

The Research of Interaction Performance of Intercultural Communication in Computer-supported Collaborative Learning

Yi WEI*, Li-Jie WU & Yi-Ling HU

Department of Educational Information Technology, East China Normal University, China

*toweiyi@163.com

Abstract: This study mainly investigated the relationship between the interaction performance and intercultural communication competence (ICC) in computer-supported collaborative learning (CSCL). We designed two instruction activities which can support the students collaborated with each other in a cross-culture environment. And we used teacher assessment and student questionnaire to evaluate the students' interaction performance and ICC. Correlation analysis and independent sample test were performed to process the collected data. The findings revealed Dissonance and Negotiation are the two phases during the interaction process correlated to many factors of students' ICC. And the interaction performance in CSCL has no significant difference between native speakers and non-native speakers.

Keywords: CSCL, interaction performance, ICC, intercultural sensitivity, intercultural effectiveness

1. Introduction

With the development of technology and the continuous progress of globalization, intercultural communication activities have become increasingly frequent and it can take place at anytime and anywhere. Computer-supported collaborative learning provided a convenient way for intercultural communication among students from different countries (Portalla and Chen, 2010). But the magnitude of these communication challenges increases as cultural differences among communicators widen. It requires students improve their ICC constantly to adapt to the development of this society.

Computer plays an important role in collaboration, some designs for CSCL include situations both working at a distance and face-to-face, as well as mixtures of synchronous and asynchronous collaboration (Goodyear, Jones and Thompson, 2014). ICC is a set of abilities (such as the knowledge, motivation, attitudes, and skills, etc.) to interact effectively and appropriately with members of different cultures (Peng and Wu, 2016; Spitzberg and Changnon, 2009; Wiseman and Koester, 1993).

In this study, there are two research questions: (1) Is there a correlation between the interaction process in CSCL and the students' ICC? (2) Is there any significant difference of the interaction performance between native speakers and non-native speakers?

2. Method

15 international high school students participated in this study (males=9, females=6). They came from 6 countries (American=1, Canadian=1, Chinese=7, Korean=2, New Zealander=1, Singaporeans=3). The students were divided into three groups and each group had five students of different levels. We designed two activities, and the scheme was "Professional Term". In the first activity, the students discussed how to explain these difficult terms more clearly. And in the second activity, students collaborated with their group members to make a PowerPoint to show their results. They cooperated to complete the tasks with computers, and the teacher gave some guidance to each group. All of them can speak English in the activities. The teacher observed and scored the students' interaction performance during the activities. And the students filled in the questionnaire at the end to measure their ICC. The

interaction process includes five phases: Sharing/Comparing, Dissonance, Negotiation/Co-construction, Testing Tentative Constructions, and Statement/Application of Newly-Constructed Knowledge (Gunawardena, Lowe and Anderson, 1997). The full score of each phase was 5, a score of 2.5 or more than 2.5 was good. The questionnaire includes two sections, the first part collects respondent information such as grade, class, gender and country, and the second part involves 44 items about intercultural sensitivity (24 items, including interaction engagement-IG, respect for cultural differences-RD, interaction confidence-IC, interaction enjoyment-IJ, and interaction attentiveness-IA) and intercultural effectiveness (20 items, including intercultural effectiveness-IE, behavioral flexibility-BF, interaction relaxation-IL, interactant respect-IR, message skills-MK, identity maintenance-IM, and interaction management-IN) (Chen and Starosta, 2000; Portalla and Chen, 2010). A 5 point Likert type scale (1 for strongly disagree and 5 for strongly agree) was used to rank the level of disagreement and agreement. And we processed these data by SPSS 19.0.

3. Result and Discussion

3.1 The Correlation between Interaction Performance and ICC

We used P1, P2, P3, P4, P5 to represent the five phases of the activity. The correlation between interaction performance of each phases and ICC is shown in Table 1. The results show that P1 was positively correlated with IR, but no significant correlation with other factors of ICC was found. P2 was positively related to RD and IJ, and it was significantly related to IR and IM. P3 correlated significantly with IR, and it also positively related to IL, MK and IM. Although P4 had a significant positive relationship with IR, it wasn't related to other factors. P5 was related to IL, and it also significantly correlated with IR. So, the second (Dissonance) and the third (Negotiation) phase in the process are worthy of more attention. In these two phases, the instruction design should be more clearly and detailed, and the teachers should give more appropriate scaffolding and guidance to student to help them accomplish these tasks successfully. In addition, IR was related to each phases of the activities. IR had a relatively strong correlation with P1, and it was significantly correlated with the other four phases. When we train students' ICC, we should focus on the cultivation of interactant respect ability.

Table 1: Correlations among variables of interaction phases and ICC.

Variables	P1	P2	P3	P4	P5	M	SD
IG	.381	.486	.504	.172	.247	3.53	0.364
RD	.299	.595*	.345	.121	.205	3.96	0.602
IC	.304	.477	.474	.228	.309	3.73	0.554
IJ	.243	.531*	.400	.133	.239	3.8	1.06
IA	.044	-.048	.111	.251	.031	3.6	0.726
BF	.045	.122	-.005	.002	.269	3.23	0.522
IL	.402	.461	.609*	.457	.529*	3.63	0.609
IR	.581*	.776**	.765**	.773**	.724**	3.87	0.602
MK	.297	.393	.528*	.316	.270	3.05	0.326
IM	.471	.741**	.563*	.458	.480	3.07	0.458
IN	.245	.479	.401	.278	.287	3.5	0.681
M	3.77	3.93	3.87	4.07	4.03	-	-
SD	0.961	0.821	0.915	0.942	0.64	-	-

*p<0.05, **p<0.01. P1—Sharing/Comparing, P2—Dissonance, P3—Negotiation/Co-construction, P4—Testing Tentative Constructions, P5—Statement/Application of Newly-Constructed Knowledge.

3.2 The Comparison of Interaction Performance between Native Speakers and Non-native Speakers

To compare the interaction performance of native speakers and non-native speakers, a t-test was implemented. The results are shown in Table 2. The mean value of interaction performance of the non-native speakers was higher than the mean value of native speakers in each phase. But all of the p value was more than 0.05. Although the interaction performance of the non-native speakers was better than that of native speakers, there was no significant difference between the two groups. Thus, the results indicate that the different native languages have no significant effect on student's interaction performance in CSCL.

Table 2: Independent Samples Test.

Variables	Non-native speaker		Native speaker		t	p	95% CI	
	M	SD	M	SD			LL	UL
P1	4.21	.636	3.38	1.061	1.822	.092	-.1561	1.8347
P2	4.14	.690	3.75	.926	.920	.375	-.5300	1.3158
P3	4.21	.488	3.56	1.116	1.496	.166	-.3208	1.6243
P4	4.50	.408	3.69	1.132	1.894	.091	-.1577	1.7827
P5	4.29	.488	3.81	.704	1.490	.160	-.2130	1.1595

*p<0.05, **p<0.01.

4. Conclusion

This study designed two activities to investigate the correlation between the interaction performance and ICC as well as the difference of interaction performance between students with different native languages. The results show that Dissonance and Negotiation are the most important phases of CSCL because they correlated to many factors of students' ICC. Thus, when designing intercultural activities in CSCL context, teachers should pay more attention to these two phases. And it is necessary to provide more appropriate scaffolding and guidance in Dissonance and Negotiation. Besides, there is no significant difference of the interaction performance in CSCL between native speakers and non-native speakers. It indicates that native language has no significant effect on the performance of collaboration. This study is limited by the small sample size. It is unclear whether there is any significant difference between students' interaction performance in CSCL. In our further study, we hope expand the scale of sample size and explore the specific factors that influence the students' ICC in the CSCL.

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