The relationships between awareness, attitudes, cognitive skills, and knowledge of others regarding intercultural communication

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Abstract

This study examines the associations between awareness, attitudes, cognitive skills, and knowledge of others regarding intercultural communication. Although intercultural communication has been vastly explored in the field of social sciences, its definitions vary greatly due to the complexity of the concept and scope of intercultural communication. Given that awareness can predict knowledge and attitudes, it is timely to investigate the impacts of awareness on the targeted variables. Data was collected from questionnaires administered to 452 university students in an underexplored context of Vietnam. After data cleaning, the data provided by 421 respondents were projected to SPSS version 27 for analysis. Attempts to investigate research reliability and validity indicate that data was generally normally distributed. Also, the model fit statistics were satisfactory. Convergent and discriminant validity met the statistical standard. Results show that awareness was a positive antecedent of attitudes and knowledge of others. Also, intercultural cognitive skills were a mediating factor in the relationship between awareness and knowledge of others. Findings suggest implications for educating intercultural communication.

Keywords: awareness, attitudes, intercultural cognitive skills, intercultural communication, knowledge of others

1. Introduction

Intercultural communication has gained a proliferating interest in social sciences. Although numerous definitions of intercultural communication have been proposed due to its complexity, intercultural communication is widely referred to communication between people with different cultural backgrounds (Borghetti, 2013; Deardorff, 2009). Intercultural communicative competence (ICC) is closely related to four main dimensions: knowledge, skills, awareness, and attitudes which develop from real-life communication (Cong-Lem, 2025; Huynh, 2025). Recent research has also concluded that ICC develops not only from face-to-face but also from online communication.

Despite a great number of proposals about the the construct and components of intercultural communication, little is known about predictors of ICC in Asia contexts. Most explorations into predictors of IC reflected Western contexts. As intercultural communication is context-sensitive (Deardorff, 2006; Neuliep, 2020), investigations into the determinants of intercultural communication aspects can shed light on what educators and learners need to focus on to improve Asian students' intercultural communication capability. To fill this gap, this study investigated into the extent to which knowledge, attitudes and awareness regarding intercultural communication predict intercultural cognitive skills in a context of Vietnam.

2. Literature Review

2.1 Early endeavors in ICC

Intercultural communication began to draw researchers' attention in the 1970s. The earliest definition of intercultural communication may be traced to Hymes's (1972) endeavor. Accordingly, intercultural communication comprises not only knowledge of language, as proposed by Chomsky (1980), but also communicative competence. Drawing data from a large-scale study in different contexts, Ruben (1976) proposed that intercultural communication should be referred to as how people succeed in communication, measured by aspects of communication, such as attitudes and behaviors. Hammer and associates (1978) defined intercultural communication as a concept of interpersonal relationship. These early attempts have ignited different orientations and further research into intercultural communication.

The literature of intercultural communication has been expanded over the last three decades, introducing emerging terms and concepts. Three terms that have been used widely are ICC (Fantini, 2006), intercultural awareness (Chamberlin-Quinlisk, 2005) and intercultural sensitivity

(Bennett, 1993). Also, related concepts have been proposed. For instance, Lustig and Koester (2007) noted that intercultural communication effectiveness should be examined through the lens of context. Accordingly, instead of evaluating communication to be good or bad, the scale of appropriateness was recommended. Also, ICC is proposed to be in relation to knowledge, motivation, and behavior. Gudykunst (1993) argued for the use of three indicators of ICC: knowledge, motivation, and skills. Some other scholars (e.g. Deardorff, 2006; Fantini, 2006) held a belief that attitudes and awareness should be the core components of ICC. As Chau et al. (2024) noted, what people have learned at school and communication with foreigners in educational contexts can transfer to intercultural competence mediated by cognition.

Among various proposals of ICC exisiting in literature, Byram's (1997) proposal has been recently approved and employed most widely (Deardorff, 2006, p. 239). It consists of six main components: "knowledge of others, knowledge of self, skills to interpret and relate, skills to interact, valuing others' values, beliefs, and behaviors, and relativizing one's self" (see Figure 1). Pursuing this research strand, Deardorff (2006, p. 233) proposed that ICC is "the ability to interact effectively and appropriately in intercultural situations, based on specific attitudes, intercultural knowledge, skills, and reflections", in which effectiveness and apppropriateness should be assessed by examining attitudes, knowledge, skills, and reflections.

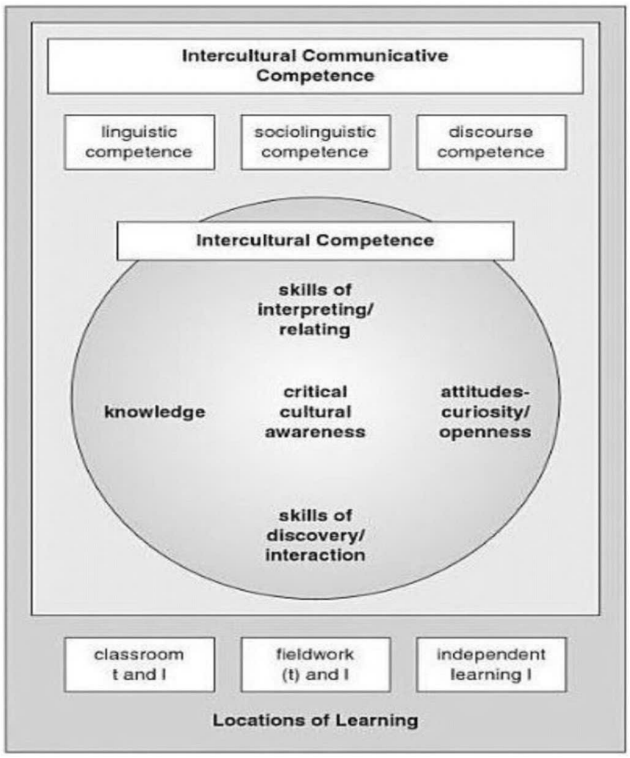

Figure 1. Bryam's ICC model

2.2 Awareness and attitudes

Awareness, commonly referred to as attention, is acknowledged to be essential for learning and acquisition of knowledge and skills (Sweldens et al., 2014). In educational contexts, students' attention is known to contribute to affordances and achievement of the targeted outcomes or goals. Their attention may be attributed to their access to available resources and realization of cultural similarities and differences. The relationship between awareness and attitudes is well documented in the literature. According to Peng et al. (2015), awareness can help one not only realize cultural values but also evaluate and adapt to cultural situations in communicating with people from other cultures. Accordingly, attention necessitates the development and growth of one's attitudes. That means, people's experience of intercultural communication situates opportunities for their emotions, negative or positive, to occur, forming their attitudes to intercultural communication.

H1: Awareness positively influences attitudes regarding intercultural communication.

2.3 Awareness, knowledge of others, and intercultural cognitive skills

Over time, their knowledge of other cultures is accumulated and develops through intercultural communication. As ICC refers to "the ability to move beyond one's own cultural boundaries and

interact effectively and appropriately with speakers from different linguistic and cultural backgrounds" (Huang, 2021, p. 56), effective intercultural communication needs knowledge of one's own and others to adapt to cultural norms and practices. When communicating with others, people's attention may provide opportunities for interlocutors to realize possible similarities and differences between their own culture and others (Peng et al., 2015; Wu et al., 2023). That is, awareness is indispensable for knowledge development, transformation, and internalization. Also, awareness is essential for cognitive skills (skills to learn and acquire the values of other cultures). Thus, we propose the following hypotheses:

H2: Awareness positively affects knowledge of others.

H3: Awareness positively influences intercultural cognitive skills.

Considering that intercultural communication can provide students with many opportunities to learn from other cultures, intercultural cognitive skills may facilitate knowledge growth and transfer through intercultural communication. In other words, intercultural cognitive skills is essential for one to engage in intercultural communication from which they attain knowledge of others. Thus, this study proposes the following hypothesis:

H4: Knowledge of others is positively predicted by intercultural cognitive skills.

2.4 Hypothesized model

The four hypotheses formulated about the relationships between awareness (AN), attitudes (AT), knowledge of others (KO), and intercultural cognitive skills (ICS) suggest the model for this study (see Figure 2). Accordingly, AN is an independent variable, and ICS is a mediator.

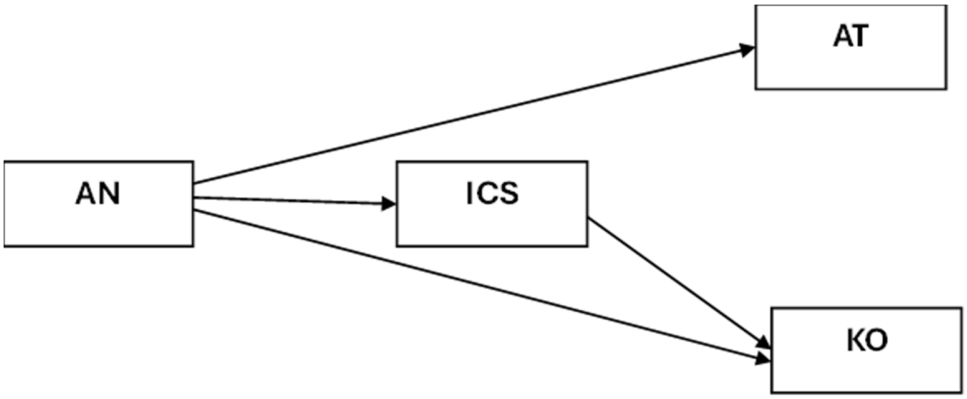

Figure 2. Research model

3. Research Methods

3.1 Participants

A sample of 452 Vietnamese university students were recruited (see Table 1). They were all locals who had never been overseas and pursued diverse disciplines. They participated in the study on a voluntary basis. The paricipants in all the pursued majors included males and females, except for engineering.

Table 1. Description of participants

	Discipline (N=452)	Sample	Age (M)	Academic year (M)	Gender	
					Male	Female
1	Accounting	68	25.24	2.9	37	31
2	Business administration	73	24.36	2.7	42	31
3	Tourism and hospitality	57	20.17	3.1	29	28
4	Engineering	65	19.58	2.4	65	0
5	Literature	38	20.09	3.1	12	26
6	Mathematics	42	21.11	3.9	37	5
7	Physics	39	20.42	2.8	21	8
8	Chemistry	36	20.53	2.9	22	4
9	Biology and environmental studies	34	20.34	2.6	19	15

3.2 Instruments

This quantitative study employed a set of four bilingual (English and Vietnamese) questionnaires to collect nuanced data. As it targeted Vietnamese university students, we selected a university offering a diversity of disciplines. Attached to the questionnaires were three sections. The participants were required to (1) provide demographic information (discipline, academic year, gender, and age), (2) sign the consent form, and (3) read through the ethical considerations. The participants who did not fulfill these requirements were not considered eligible for the study.

3.2.1 Knowledge of others (5 items)

Considering the availability of instruments, we decided to adapt the measure of knowledge of others (KO) proposed by Wu et al. (2013) as it mainly refers to intercultural communication. In particular, it describes one's understanding of the values of other cultures. This original questionnaire consists seven items. We combined Item 2 "Understanding foreign social norms", Item 4 "Understanding cultural taboos" and Item 5 "Understanding foreigners' speech" into one

item “Understanding social and cultural norms”. As a result, five items remained in this questionnaire.

3.2.2 Intercultural cognitive skills (3 items)

The questionnaire of intercultural cognitive skills (ICS) by Peng et al. (2015) was adopted. It entails how one learns and acquires cultural values and strategies and manages cultural conflicts in intercultural communication. This questionnaire is comprised of 3 items.

3.2.3 Awareness (3 items)

We adapted the questionnaire of awareness (AN) proposed by Wu et al. (2013). This questionnaire includes 3 items confined to one’s realization of cultural values and emerging occurences in intercultural communication. Regarding the validity of this construct, we changed the wording in the last item “juding the cultural situations from both one’s own and the other’s cultural perspective” to “being aware of the cultural situations from both one’s own and the other’s perspective on culture”.

3.2.4 Attitudes (3 items)

The questionnaire of attitudes (AT) developed by Peng et al. (2015) was adapted because this questionnaire basically delineates one’s attitudes to their own and others’ cultural values. After we scruitinized this questionnaire carefully, we decided to make changes to the three items to increase its generalizability. More specifically, Item 1 “willingness to learn from those who differ from one’s own and culture” was changed to “willingness to learn from other cultures when communicating with foreigners”. Item 2 “willingness to respect foreigners’ lifestyles and customs” was changed to “willingness to respect differences in cultural identity when communicating with foreigners”. Item 3 “willingness to learn foreign languages and cultures well” was changed to “willingness to communicate with those from other cultures”.

3.3 Data Collection

Data was collected in the first quarter of 2024. After we asked for permissions from the Board of Directors and Academic Council (ethics), we contacted Office of Student Affairs for the contact information of the targeted students (freshmen, sophomores, and juniors). We did not target seniors because they could be busy preparing to graduate.

The data collection procedure consisted of 3 main phases. First, we sent an invitation email. Second, after we received responses, we made oppointments and organized face-to-face meetings, based the students' time availability. Finally, when we administered the questionnaires, we explained every single item and the enclosed information (ethics and consent) in the students' native language (Vietnamese).

3.4 Data Analysis

Data was projected to SPSS package (IBM, NY) version 27 for analysis. After data cleaning, the sample size was reduced from 452 to 421. We referenced the data analysis procedure with five main stages proposed by Kline (2023). First, normality tests (Skewness and Kurtosis) were employed to examine the data distribution. Second, reliability of each scale was investigated by using internal coefficient consistency (Cronbach's alpha). Third, descriptive statistics were explored. Fourth, we ran confirmatory factor analysis (CFA) to examine the validity of the instruments. Finally, we tested the hypotheses by examining the relationships between the targeted variables.

4. Results

4.1 Initial data analysis

Results of normality tests and descriptive statistics show that the data was symmetrical, not inclined to the left or right (see Table 2). Skewness and Kurtosis values were within ±1.96, indicating that the data was normally distributed. The variances were all smaller than 1, ranging from slightly higher than .6 to marginally greater than .9. Also, the variability in standard deviation (SD) was restricted, suggesting the ratings of individual respondents were very closed and therefore acceptable (Misha et al., 2019).

Table 2. Data distribution and descriptive statistics

N=421	KO1	KO2	KO3	KO4	KO5	ICS1	ICS2	ICS3	AN1	AN2	AN3	AT1	AT2	AT3
Mean	4.05	3.97	4.08	4.07	4.10	4.01	4.02	4.05	4.01	4.02	4.02	3.89	3.91	3.87
SD	.76	.79	.79	.76	.80	.79	.79	.79	.83	.82	.83	.95	.96	.97
Variance	.583	.623	.632	.583	.634	.626	.623	.623	.700	.673	.683	.910	.916	.936
Skewness	-.185	-.292	-.203	-.189	-.314	-.050	-.109	-.097	-.116	-.074	-.074	-.413	-.434	-.359
Kurtosis	-.995	-.553	-1.233	-1.077	-.973	-1.325	-1.234	-1.388	-1.331	-1.446	-1.469	-.826	-.834	-.928
Minimum	2.00	2.00	2.00	2.00	2.00	2.00	2.00	3.00	2.00	2.00	2.00	2.00	2.00	2.00

Maximum	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00

An investigation into the scale reliability shows that the scales each had a high reliability (see Table 3). The values of Cronbach's alpha were all greater than .9. The corrected item-total correlation was higher than .5. The statistics show that the items should not deleted from the scale which they were assumed to belong to (Hair & Hair, 2010).

Table 3. Scale reliability

Scale	Item	Scale variance if item deleted	Corrected item-total correlation	Cronbach's alpha if item deleted	Scale reliability
KO	KO1	7.770	.790	.909	.924
	KO2	7.668	.784	.911	
	KO3	7.496	.825	.902	
	KO4	7.857	.766	.914	
	KO5	7.410	.847	.898	
ICS	ICS1	2.373	.924	.948	.965
	ICS2	2.377	.923	.949	
	ICS3	2.373	.926	.947	
AN	AN1	2.535	.915	.931	.956
	AN2	2.596	.909	.935	
	AN3	2.595	.899	.942	
AT	AT1	3.402	.844	.911	.931
	AT2	3.328	.869	.891	
	AT3	3.313	.861	.897	

CFA provided statistical results for consideration. First, KMO shows the measure of sampling adequacy was .859 ($\chi^2 = 5953.688$; df=91; p<.001). There were four factors with loadings greater than .7 (see Table 4). The loading cumulative was 74.780%, with eigenvalue greater than .1. The statistics fit the model well. It confirmed the components or variables in the dataset. The model fitness was found with Chi-square $\chi 2$ (CMIN/DF) = 3.201 (p < .001), goodness of fit index (GFI) =.815, comparative fit index (CFI) =.973, Tucker–Lewis index (TLI) =.966, relative fit index (RFI) = .952, incremental fit index (IFI) =.973, root mean square error of approximation (RMSEA) =.072, PCLOSE = .05, and WRMR =.754.

Table 4. Loadings

	1	2	3	4
ICS1	.959			
ICS2	.958			
ICS3	.937			
AN1		.796		

AN2	.770		
AN3	.807		
KO1		.839	
KO2		.823	
KO3		.874	
KO4		.794	
KO5		.889	
AT1			.852
AT2			.874
AT3			.877

4.2 Testing the hypotheses

Scalar estimates show that the four hypotheses were tested and confirmed (see Table 5). The impact of AN on AT was the greatest, with the highest regression weight (r=.693). The relationship between ICS and KO was the smallest, with r=.133. The four relationships were significant (p<.05).

Table 5. Regression weights

			Regression	Standardized regression	S.E.	C.R.	*p*	
ICS	<---	AN	.454	.463	.046	9.915	***	Supported
AT	<---	AN	.768	.693	.049	15.730	***	Supported
KO	<---	AN	.201	.215	.053	3.792	***	Supported
KO	<---	ICS	.126	.133	.054	2.350	.019	Supported

Although the four hypotheses were supported, the regression weight for the association between ICS and KO was low. We decided to remove this relationship. However, after the removal of the impact of ICS on KO, the Chi-square (CMIN/df) increased to 3.232. Finally, we decided to use the original model, with the probability level < 0.001.

Results also show that the intercepts were significant (p<.001). The standard error (S.E) was low (<.05). According to Byrne (2016) and Collier (2020), the estimates, standard errors, critical ratios, and significance levels were acceptable.

Table 6. Intercepts

	Estimate	S.E.	C.R.	*p*
AN3	4.026	.040	99.984	***
AN2	4.026	.040	100.689	***
AN1	4.010	.041	98.336	***
ICS1	4.012	.039	104.036	***
ICS2	4.029	.038	104.723	***
ICS3	4.055	.038	105.385	***
AT1	3.893	.046	83.738	***
AT2	3.914	.047	83.899	***
AT3	3.872	.047	82.117	***
KO5	4.095	.039	105.540	***
KO4	4.074	.037	109.500	***
KO3	4.081	.039	105.360	***
KO2	3.967	.038	103.142	***
KO1	4.052	.037	108.896	***

Th construct validity was investigated by using convergent and discriminant validity. The values of average variance extracted (AVE) were greater than .5, varying from marginally higher than .7 to around .9. The critical ratios (CR) were all greater than .9. Heterotrait-Monotrait or Heterotrait-Monotrait Ratios of Correlations (HTMT) were lower than .9. Values of MSV were lower than those of AVE. We referenced Hair et al. (2018) and Henseler et al. (2015), concluding that there were no validity concerns and no warnings for this HTMT analysis.

Table 7. Construct validity

		AVE (>.5)	CR (>.9)	MSV	HTMT (<.9)			
					ICS	AN	AT	KO
1	ICS	.901	.965	.213				
2	AN	.880	.956	.480	.456			
3	AT	.818	.931	.480	.340	.695		
4	KO	.710	.924	.077	.230	.274	.188	

4.3 The structural model

Results show that AN, as an independent variable, affected the other targeted variables. As in the aforesaid, this study accept the original model; therefore, the generated model was the same as the hypothesized one (see Figure 3). In other words, the four hypotheses were supported. Of all the

associations, the direct impact of AN on AT was the strongest (*r*=.69). Also, ICS mediated the relationship between AN and KO. In fact, AN had a moderate impact on ICS (*r*=.46), which in turn marginally influenced KO (*r*=.13). Finally, AN was a direct predictor on KO, but the this relationship was moderately weak (*r*=.22).

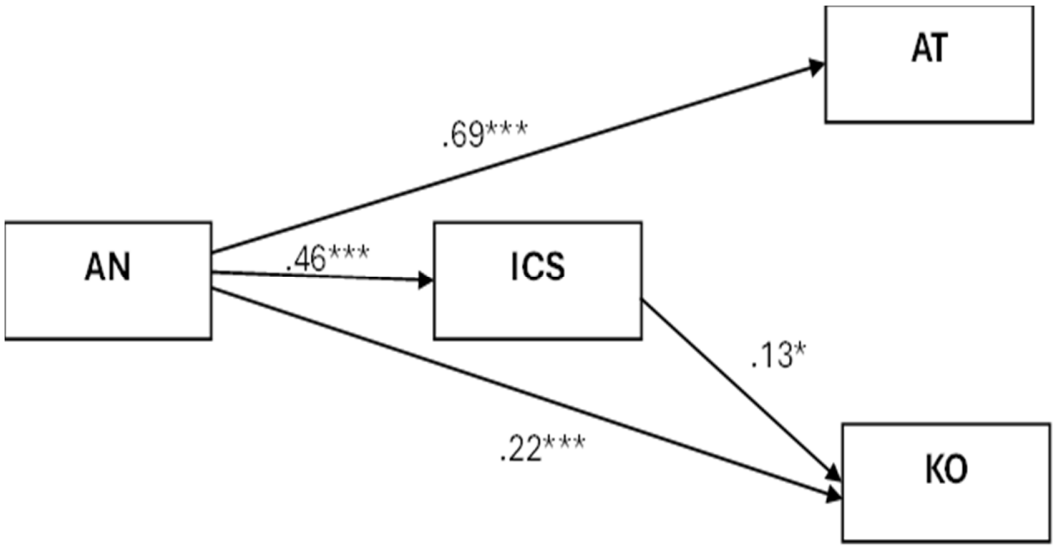

Figure 3. The relationships between awareness (AN), intercultural cognitive skills (ICS), attitudes (AT), and knowledge of others (KO)

Overall, drawing on data collected from 421 Vietnamese university students, the relationships between AN, ICS, AT, and KO were established. In essence, ICS was a mediating factor between AN and KO. AT and KO could be positively predicted by AN. Various measures were used to ensure research reliability and validity.

5. Discussion

The current study has examined the roles of different elements associated with intercultural communication in the Vietnamese context. The data, collected from questionnaires, was used to test the four hypotheses about the associations between awareness and intercultural cognitive skills, awareness and knowledge of others, awareness and attitudes, and intercultural cognitive skills and knowledge of others (see Table 5). As a result, a structural equation model was also developed and validated.

Regarding H1, several researchers (e.g. De Houwer et al., 2010; Jones et al., 2010) awareness could be effective in changing people's attitudes. In the intercultural communication context, awareness provides people with opportunities to pay attention and realize cultural similarities and differences from communciation with people with different cultural backgrounds (Peng et al., 2015). As such, people acquire cultural values and communication strategies, shaping their attitudes to intercultural communication. According to Sweldens et al. (2014), awareness can positively predict attitudes with or without evaluative conditioning. Negative experience may form negative attitudes, and positive experience can form positive attitudes. When people evaluate situations, they can understand the mechanisms in their negative experience, and it, therefore, conditions their attitudes. In this study, the Vietnamese university students' awareness positively predicted their attitudes considering intercultural communication (r=.69, p<.001). This finding was confirmed by Baker (2011). That's said, the students' experiences of intercultural communication facilitated their awareness or realization of values in the cultures of those who they communicated with, which in turn contributed to the development of their attitudes.

When it comes to the impact of awareness on knowledge of others, this causal relationship was rather weak (see Table 5). Although the relationship between these two variables is well acknowledged in the contemporary literature, one's knowledge can be influenced by many factors, one of which is awareness or attention. Regarding social interaction, as Sangin et al. (2011, p. 1059) put it, "Socio-cognitive processes allow elicitation of knowledge, open up multiple perspectives and foster new opportunities to challenge one's understanding by taking into account peers' perspectives." This knowledge co-construction process may facilitate the establishment of shared conceptions and knowledge (Suthers, 2006; Weinberger et al., 2005). In intercultural communication, people exchange and may be aware of who, how, and why of culture (Scollon et al., 2012). Thus, people understand "the role culturally based forms, practices and frames of understanding can have in intercultural communication, and an ability to put these conceptions into practice in a flexible and context specific manner in communication" (Baker, 2022, p. 42). Then, knowledge of language, culture, and communication strategies emerge and develop (Baker & Ishikawa, 2021). In the intercultural communication context, one can pick up knowledge of others (those who engage in communication and their cultures). This novel finding in the field of intercultural communication can be a reference for educators and curriculum and materials developers.

The literature indicates controversy about this relationship. In essence, this awareness-knowledge relationship is not always strong. According to Loo (2012), Milama and associates (2017), and Paristu et al. (2024), the relationship between awareness is a positive predictor of knowledge. However, as Maonde et al. (2015) argued, awareness usually predicts procedural knowledge better than declarative knowledge. In other words, performance, which is generally affected by procedural knowledge, can be positively predicted by awareness (Lightbown & Spada, 2021). However, the link between what people state or explain about what they knowledge and their awareness is rather weak (Salaberry, 2018). In this study, in communication, interlocutors may use both procedural and declarative types (Abu-Ayyash et al., 2023), explaining weak but significant impact (r=.22, p=.019) of awareness on knowledge in intercultural communication contexts.

To further explain the link between awareness and knowledge, numerous scholars (e.g. Butvilas et al., 2023; Henderson, 2020) the relationship between awareness and knowledge is in general mediated by cognitive processes. Accordingly, awareness is commonly known as attention or receiving information through senses. Such information is then processed cognitively before it forms short-term and then long-term memory or knowledge (Gerven et al., 2000; Paas et al., 2003). In this study, intercultural cognitive skills functioned as a mediating variable between the association between awareness and knowledge. That is, information which the Vietnamese students received through senses in intercultural communication circumstances was initially processed cognitively before it became knowledge. Such mediation was proved moderate (r=.46, p<.001).

Although the relationships between awareness, knowledge, attitudes, and cognitive skills have been well documented in the literature, this is the first attempt in the field of intercultural communication. It shed lights on the impacts of awareness on the other targeted variables. In essence, awareness with a strong effect on attitudes, a moderate impact on intercultural cognitive skills, and weak direct and indirect impacts on knowledge of others has expanded the literature on intercultural communication.

6. Conclusion

This study is one of the first attempts to investigate the relationships between awareness, attitudes, knowledge of others and cognitive skills regarding intercultural communication. Drawing on data collected from 421 Vietnamese university students, it formulated and tested the hypotheses with

awareness as a predictor of the other variables. Intercultural cognitive skills proved to be a mediating factor in the relationship between awareness and knowledge of others.

The current study shows a few possible limitations. First, it confined itself to a context in Vietnam. Future research can increase generalizability of the findings by including samples in other contexts. Second, while intercultural communication is context-sensitive, this study was mainly restricted to quantitative data collected from questionnaires. Qualitative data collected from communication between people from different cultures and longitudinal research may provide insightful information into how people communicate with other cultural groups and how awareness transfers to attitudes, cognitive skills, and knowledge of others.

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Appendices

Questionnaire 1: Knowledge of others

1. understanding the history of foreigners in communication
2. understanding social and cultural norms
3. understanding the foreigners' sense of values
4. understanding basic concepts of intercultural communication
5. understanding successful intercultural communication strategies

Questionnaire 2: Intercultural cognitive skills

1. the skill of acquiring knowledge of other cultures from foreigners
2. the skill of learning intercultural communication strategies
3. the skill of learning how to manage cultural conflicts

Questionnaire 3: Awareness

1. realizing cultural differences and similarities when communicating with foreigners
2. realizing the differences in cultural identity when communicating with foreigners
3. being aware of the cultural situations from both one's own and the other's perspective on culture

Questionnaire 4: Attitudes

1. willingness to learn from other cultures when communicating with foreigners
2. willingness to respect differences in cultural identity when communicating with foreigners
3. willingness to communicate with those from other cultures

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