39	717	8	0	0	3	0	3	3	10	0	798
6	0	0	0	1	6	25	0	0	0	0	0	0	3	1	36
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2
9	0	0	4	3	5	0	0	1	1	0	0	0	0	0	14
10	0	0	0	0	0	0	0	0	0	112	0	0	0	0	112
11	1	1	0	3	9	1	0	0	0	0	10	0	1	0	26
12	0	0	0	0	4	0	0	0	0	0	3	2	1	0	10
13	1	0	0	3	8	1	0	0	0	0	1	2	108	2	126
14	0	1	0	0	0	1	0	0	0	1	0	0	0	0	111
Tally	219	16	7	102	798	36	0	2	14	112	26	10	126	114	1582
Ratio	13.84%	1.01%	0.44%	6.45%	50.44%	2.28%	0%	0.13%	0.88%	7.08%	1.64%	0.63%	7.96%	7.21%	

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Tally
1	17	0	0	0	0	2	0	0	0	1	0	0	0	0	20
2	0	3	12	1	2	0	0	0	1	0	0	0	0	0	19
3	0	5	50	4	15	0	0	0	4	0	0	1	0	0	80
4	0	0	0	82	19	5	0	3	13	0	0	24	0	0	146
5	1	0	2	32	340	19	0	0	6	0	0	7	0	0	407
6	0	0	0	5	12	88	0	7	0	0	0	7	5	0	104
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	0	2	1	3	0	0	45	0	0	0	0	0	0	56
9	0	11	14	5	2	0	0	1	70	0	0	0	0	0	103
10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11	1	0	0	0	0	0	0	0	0	0	3	1	0	0	5
12	0	0	0	14	13	2	0	0	9	0	1	94	1	0	134
13	1	0	0	2	0	2	0	0	0	0	0	0	428	1	434
14	0	0	0	0	0	1	0	0	0	0	0	0	0	0	92
Tally	20	19	80	145	407	104	0	56	103	0	5	134	434	93	1601
Ratio	1.25%	1.19%	5%	9.12%	25.42%	6.5%	0%	3.5%	6.43%	0%	0.31%	8.37%	27.11%	5.81%	

CLASS 2

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Tally
1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	7
2	1	15	19	5	2	1	0	0	0	0	0	0	0	0	43
3	0	14	59	22	37	9	0	1	5	0	0	0	0	0	147
4	0	0	4	141	36	5	0	3	58	0	2	31	0	0	280
5	0	1	0	69	523	33	0	1	5	0	0	6	0	0	638
6	0	0	0	9	20	94	0	3	17	2	0	1	3	0	149
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	0	1	4	1	2	0	0	22	1	0	0	0	0	0	32
9	0	12	81	14	5	2	0	0	111	0	0	2	0	0	207
10	0	0	0	1	0	0	0	0	0	21	0	0	0	0	22
11	1	0	0	1	0	0	0	0	1	0	2	1	0	0	6
12	0	0	0	17	10	2	0	2	9	0	1	22	0	0	63
13	0	0	0	0	1	2	0	0	0	0	0	0	4	0	7
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tally	7	43	147	280	638	149	0	32	207	22	6	63	7	0	1601
Ratio	0.44%	2.69%	9.18%	17.49%	39.85%	9.31%	0%	2%	12.93%	1.37%	0.37%	3.94%	0.44%	0%	

CLASS 3

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Tally
1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	2
2	0	5	13	0	2	1	0	0	2	0	0	3	0	0	26
3	0	11	89	3	10	2	0	0	2	0	0	1	0	0	88
4	0	0	0	38	14	2	0	0	13	0	3	15	1	0	86
5	0	1	0	28	379	19	0	0	35	0	6	30	2	0	500
6	0	0	0	10	14	71	0	0	2	1	1	7	3	2	111
7	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
8	0	0	0	0	1	0	0	3	0	0	0	0	0	0	4
9	0	9	15	1	32	2	0	1	142	0	1	1	0	0	204
10	0	0	0	0	0	1	0	0	0	80	0	0	0	0	81
11	1	0	1	0	6	2	0	0	3	0	9	2	0	0	24
12	0	0	0	6	38	6	0	0	6	0	2	85	3	0	144
13	0	0	0	1	4	3	0	0	0	0	1	0	85	0	94
14	0	0	0	0	0	1	0	0	0	1	0	0	0	0	216
Tally	2	26	88	86	500	111	0	4	204	81	24	144	94	216	1582
Ratio	0.13%	1.64%	6.58%	6.44%	31.61%	7.02%	0%	0.25%	12.9%	6.12%	1.62%	9.1%	6.94%	13.78%	

CLASS 5

CLASS 4

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	Tally
1	11	0	0	2	3	0	0	0	1	0	0	0	0	0	17
2	0	9	0	1	2	2	0	0	4	0	0	1	0	0	19
3	2	6	18	8	22	0	0	1	23	0	1	0	0	0	81
4	1	0	1	38	16	3	0	16	23	0	2	3	1	0	104
5	1	1	0	40	488	14	0	0	11	0	1	4	8	0	568
6	0	0	0	5	6	52	0	2	9	2	3	3	0	0	82
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	1	0	10	4	4	0	0	60	1	0	1	0	0	0	83
9	0	2	92	3	12	1	0	4	125	1	0	0	0	0	200
10	0	0	0	0	0	2	0	0	0	249	0	0	0	0	251
11	1	0	0	0	4	3	0	0	1	0	18	1	0	0	28
12	0	1	0	1	5	1	0	0	2	0	1	3	1	0	15
13	0	0	0	2	6	2	0	0	0	0	0	0	143	0	153
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Tally	17	19	81	104	568	82	0	83	200	251	28	15	153	0	1691
Ratio	1.08%	1.19%	5.06%	6.5%	36.48%	5.12%	0%	5.18%	12.49%	15.68%	1.75%	0.94%	9.58%	0%	

CLASS 6

Appendix B Questionnaire

Questionnaire on interaction in College English Class

Dear students:

Thank you very much for taking the time to fill in this questionnaire. This questionnaire aims to understand classroom interaction phenomena in college English courses. The questionnaire is for research purposes only; your name will not be recorded, and there are no right or wrong answers. However, your responses are crucial for the completion of my research. I hope you will answer honestly based on your actual situation. Every question requires a response, and only one answer can be chosen per question.

I. Basic Information

1. Your Gender: A. Male B. Female
2. Your Year: A. Freshman B. Sophomore C. Junior D. Senior
3. Your Major:

-
4. The level of your English class is: A Level B Level C

Display condition: If Q2 Option A is selected

4. Your CET-4/CET-6 score: A. Haven't passed CET-4 B. Passed CET-4, haven't passed CET-6 C. Passed CET-6

Display condition: If Q2 Option B, C, or D is selected

5. Why do you study English:

- A. To pass exams, gain rewards, or meet career requirements
- B. To understand foreign cultures
- C. Because achieving good academic results gives me a sense of accomplishment
- D. Because I find learning English enjoyable

6. Your Personality Type: A. Extroverted B. Ambivert (Middle type) C. Introverted

II. Authentic Experience of college English classroom interaction

Based on your real experience in university English classes, please judge the following statements:
(Matrix scale question)

	Strongly disagree	Disagree somewhat	Neutral	Agree	Strongly agree
a1: Teachers and students have equal status in the classroom.	☐	☐	☐	☐	☐
a2: The emotional relationship between teachers and students is relatively harmonious in the classroom.	☐	☐	☐	☐	☐
a3: Teachers consider students' feelings during class.	☐	☐	☐	☐	☐
a4: Teachers provide students with suggestions and assistance in class.	☐	☐	☐	☐	☐
a5: Teachers pose challenging questions during class.	☐	☐	☐	☐	☐
a6: Teachers extend interaction time during class activities.	☐	☐	☐	☐	☐
a7: Teachers engage in heated discussions with students during class.	☐	☐	☐	☐	☐
a8: Both teachers and students draw upon ideas and perspectives from other disciplines when discussing topics in class.	☐	☐	☐	☐	☐
a9: Teacher-student interactions incorporate knowledge from other cultures.	☐	☐	☐	☐	☐
a10: Teacher-student interactions include knowledge related to career planning.	☐	☐	☐	☐	☐
a11: Teacher-student interactions include knowledge about learning methodologies.	☐	☐	☐	☐	☐
a12: Teacher-student interactions include content related to moral education.	☐	☐	☐	☐	☐
a13: Teachers utilize multimedia technology in the classroom.	☐	☐	☐	☐	☐
a14: I utilize multimedia technology during class.	☐	☐	☐	☐	☐
a15: I enjoy learning English and have a strong interest in it.	☐	☐	☐	☐	☐

Based on your real experience in university English classes, please judge the following statements:
(Matrix scale question)

In English classes, how often do you engage in the following activities:
(Matrix scale question)

	Never	Hardly ever	Sometimes	Often	Always
a16. I proactively ask questions during class	☐	☐	☐	☐	☐
a17. I actively participate in discussions	☐	☐	☐	☐	☐
a18. I respond to the teacher's open-ended questions	☐	☐	☐	☐	☐
a19. After thorough preparation, I deliver presentations on research topics	☐	☐	☐	☐	☐

After English classes, how often do you engage in the following activities:

(Matrix scale question)

	Never	Hardly ever	Sometimes	Often	Always
a20: I access or complete information related to the university English course on online learning platforms	☐	☐	☐	☐	☐
a21: I access or complete university English course-related information on WeChat	☐	☐	☐	☐	☐
a22: I access or complete university English course-related information on QQ	☐	☐	☐	☐	☐
a23: I access or complete university English course-related information on DingTalk	☐	☐	☐	☐	☐
a24: I communicate with the teacher outside of class	☐	☐	☐	☐	☐

The online learning platform I use is: _____

Display only when “Sometimes”, “Often”, or “Always” selected in Q-a20

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