Chinese university students' mediated contact and global competence: Moderation of direct contact and mediation of intergroup anxiety[☆]

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ABSTRACT

In recent years, popularity of social media and influx of international students have provided Chinese domestic students ample opportunities to contact with alien cultures both directly and indirectly. To understand impact of the new environment, the present study focused on Chinese domestic undergraduates and proposed a moderated mediation research model examining the relationships between mediated contact (through foreign TV series and movies) and the three dimensions of global competence (global attitudes, skills, and knowledge). We also explored mediation of intergroup anxiety and moderation of direct contact (with international students) underlying these relationships. Results from a multi-group structural equation modeling analysis revealed direct contact as a moderator, modifying the relationship between mediated contact and intergroup anxiety. Specifically, this negative relationship was significant at low, rather than at high levels of direct contact. Further, at low, rather than at high levels of direct contact, mediated contact had indirect relationships with all three dimensions of global competence via the mediator of intergroup anxiety.

Introduction

Nurturing students' global competence should become one core educational goal in the increasingly globalized world featured by sociocultural, political, economic, and technological interconnectedness and interdependence (Reimers, 2009). Global competence is defined as "having an open mind while actively seeking to understand cultural norms and expectations of others, leveraging this gained knowledge to interact, communicate and work effectively outside one's environment" (Hunter, White, & Godbey, 2006, p.270). Chinese higher education stakeholders are also dedicated to graduating more globally competent students effectively engaging in international affairs and competition (Yang, 2014). As such, our study focuses on Chinese university students and explores factors that can enhance their global competence. This cohort is selected also becasue scholars call for more research on domestic students who have been largely neglected in intercultural research but are much greater in number than internationally mobile students (Jon, 2013; Soria & Troisi, 2014).

Our study assumes that mediated intergroup contact (an indirect contact form conceptualized as Chinese students' viewing foreign TV series or movies through any type of mass media) can be a positive predictor of global competence. Practically, foreign TV

series and movies have gained much popularity in China, particularly among university students (Kang, 2017). Extensive media exposures, facilitated by widespread use of internet and mobile media, can act as a convenient and enjoyable way to understand and learn information about outgroup members (Vincze & Harwood, 2013). Theoretically, our study is situated within the contact hypothesis (Allport, 1954), which originally proposed that direct intergroup contact (i.e., face-to-face contact) can result in prejudice reduction when some favorable conditions are met (e.g., common goals, equal status and collaboration). For decades, empirical studies have extended the crucial and fundamental theory in several aspects. One main contribution is that direct contact can lead to various positive outcomes above and beyond prejudice reduction, for example, intergroup anxiety reduction (Pettigrew & Tropp, 2008; Visintin, Voci, Pagotto, & Hewstone, 2017) and multicultural competence (Jon, 2013). Another main contribution is that indirect forms of contact (e.g., imagined contact, extended contact, and mediated contact) may also have the potential to contribute to the positive outcomes (e.g., Cao & Lin, 2017; Dhont & Van Hiel, 2011; Rupar & Graf, 2019). As such, the contact hypothesis and its extensions can shed light on the relationship between mediated contact and global competence.

More importantly, we aim to further extend the contact hypothesis by including mediation and moderation assumptions underlying this relationship. Concerning the mediation, the affective variable of intergroup anxiety is examined as a mediator in the mediated contact-global competence relationship. Concerning the moderation, direct contact (conceptualized as Chinese students' face-to-face contact with international students in China) is examined as a moderator that may modify the relationships of mediated contact to intergroup anxiety and global competence. In this regard, our work is the first to explore this moderation assumption that may expand the knowledge of jointly working mechanisms of different forms of intergroup contact.

Mediated contact and global competence

As discussed earlier, the present study examines whether mediated contact through TV series and movies can predict intergroup anxiety and global competence. The concept of global competence can be divided into three dimensions: global knowledge, global skills, and global attitudes (Hunter et al., 2006; Li, 2013; Meng, Zhu, & Cao, 2018). The knowledge dimension means knowledge learned to provide information for intergroup contact, including knowledge related to cultures of one's own and others, world history, geography, and current affairs; the skills dimension means capacities enabling one to succeed in intercultural contexts, such as identifying cultural differences and effectively engaging in cross-cultural activities; the attitudes dimension means one's willingness and readiness to embrace and involve in cultural diversity (Li, 2013). Based on their respective definitions, the three dimensions can be inter-correlated yet distinctive from each other, and hence should be treated as separate constructs.

Research that explicitly examines the relationship between mediated contact and global competence is quite young. In modern society, mass media is an important channel connecting people across time and space (Vincze & Harwood, 2013). Positive portrayals of outgroup members through TV series and movies can represent an essential source of information about the outgroup (Joyce & Harwood, 2014). Further, the viewers tend to process information about the mediated characters in a similar way they process information learned in real-world contact (Schiappa, Gregg, & Hewes, 2005). Empirically, Peng and Wu (2016) found that mediated contact can be analogous to direct contact in promoting Chinese students' multicultural competence. In another instance, students' media exposure to and media participation in foreign TV series can contribute to their intercultural understanding (Zhang & Cassany, 2019). Therefore, there are reasons to assume that mediated contact can be positively related to global competence.

Noteworthy is that most studies on intergroup contact are conducted within North American and European contexts (Zagefka et al., 2017). It is also important to conduct such research in countries with different sociocultural norms and practices, such as Chinese collectivist cultures. Compared to Western individualist cultures, collectivist cultures are mainly featured by socializing within closely-knit ingroup members (Hofstede, 2001). Eap et al. (2008) revealed that Asian students tend to be less extraverted than European American students, which may undermine intergroup contact intentions. These sociocultural and individual differences further highlight the importance of examining effects of mediated contact in Chinese cultures because it does not involve direct contact experiences.

Mediated contact and intergroup anxiety

Intergroup anxiety is regarded as an affective phenomenon featured by negative psychological feelings of uneasiness, worry and apprehension, stemming from anticipating or engaging in intergroup contact, and has adverse effects on intergroup attitudes and relations (Stephan, 2014). Researchers argue that it can be frequently experienced in cross-cultural settings because intergroup contact is often unpredictable and psychologically demanding (Molinsky, 2007; Presbitero & Attar, 2018). However, through meaningful and consistent contact, individuals can better understand an outgroup by obtaining knowledge about outgroup members' social norms, cultural traditions, and behavioral features, thus reducing negative feelings (e.g., anxiety, uncertainty, and avoidance) (Stephan, 2014). Empirical evidence has consistently revealed that direct contact experiences can alleviate the sense of intergroup anxiety, particularly when such experiences are positive and meaningful (e.g., Shim, Zhang, & Harwood, 2012; Visintin et al., 2017). By contrast, the relationship between mediated contact and intergroup anxiety remains inconclusive. Some prior studies yielded the negative relationship between mediated contact through TV or movies and intergroup anxiety (Ortiz & Harwood, 2007; Shim et al., 2012), while some others found no relationship between the two constructs (Pagotto & Voci, 2013; Visintin et al., 2017). The inconsistency could result from the presence of confounding variables and limited knowledge of the boundary conditions that may increase or decrease effectiveness of mediated contact in reducing intergroup anxiety. As such, more research is warranted to help reconcile the inconsistency.

Intergroup anxiety and global competence

Anxiety-Uncertainty Management Theory (AUM theory, Gudykunst, 1998, 2005) can be useful to explain the relationship between intergroup anxiety and global competence. Used widely as a theoretical anchor in intergroup research, the AUM theory asserts that if individuals cannot manage their levels of intergroup anxiety and accurately predict attitudes and behaviors of outgroup members, effective intercultural communication and cross-cultural adjustment tend to be impaired. When anxiety is too high, individuals' self-confidence or self-respect is endangered, which may prevent them from fully benefiting from intergroup contact because they may process outgroup members' information in a simple way of using their own cultural frames as references (Gudykunst, 1998). This will almost inevitably undermine the quality of learning and applying outgroup members' cultures and values in daily communication practices. The intergroup anxiety model proposed by Stephan (2014) argues that intergroup anxiety can lead to negative consequences in affective, behavioral and cognitive domains. Stephan's argument has been supported by empirical studies in which individuals high in intergroup anxiety were found to be less skillful in achieving effective intercultural communication (as measured by global skills) (Gudykunst & Nishida, 2001), experience more difficulties in communicating knowledge to and receiving knowledge from outgroup members (as measured by global knowledge) (Presbitero & Attar, 2018), have weaker willingness for interactions with outgroup members and possess reduced positive attitudes towards outgroup members (as measured by global attitudes) (Logan, Steel, & Hunt, 2015; Vincze & Harwood, 2013; Visintin et al., 2017). Therefore, the AUM theory and these abovementioned studies can lend support for our assumption that intergroup anxiety can be a negative predictor of global competence.

Moderating roles of direct contact

Another important issue we address is whether direct contact can moderate the relationship of mediated contact (indirect contact form) to intergroup anxiety and global competence. It needs to be stressed again that direct contact is conceptualized as Chinese students' face-to-face contact with international students sojourning in China. Such contact may be increasingly available for Chinese students due to the massive influx of international students sojourning in China. Ministry of Education of China reported that international enrollments at Chinese universities amounted to almost 500,000 in the single year of 2018 (MOE, 2019).

This moderation assumption was theoretically inspired by the extended contact hypothesis (Christ et al., 2010; Dhont & Van Hiel, 2011; Vezzali, Hewstone, Capozza, Trifiletti, & Bernardo, 2017). Extended contact is also an indirect contact form which refers to knowing and observing in-group members having friendships with outgroup members (Christ et al., 2010). These studies consistently revealed interacting effects between direct contact and extended contact. In more detials, direct contact was found to moderate the relationships of extended contact to prejudice and behavioral intentions (Christ et al., 2010), to intergroup trust and threat (Dhont & Van Hiel, 2011), and to intergroup empathy (Vezzali et al., 2017). More specifically, these relationships were revealed to be significant at low, rather than at high levels of direct contact. Based on the findings, these scholars argue that direct contact experiences largely formed individuals' intergroup attitudes; however, individuals may depend on indirect experiences as sources of information for attitude formation when they lack or have no direct experiences. Over time, such indirect experiences can facilitate shaping enhanced intergroup attitudes of these individuals with few or no direct contact experiences. Given that mass media is widely used in modern society, mediated contact through foreign TV series and movies may function in a similar vein as a compensatory strategy for individuals with few or no direct contact experiences to learn outgroup members' cultures (e.g., lifestyles, traditions and beliefs) and reduce anxiety in anticipating or engaging in intergroup contact. As such, moving beyond previous work, we intend to be the first to examine interacting effects between mediated and direct contact. More specifically, we assume that mediated contact can be negatively associated with intergroup anxiety and positively associated with global competence, but only among those students whose direct contact is low or absent.

Mediating roles of intergroup anxiety

The final purpose of this work is to examine the mediating roles of intergroup anxiety. The studies discussed previously implies that the mediated contact-global competence relationship may not be a direct and simple one, and intergroup anxiety may act as a negative mediator of this relationship. Supporting this mediation assumption, Stephan's (2014) theoretical model of intergroup anxiety argues that intergroup anxiety can be positioned at the core linking personal experiences (e.g., contact experiences) with affective (e.g., fear, anger, and hatred), behavioral (e.g., ineffective intergroup contact, avoiding intergroup contact, and acting offensively) and cognitive variables (e.g., intergroup attitudes, stereotypes, and perceived homogeneity of an outgroup).

Previous research has offered much evidence on the mediating roles of intergroup anxiety. For example, Mak et al. (2014) focused on Australian domestic undergraduates and revealed intergroup anxiety as a mediator in the negative relationship between contact quality and intercultural communication (negative) emotions. More recently, Visintin et al. (2017) conducted two cross-sectional studies and found the negative relationship between face-to-face contact and outgroup prejudice was mediated by intergroup anxiety among a group of Italians. In Asian contexts, Shim et al. (2012) also evidenced intergroup anxiety as a mediator of positive effects of direct contact frequency and quality on Koreans' affective and behavioral attitudes towards Americans. More relevant to our research objectives is the study by Vincze and Harwood (2013) who revealed that intergroup anxiety mediated the positive relationships of TV use to intergroup attitudes and willingness for intercultural interactions, both of which are vital elements of global competence. In another instance, intergroup anxiety was found to mediate effects of Italians' negative news contact on their subtle prejudice towards immigrants in Italy (Pagotto & Voci, 2013).
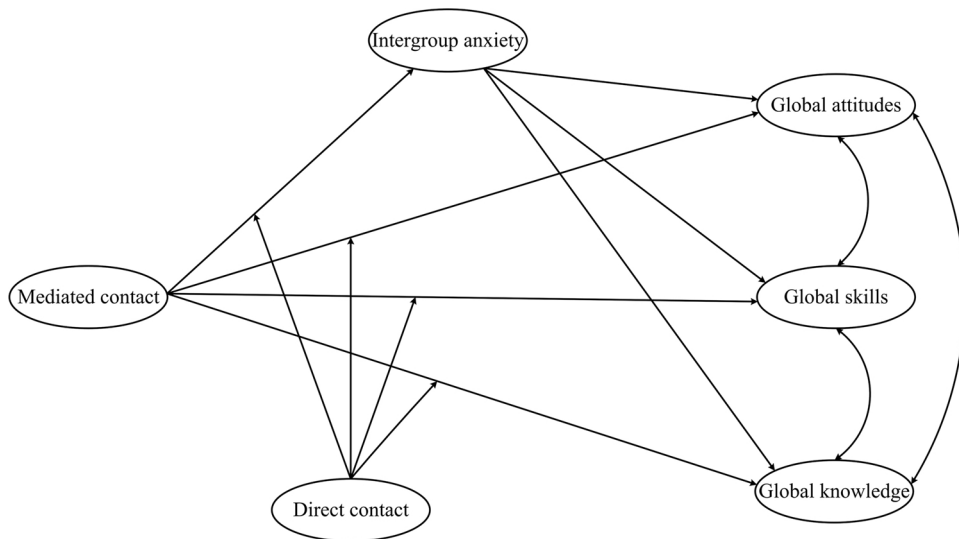
Fig. 1. The conceptual research model.

Although very few studies explicitly examine mediating roles of intergroup anxiety in the intergroup contact-global competence relationship, the Stephan's theoretical model (2014) and the afore-mentioned empirical studies can support this mediation. Furthermore, examining this mediation can further contribute to our understanding of mediating mechanisms of intergroup anxiety because global competence is a multi-faceted construct including the affective dimension of global attitudes (e.g., embracing cultural diversity), the behavioral dimension of global skills (e.g., behavioral skills in cross-cultural collaborations), and the cognitive dimension of global knowledge (e.g., knowledge of foreign cultures).

The current study

A conceptual research model that incorporates both mediation and moderation perspectives (see Fig. 1) is outlined to present the direct, mediated and moderated relationships. As shown in the model, mediated contact may negatively predict intergroup anxiety, which may, in turn, negatively predict global knowledge, skills and attitudes. In addition, direct contact may moderate the relationships of mediated contact to intergroup anxiety and global competence. Accordingly, the following hypotheses are formulated.

Concerning moderated relationships:

H1. The negative relationship between mediated contact and intergroup anxiety will be stronger at low levels of direct contact; however, at high levels of direct contact, this relationship will be weaker or disappear.

H2. The positive relationships of mediated contact to global attitudes (H2a), global skills (H2b) and global knowledge (H2c) will be stronger at low levels of direct contact; however, at high levels of direct contact, these relationships will be weaker or disappear.

Concerning mediated relationships:

H3. The positive relationships of mediated contact to global attitudes (H3a), global skills (H3b), and global knowledge (H3c) will be mediated by the negative mediator of intergroup anxiety.

Methods

Participants and procedure

The participants (i.e., Chinese university students) were recruited from a renowned Chinse university currently hosting around 3000 international students from more than 120 countries. The international students are enrolled for exchange programs, degree programs, or Chinese language programs. The university offers various intercultural training programs and language learning courses for both domestic and international students.

We contacted eight teachers at the university and each of them had about 150 Chinese domestic undergraduates at the current academic semester. With the help of these teachers, the URL link to an online survey was sent to the undergraduate students they taught. Research objectives, anonymity, and voluntary participation were clearly indicated. All procedures performed in this study were in accordance with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The final participants were 555 students (367 males/188 females; ages ranging between 16 and 29: $M = 19.50$ and $SD = 1.10$; 423 majoring in natural sciences and 132 majoring in social sciences and humanities). Only 4 students had overseas study experiences and 59 students

had travelling abroad experiences.

Measures

The back-translation method (Brislin, 1980) was used to translate all measures in this study from English into Chinese. Specifically, two bilingual experts in intergroup contact research translated all items into Chinese and then translated them back to English to guarantee the linguistic equivalence. Some small wording issues were addressed before the Chinese version was distributed to the participants.

Mediated intergroup contact

Three items were used to measure Chinese students' viewing foreign entertainment programs (Yoo, Jo, & Jung, 2014). These items respectively asked "How often do I view foreign TV series or movies" on a scale from 1 (never) to 5 (very often), "How many foreign TV series or movies have I viewed" on a scale from 1 (none) to 5 (very many), and "How much do I like viewing foreign TV series or movies" on a scale from 1 (not at all) to 5 (very much). A higher score indicated more frequent mediated contact. The reliability coefficient was 0.87.

Direct intergroup contact

We utilized three items to measure direct intergroup contact (Schmid, Hewstone, Tausch, Cairns, & Hughes, 2009). They assessed to what degree Chinese students interacted with international students in the real world: "To what extent do I mix with (e.g., chat with) international students", "To what extent do I socialize or engage in leisure activities with international students", and "About how many of my friends are international students in China". Responses ranged from 1 (not at all) to 5 (a lot) or from 1 (none) to 5 (very many). The reliability coefficient was 0.85.

Intergroup anxiety

Stephan and Stephan's (1985) intergroup anxiety scale was used. The participants were asked to imagine being interacting with foreigners and rate the seven emotional reactions (i.e., anxious, awkward, frustrated, insecure, worried, irritated, and impatient) on a scale from 1 (not at all) to 5 (very much). The reliability coefficient was 0.93.

Global competence

The three dimensions of global competence were measured using the scale developed by Hunter et al. (2006). A sample item of the knowledge dimension (5 items) was "To what extent do I understand norms and expectations of cultural others", a sample item of the skills dimension (5 items) was "To what extent am I capable to identify cultural differences", and a sample item of the attitudes dimension (5 items) was "To what extent am I willing to take risks in pursuit of cross-cultural learning and personal development". The confirmative factor analysis (CFA) confirmed the three dimensions with an acceptable model fit: χ^2 (83, N = 555) = 279.539, $P < 0.001$, χ^2/df = 3.368; SRMR = 0.049; RMSEA = 0.068; CFI = 0.970; TLI = 0.960. By contrast, treating global competence as a uni-dimensional scale received a very poor model fit: χ^2 (90, N = 555) = 2103.472, $P < 0.001$, χ^2/df = 23.372; SRMR = 0.118; RMSEA = 0.201; CFI = 0.696; TLI = 0.646. The results indicated that it can be a better choice to operationalize global competence as a three-dimension construct. The response categories of the 15 items ranged either from 1 (strongly disagree) to 5 (strongly agree) or from 1 (very low) to 5 (very high). Higher scores of each subscale indicated higher levels of global competence on the respective dimension. The reliability coefficients were 0.90 for knowledge, 0.90 for skills, and 0.91 for attitudes.

Statistical analysis

The research model was evaluated with Maximum Likelihood Method in structural equation modeling (SEM) in the AMOS 22.0 software. A multi-group SEM analysis was employed to test the moderating and mediating effects. The model-data fit of the measurement and structural models was evaluated with the following five goodness-of-fit indices: χ^2/df ratio (acceptable if < 3), comparative fit index (CFI, acceptable if > .95), Tucker-Lewis index (TLI, acceptable if > .90), root-mean-square error of approximation (RMSEA, acceptable if < .08) and standardized root-mean-square residual (SRMR, acceptable if < .08) (Hu & Bentler, 1999).

Results

Preliminary analysis

Descriptive statistics and correlations between variables are presented in Table 1. Based on the descriptive statistics, Chinese students may have frequent mediated contact (M = 3.43) and infrequent direct contact (M = 2.18). It may further demonstrate the importance of investigating effects of mediated contact when direct contact is low. The correlation coefficients also indicated that mediated contact was correlated with intergroup anxiety and subscales of global competence.

Assessing the measurement model and common method variance

Before the measurement model was tested, three-item parcels were respectively created for the variables of intergroup anxiety,

Table 1
Means, standard deviations and correlations of the variables.

Variable	M	SD	1	2	3	4	5	6
1. Mediated contact	3.43	.82	—					
2. Direct contact	2.18	.85	.281**	—				
3. Intergroup anxiety	2.66	.84	−.107*	.085*	—			
4. Global knowledge	3.09	.74	.279**	.355**	−.299**	—		
5. Global skills	3.38	.73	.388**	.278**	−.089*	.702**	—	
6. Global attitudes	3.73	.76	.404**	.146**	−.054	.490**	.741**	—

Note. * $p < 0.05$; ** $p < 0.01$.

global knowledge, global skills and global attitudes in order to decrease estimation errors and model complexity (Little, Cunningham, Shahar, & Widaman, 2002). Individual items were used as indicators for the variables of mediated and direct contact. Hence, each latent variable was represented by three indicators. The measurement model with the six latent variables received an acceptable model fit: χ^2 (120, N = 555) = 407.895, $p < 0.001$, $\chi^2/df = 3.399$; SRMR = 0.038; RMSEA = 0.066; CFI = 0.963; TLI = 0.953.

We computed composite reliability (CR), average variance extraction (AVE) and square roots of AVE of the latent variables to demonstrate model reliability, convergent validity, and discriminant validity. As shown in Table 2, all values were well above the cutoff criterions (Bagozzi & Yi, 1988). Due to the cross-sectional design, the Harman's single factor analysis was conducted to check the common method bias, following the steps suggested by Podsakoff, MacKenzie, Lee, and Podsakoff (2003)). The single un-rotated factor with all 28 items forced to load on it only extracted 33.3 % of the total variance, well below the warning value of 50 %. In addition, we tested a one-factor model that received a rather poor model fit: χ^2 (135, N = 555) = 4154.961, $p < 0.001$, $\chi^2/df = 30.777$; SRMR = 0.172; RMSEA = 0.232; CFI = 0.484; TLI = 0.415. These results indicated that common method bias would not affect the results of the study.

Assessing the multi-group structural models

After the measurement model was confirmed to be acceptable, we performed a multi-group SEM analysis to test the moderation (with direct contact as the moderator) and mediation (with intergroup anxiety as the mediator) hypotheses. This analytical approach is recommended to test moderating effects when categorical moderators are either contextual or dispositional variables (Gruen, Osmonbekov, & Czaplewski, 2007). Particularly, it can reveal significant differences in indirect effects across subgroups (Ryu & Cheong, 2017).

We first divided the whole sample into two subgroups of low and high levels of direct contact with a median split. The median value of 2.10 yielded the two subgroups with 295 participants in the subgroup with high levels of direct contact (abbreviated as the high subgroup) and 260 participants in the subgroup with low levels of direct contact (abbreviated as the low subgroup). The structural model analyses indicated that the model-data fit was acceptable for the both subgroups: the high subgroup [χ^2 (80, N = 295) = 248.667, $p < 0.001$, $\chi^2/df = 3.108$; SRMR = 0.040; RMSEA = 0.080; CFI = 0.958; TLI = 0.945] and the low subgroup [χ^2 (80, N = 260) = 177.474, $p < 0.001$, $\chi^2/df = 2.218$; SRMR = 0.044; RMSEA = 0.069; CFI = 0.966; TLI = 0.955]. Standardized path coefficients respectively for the low and high subgroups are presented in Fig. 2.

We then imposed model constraints (constrained model versus unconstrained model) using Chi-square differences ($\Delta\chi^2$) to test path-by-path comparisons (see Table 3) (Kline, 2015). As shown in the table, the only significant difference across the two subgroups was shown in the relationship between mediated contact and intergroup anxiety ($\Delta\chi^2 = 6.50$; $p < 0.05$). More specifically, mediated contact was negatively related to intergroup anxiety at low (β_{low} = -0.16, $p = 0.025$), rather than at high levels of direct contact (β_{high} = -0.12, $p = 0.070$). Thus, H1 was supported. For the both subgroups, mediated contact positively predicted global attitudes (β_{low} = 0.40, $p < 0.001$; β_{high} = 0.48, $p < 0.001$), global skills (β_{low} = 0.39, $p < 0.001$; β_{high} = 0.46, $p < 0.001$), and global knowledge (β_{low} = 0.35, $p < 0.001$; β_{high} = 0.31, $p < 0.001$). Thus, H2 was not supported since all $\Delta\chi^2$ estimates of these relationships were not significant. For the both subgroups, intergroup anxiety negatively predicted global attitudes (β_{low} = -0.17, $p = 0.005$; β_{high} = -0.12, $p = 0.034$), global skills (β_{low} = -0.23, $p < 0.001$; β_{high} = -0.21, $p < 0.001$), and global knowledge (β_{low} = -0.34, $p < 0.001$; β_{high} = -0.41, $p < 0.001$).

Table 2
Criterions, composite reliability (CR), average variance extracted (AVE) and square roots of AVE for latent constructs in the measurement model.

Value	Criterion	Mediated contact	Direct contact	Intergroup anxiety	Global knowledge	Global skills	Global attitudes
CR	Larger than 0.6	0.87	0.85	0.91	0.92	0.91	0.93
AVE	Larger than 0.5	0.69	0.66	0.78	0.79	0.78	0.82
Square roots of AVE	Larger than its correlations with all other variables	0.83	0.81	0.88	0.89	0.88	0.91

A. Structural model for the subgroup with high levels of direct contact
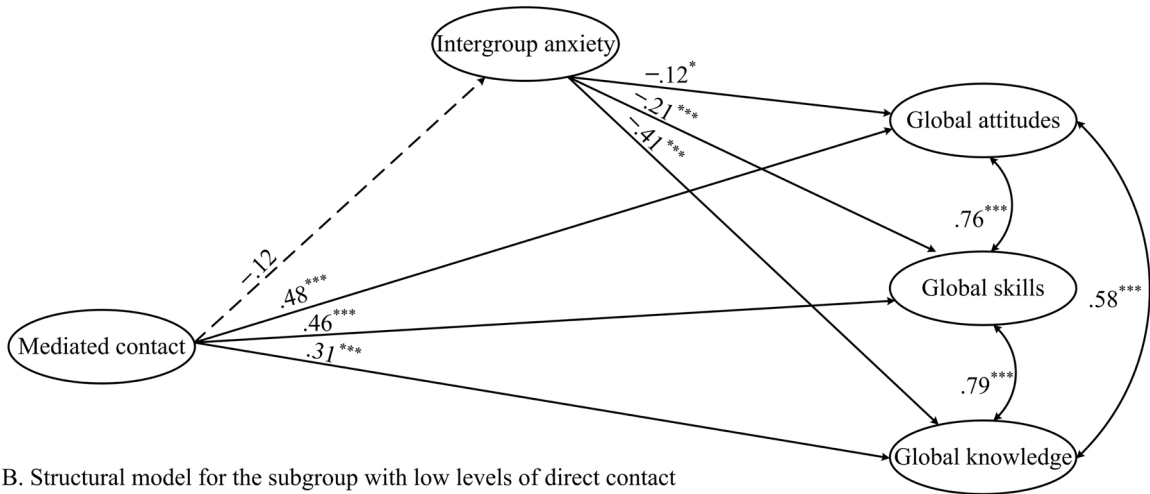
B. Structural model for the subgroup with low levels of direct contact
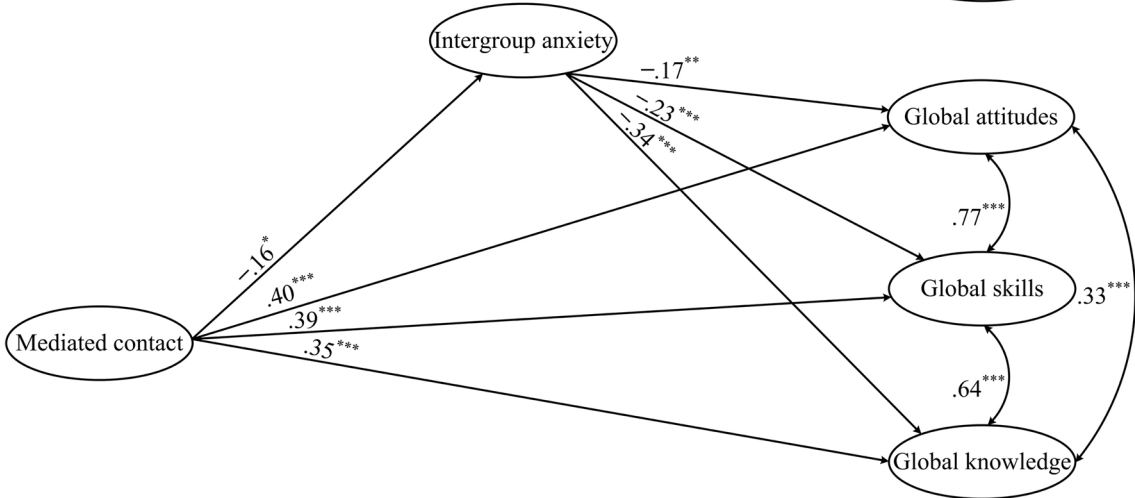

Fig. 2. Results of testing the structural model; * $p < .05$, ** $p < .01$, *** $p < .001$.
The solid lines indicate significant standardized coefficient paths.
The dotted lines indicate non-significant standardized coefficient paths.

Assessing the mediating effects of intergroup anxiety

Researchers recommend examining mediation with bootstrapping methods in SEM (Cheung & Lau, 2007; Shrout & Bolger, 2002). Specifically, if the resulting 95 % confidence intervals (CI) does not include zero, it can be concluded that the mean indirect effect is significant. Next, we examined differences of mediating effects of intergroup anxiety across the two subgroups with $\Delta\chi^2$ (Ryu & Cheong, 2017). The results presented in Table 3 revealed that mediated contact was indirectly related to global attitudes for the low subgroup (95 % CI [0.008, 0.077], but not for the high subgroup (95 % CI [-0.053, 0.002]), with the estimated difference being $\Delta\chi^2 = 5.10$, $p < 0.05$. Likewise, mediated contact was indirectly related to global skills for the low subgroup (95 % CI [0.014, 0.062], but not for the high subgroup (95 % CI [-0.071, 0.002]), with the estimated difference being $\Delta\chi^2 = 4.60$, $p < 0.05$. Finally, mediated contact was indirectly related to global knowledge for the low subgroup (95 % CI [0.001, 0.137], but not for the high subgroup (95 % CI [-0.117, 0.012]), with the estimated difference being $\Delta\chi^2 = 8.65$, $p < 0.01$. These results from the multi-group analysis indicated that the mediating effects of intergroup anxiety only applied to the subgroup with low levels of direct contact. Thus, H3 received partial support from the results.

Discussion and practical implications

The present study proposed a conceptual model including both mediation and moderation perspectives. The results supported this model by revealing direct contact as a moderator in the negative relationship between mediated contact and intergroup anxiety. The results also revealed intergroup anxiety as a mediator of the relationships between mediated contact and global competence for the

Table 3

Differences in direct and indirect effects with $\Delta\chi^2$ for the two subgroups with low and high levels of direct contact.

Direct effects		The low subgroup		The high subgroup		
Independent variables	Dependent variables	Estimate	p	Estimate	p	$\Delta\chi^2$
Mediated contact	Intergroup anxiety	−0.16	0.025	−0.12	0.07	6.50*
Mediated contact	Global attitudes	0.40	< 0.001	0.48	< 0.001	3.52
Mediated contact	Global skills	0.39	< 0.001	0.46	< 0.001	3.42
Mediated contact	Global knowledge	0.35	< 0.001	0.31	< 0.001	2.22
Intergroup anxiety	Global attitudes	−0.17	0.005	−0.12	0.034	3.17
Intergroup anxiety	Global skills	−0.23	< 0.001	−0.21	< 0.001	1.65
Intergroup anxiety	Global knowledge	−0.34	< 0.001	−0.41	< 0.001	3.01

Indirect effects via intergroup anxiety		The low subgroup		The high subgroup		
Independent variables	Dependent variables	Estimate	p	Estimate	p	$\Delta\chi^2$
Independent variables	Dependent variables	Low 95 % CI	High 95 % CI	Low 95 % CI	High 95 % CI	$\Delta\chi^2$
Mediated contact	Global attitudes	0.008	0.077	−0.053	0.002	5.10*
Mediated contact	Global skills	0.014	0.062	−0.071,	0.002	4.60*
Mediated contact	Global knowledge	0.001	0.137	−0.117	0.012	8.65**

Note. * $p < 0.05$; ** $p < 0.01$.

subgroup with low levels of direct contact.

Functional roles of mediated intergroup contact

In the existing literature, the primary emphasis has been placed on the relationship between direct intergroup contact and global/multicultural competence (e.g., Jon, 2013; Meng, Zhu, & Cao, 2017; Soria & Troisi, 2014). Nonetheless, it should be noted that direct contact has some obvious drawbacks. First, direct contact opportunities are often limited even in multi-cultural contexts (Vezzali et al., 2017; Visintin et al., 2017). This scarcity also applies to Chinese higher education contexts since recent studies have revealed that Chinese domestic students had little contact with international students (Ding, 2016; Li, 2015). Second, superficial or even negative direct contact can increase chances of misunderstanding and negative emotions (e.g., anxiety, apprehension and avoidance) among culturally different students. (Jon, 2013; Mak, Brown, & Wadey, 2014).

Under such circumstances, a growing body of research explores predictive roles of different types of indirect contact, for example, mediated contact. Unlike direct contact that is sometimes superficial or negative, mediated contact through foreign films and movies is easily available and often involves positive portrayals of media characters. In our study, mediated contact was found to negatively predict intergroup anxiety and positively predict global competence. As argued by Stephan (2014), intergroup anxiety partially originates from lacking understanding of or feeling uncertain about an outgroup. Frequent exposures to foreign TV series and movies facilitate learning about outgroup members, and thus are helpful to reduce anxiety when anticipating and engaging in interactions with the outgroup (Shim et al., 2012). Further, prior work has indicated that TV shows can have a unique contribution to intergroup attitudes improvement and prejudice reduction as a result of observing positive portrayals of outgroup members (Ortiz & Harwood, 2007; Pagotto & Voci, 2013). Positive attitudes tend to be associated with affective and emotional changes, such as comfort and ease in company with outgroup members (Harwood & Vincze, 2012).

Given that examining the relationship between mediated contact and global competence is quite recent, our results can be encouraging because they comply with the rather few prior studies (Peng & Wu, 2016; Zhang & Cassany, 2019). There are several reasons that may underlie the positive relationships between the two constructs. First, foreign TV series and movies often convey messages about outgroup members' behavioral features, traditions and lifestyles embedded with cultural codes. These essential cultural elements have been found to promote students' motivation for intercultural engagement and knowledge of cultural differences (Truong & Tran, 2014). Second, the nature of leisure involved in viewing foreign entertainment programs have great potentials to facilitate the cultural learning process through observing the media characters and their cultures at ease and comfort. Third, the more people in a specific country view entertainment programs from a foreign country, the more likely they are to perceive the foreign country and its cultures in a positive light (Cao & Meng, 2020; Yoo et al., 2014). According to Imamura and Zhang (2014), individuals' positive perceptions of an outgroup (e.g., more social attractiveness and less communicative anxiety) can evoke their willingness for communicating with the outgroup and acquiring culture-specific knowledge about the outgroup. Despite these revealed benefits of mediated contact, we recommend future research to further expand the knowledge by distinguishing between news media and entertainment media because the two forms of mediated contact tend to convey typically different images of outgroup members (Visintin et al., 2017).

Moderation of direct contact and Mediation of intergroup anxiety

Our study can add more insights into the revealed mediated contact-global competence relationship by exploring moderating and

mediating effects. Most notably, the moderating role of direct contact was confirmed in the relationship between mediated contact and intergroup anxiety. To the authors' knowledge, we can be the first to reveal the interacting effects between direct and mediated contact. Exploring this moderation was theoretically inspired by prior studies that have consistently revealed that direct contact moderated the relationships between extended contact and intergroup relation variables (Christ et al., 2010; Dhont & Van Hiel, 2011; Vezzali et al., 2017). In addition, Wojcieszak and Azrout (2016) argue that boundary conditions of mediated contact remain untested and thus are not clear yet. Echoing these studies, our results indicated that the negative relationship between mediated contact and intergroup anxiety was significant at low, rather than at high levels of direct contact. In this regard, our study offered the initial evidence that mediated contact, functioning similarly to extended contact, can be an effective strategy for anxiety reduction when direct contact is low or absent. Reasonably, both extended contact and mediated contact are vicarious types of intergroup contact with the former providing information about outgroup members through extended friendships and the latter providing such information through mass media. Our finding suggested that Chinese students having little or no direct contact may rely on foreign entertainment programs as information sources necessary for intergroup anxiety reduction. Big advantages of mediated contact include that it is cost effective and easily available, and does not require any personal or in-group friends' actual direct contact with outgroup members. It may be particularly important in Chinese higher education contexts because Ding's (2016) qualitative study showed that Chinese domestic students and international students tended to study and socialize in parallel communities. By contrast, we did not find moderating effects on global competence, indicating that mediated contact may be equally predictive of global competence for Chinese students with low or high levels of direct contact.

The confirmed mediating effects of intergroup anxiety empirically supported Stephan's (2014) theoretical model that argues that intergroup anxiety can be a core variable linking personal experiences (e.g., contact experiences) with affective, behavioral and cognitive consequences. Moving beyond the theoretical model, our results from the multi-group analysis indicated that this mediation was only applicable for Chinese students with low levels of direct contact with international students. For this subgroup of students, mediated contact was demonstrated to have the instrumental values, serving as a means to global competence enhancement via the mediation of reduced intergroup anxiety. As discussed previously, few studies to date examined the relationship between mediated contact and global/multicultural competence, and even fewer attempted to explore the mediating process underlying this relationship. Therefore, our study can expand the existing literature by uncovering this process that leads to the development of students' competence in multicultural contexts. It should also be noted that intergroup anxiety played a partial mediating role since the direct paths from mediated contact to all three dimensions of global competence were still significant. It implied that other variables (for example, intergroup trust and intergroup empathy) may be more important in mediating this process. Therefore, future research is recommended to continue this research line to extend our understanding of the mediated contact-global competence relationship.

Practical implications

Our findings suggested that foreign entertainment programs (mediated contact) should be wisely utilized as intercultural interventions. In implementing the strategy, high priorities can be given to students having difficulties with direct contact (e.g., strong intergroup avoidance and anxiety) or having few opportunities for direct contact (e.g., studying in segregated academic communities). The moderation finding implied that this strategy can be especially helpful for these students with few or no direct contact experiences because they may depend on mediated contact as information resources. The positive and direct link between mediated contact and global competence also suggested that this strategy may enhance these students' global competence. Also noteworthy is that viewing amount, when coupled with viewing quality (e.g., positive portrayals of intergroup contact and relations), can be more effective in enhancing intergroup attitudes (Shim et al., 2012) and multicultural competence (Truong & Tran, 2014). After the viewing, group discussion and panel work can be organized to share the target outgroup's cultural norms and behavioral features learned through the media programs. In the discussion process, teachers should be aware of their roles in encouraging participation, facilitating sense-making activities, stimulating multiple perspectives in inter-cultural issues, and giving feedbacks and comments when necessary. In other words, teachers need to act more as facilitators providing assistance and guidance rather than as instructors telling students what to do and what to think. Over time, university management can consider creating face-to-face contact opportunities for these students because the enhanced competence and reduced anxiety through the mediated contact strategy can facilitate their building friendships and connectedness with culturally diverse students in the real world (Meng et al., 2018; Stephan, 2014).

Limitations

Several limitations of this study need to be noted. First, the studied relationships cannot be referred to as causal relationships due to the cross-sectional design. Hence, future longitudinal research is recommended to track the trajectories of mediated contact and its impact. Second, it requires cautions to generalize the results to other population or contexts unless they are replicated. Third, our participants were recruited from a single university though it has a multi-cultural campus. Future research is encouraged to address this limitation by collecting samples that are more representative of the whole population. Finally, many participants reported low levels of direct contact with international students (M = 2.18). Further dividing them into two subgroups with low and high levels of direct contact has resulted in a reduced variability. Hence, a sample data with a wider range of direct contact is recommended for future research to obtain a more accurate understanding of its moderating roles. To conclude, despite these limitations, our work not only examined the under-researched relationship between mediated contact and global competence, but also shed new insights into

this positive relationship by incorporating moderation (direct contact as the moderator) and mediation (intergroup anxiety as the mediator) perspectives. In addition, these findings provided implications for the university management to design or upgrade service programs for student development.

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