

Nurturing the global competence of high school students in Shenzhen: The impact of school-based global learning education, knowledge, and family income

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Abstract

The aim of this study is to investigate the relationship between school-based global learning education (GLE), knowledge, family income, and global competence, which consists of global perspective and intercultural literacy. Based on a survey of 599 high school students in Shenzhen, it finds that school-based GLE has direct positive effects on intercultural literacy. Although GLE does not have a direct impact on global perspective, it can influence global perspective through knowledge. When family income is taken into consideration, school-based GLE has no impact on the knowledge of students from low-income families, and their knowledge has no effect on their intercultural literacy. In contrast, family income has a negative impact on the knowledge of students from high-income families, and their knowledge has a positive effect on their intercultural literacy.

Keywords: global competence, global perspective, global literacy, school-based global learning education, family income

Global competence is the disposition and capability of people to explore, comprehend, and respond to diverse local, global, and intercultural challenges to their lives from different perspectives (Mansilla & Jackson, 2011). It is regarded as an important factor in students' social engagement and participation in an increasingly globalized and culturally diverse world (OECD, 2018). Thus, nurturing students' global competence is an important goal for societies that aim to promote social justice and equality. Education is believed to provide equal opportunities for every student to develop different kinds of competence, including global competence. Thus, school-based global learning education (GLE) is important for nurturing the global competence of students, regardless of family background (Doscher & Landorf, 2018). However, the literature reveals that school-based GLE may not necessarily benefit all students, even though it may transmit knowledge related to global competence to them. Compared with students from low-income families, students from high-income families may have better educational outcomes from school-based GLE because their families can provide them with richer resources for learning global competence (Ng et al., 2018). Accordingly, the effects of school-based GLE may be moderated by students' family income. To inform the debate about the impact of school-based GLE on students' global competence, this study addresses the following research question: What are the relationships between school-based GLE, family income, knowledge, and students' global competence?

Global competence

Researchers tend to define "global competence" differently and use the term loosely to account for diverse phenomena, such as global mindset, global perspective, intercultural competence, and intercultural sensitivity (Li, 2013). This situation may lead to a lack of validity when the concept is used in empirical research or to develop policies and practices. To overcome this limitation, this study conceptualizes global competence based on two frequently used perspectives: the disposition perspective and the capability perspective.

Disposition perspective on global competence

The disposition perspective conceptualizes global competence as the dispositions—including attitudes, values, and ways of knowing—that help people to respect others with different cultural backgrounds, understand global issues, and locate themselves in the globalized world (Gibson et al., 2008). Attitudes and values reflect

openness to intercultural opportunities, *tolerance* of cultural differences and ambiguity, *respect* for cultural diversity, and a *sense of global identity* (OECD, 2018), while ways of knowing involve *understanding* local, global, cultural, and intercultural issues, processes, trends, and systems in the global context (Li, 2013). Some researchers prefer the term “global perspective” or “global mindset,” referring, similarly, to the dispositions that facilitate people’s understanding of local and global issues, appreciation of different perspectives, comprehension of the complexity of global conditions and trends, and sense of global identity (Braskamp et al., 2014). While students’ global competence is significantly affected by these dispositions, it is also shaped by students’ capacity to perform relevant activities satisfactorily. To address this concern, researchers have also sought to conceptualize global competence from the capability perspective.

Capability perspective on global competence

The capability perspective regards global competence as the ability to respond to and handle cultural differences and diversity for effective cross-cultural or intercultural engagement and participation (Mansilla & Jackson, 2011). Some researchers use the terms “intercultural literacy,” “intercultural competence,” or “intercultural sensitivity” (Deardorff, 2006; Diehl & Prins, 2008). The literature indicates that globally competent people are able to: 1) *analyze* local, global or intercultural issues when engaging in research (Mansilla & Jackson, 2011); 2) *interact* appropriately with and effectively *communicate* ideas to people from different cultural backgrounds (Mansilla & Jackson, 2013) 3) *reflexively participate* in the world to promote sustainable development and collective well-being (OECD, 2018). Although this perspective considers the importance of global competence capabilities for engagement and participation, it tends to ignore the influence of an individual’s dispositions on these capabilities. Consequently, neither the disposition perspective nor the capability perspective provides a comprehensive account of global competence.

Proposed conceptualization of global competence

The disposition and capability perspectives suggest different but complementary dimensions of global competence. For example, if a person demonstrates openness to intercultural diversity and appreciates the views of others, he/she may also be capable of appropriately interacting with people from different cultural backgrounds and reflexively participating in the globalized world (OECD, 2018). In other words, an individual’s global competence is a result of both his/her dispositions and

capabilities. Hence, this study provides a comprehensive conceptualization of global competence by synthesizing these perspectives. In this conceptualization, the first dimension of global competence comprises dispositions such as attitudes, values, and ways of thinking about oneself, events, and issues in the globalized world. The second is capabilities, including intercultural identification, communication, and interaction in the globalized world. The dispositional dimension can be referred to as “global perspective” and the capability dimension as “intercultural literacy.” Each dimension of global competence facilitates students’ engagement with, and integration into, the globalized world.

Knowledge and global competence

Global competence is affected by many factors. One is a person’s knowledge of cultural interconnectedness, similarities, and differences (Li, 2013). For example, students equipped with such knowledge are better able to challenge stereotypes about ethnic groups and people, respect and accept differences and diversity, and promote social justice (Mansilla & Jackson, 2011). Intercultural knowledge, intracultural knowledge, and foreign language proficiency are key to an individual’s development of global competence (Bresciani, 2008; Li, 2013; Parkinson, 2009).

According to Case (1993), intercultural knowledge is the understanding of diverse ideas, values, and cultural practices. Such knowledge extends beyond surface-level familiarity with different societies’ traditional foods, customs, and routines, providing students instead with a deeper understanding of the complexity of cultural and global phenomena in the globalized world (Li, 2013). Thus, intercultural knowledge is essential for students to become globally competent (Bresciani, 2008).

Intracultural knowledge means an individual’s understanding of ideas, values, and cultural practices in his/her own society. As Reimers (2009) suggests, intracultural knowledge helps students appreciate and make sense of themselves and their own culture in relation to other cultures in the global context, and in turn encourages them to engage in global and intercultural communication and interaction. In this sense, it may be positively related to students’ global competence (Li, 2013).

Parkinson (2009) notes that foreign language proficiency is essential for students’ global competence, because it enables them to develop a deeper understanding of foreign cultures, reach across cross-cultural boundaries, and communicate and interact with people from different cultures. Diehl and Prins (2008) note that if students can communicate well in multiple languages, they tend to have better intercultural literacy. Therefore, researchers suggest that learning a foreign language

is an important way for students to develop global competence (Nair & Henning, 2017). Accordingly, we formulated the following hypotheses:

H1: If students have foreign language proficiency, intracultural knowledge, and intercultural knowledge, they will have a better global perspective.

H2: If students have better foreign language proficiency, intracultural knowledge, and intercultural knowledge, they will have better intercultural literacy.

School-based GLE and global competence

Education as a social institution is expected to perform a major role in the transmission of knowledge, skills, attitudes, and values to children in modern society, because the family has a weaker socialization function in modern society (McLanahan & Sandefur, 1994). Thus, modern societies have developed school systems to provide equal opportunities for every child to receive education (Cookson & Sadovnik, 2002). Although family background may still have an impact on a child's life, it is believed that universal school education can reduce the effects of disparities in family background. As Mann (1997, p. 78) argues, "universal education can counterwork this tendency to the domination of capital and servility of labor ... Education, then, beyond all other devices of human origin, is the great equalizer of the conditions of men, the balance-wheel of the social machinery."

Influenced by this belief, education scholars suggest providing a variety of GLE at school, through which students can acquire cultural and intercultural knowledge and skills, and thus enhance their global competence (Whitehead, 2015). For example, inbound and outbound exchange programs and activities are frequently used in school-based GLE to foster students' global competence. These provide students with intercultural experiences that improve their foreign language competence through direct interaction with people in the foreign country, and increase their understanding of the foreign culture, their own culture, and their interrelationship in the globalized world (Hill, 1991). In addition, schools provide GLE for students at home. For example, some schools integrate GLE into existing curricula like history, economics, social studies, and geography. This encourages students to systematically learn, share, and discuss their views on global issues (Merryfield, 2008). GLE may be used to structure community-service programs or classroom diversity initiatives, enabling students to appreciate different cultural practices and values through interaction with people from diverse cultural and ethnic backgrounds (Whitehead, 2015). According to a study conducted by Shanker et al. (2019), school-based GLE can promote students' global competence. Accordingly, we make the following hypotheses;

H3: If school-based GLE provides more cultural and intercultural learning opportunities, it will have a positive impact on students' knowledge, including language proficiency, intercultural knowledge, and intracultural knowledge.

H4: If school-based GLE provides more cultural and intercultural learning opportunities, it will have a positive impact on students' global perspective.

H5: If school-based GLE provides more cultural and intercultural learning opportunities, it will have a positive impact on students' intercultural literacy.

Family income and global competence

Although it is often assumed that school-based GLE cultivates students' global competence, this assumption is challenged by sociological studies that have demonstrated that students' educational attainment tends to be a result of their family background rather than the quality and quantity of education they receive in school. The Coleman Report, a landmark empirical sociological study addressing this issue (Coleman et al., 1966), shows that student outcomes are better predicted by family background than by school factors like curricula and facilities. This implies that students' educational outcomes are strongly influenced by family-based preparation for schooling, instead of school factors (Davies & Guppy, 2010).

In general, research shows that students from high-income families have access to richer resources and are thus better prepared for schooling, resulting in more advantageous educational outcomes (Bloome et al., 2018). As Bourdieu and Passeron (1990) show, the children of high-income families are advantaged because their families have richer economic resources (e.g., money), cultural resources (e.g., cultural knowledge and skills), and social resources (e.g., social connections). Economic resources mean that children have more opportunities to receive high quality educational services outside school; cultural resources cultivate children's dispositions in ways conducive to educational performance; and social resources enable children to obtain diverse educational information to help them to plan their education pathways. Thus, students from high-income families tend to have better educational outcomes than students from low-income families.

Students' global competence may also depend on their family income. For instance, high-income families tend to encourage children to explore and analyze different sociocultural issues in the local and global communities (Weenink, 2008), so their children may be better motivated to acquire global and intercultural knowledge and skills, resulting in greater aspiration to global success (Kim, 2011). Moreover, high-income families have richer resources for supporting their children in global learning activities in their leisure time, such as traveling abroad, acquiring a foreign language, and learning about foreign cultures (Hovland, 2009). Accordingly, students

from high-income families may be better prepared than students from low-income families with the knowledge necessary to develop global competence. This leads us to the final set of hypotheses:

H6: Students from high-income families will have richer knowledge, including foreign language proficiency, intercultural knowledge, and intracultural knowledge, than students from low-income families.

H7: Students from high-income families will have a better global perspective than students from low-income families.

H8: Students from high-income families will have better intercultural literacy than students from low-income families.

Method

Research context

China is a newcomer to global competence education (or international understanding education). In 2010, the Chinese government announced the Outline of the National Plan for Medium and Long-Term Education Reform and Development (2010-2020), which emphasizes developing students' global competence (officially referred to as international understanding). In response, Chinese schools and educators in various cities have implemented school-based GLE to nurture students' global competence. They have integrated GLE into existing school curricula (Qu, 2018) and designed school-based GLE lessons and activities (Zhang, 2018).

Shenzhen has demonstrated particular commitment to promoting students' global competence via education. For example, the Shenzhen government has attempted to institutionalize GLE in schools since 2013, when it launched the Plan of Promoting Global Perspective in Shenzhen (2013-2020). This outlined the government's plan to introduce GLE into 95% of China's primary and secondary schools by 2020. Accordingly, many Shenzhen schools now offer school-based GLE (Li, 2015).

Although there are increasing opportunities for students to receive GLE in schools, this does not mean that students from high- and low-income families can achieve equal global competence outcomes. Gravemeyer et al. (2010) report that the poverty rate in Shenzhen is around 13.07%, and Lin et al. (2017) find that Shenzhen's Gini coefficient is around 5.0. This suggests that economic inequality and, consequently, social and educational inequality are serious problems in Shenzhen (Lin et al., 2017). Moreover, disparate levels of affluence between different city districts in Shenzhen also have an impact on schools' resources and education

outcomes, measured in terms of student academic achievements. In this context, family income is a critical factor in students' global competence, because students from high-income families may receive many more resources for learning a foreign language and acquiring intercultural and intracultural knowledge than students from low-income families (Ng et al., 2018). This can also mediate the impacts of resource issues faced by schools in different regions.

In short, Shenzhen is a city committed to promoting students' global competence through school-based GLE, but its effectiveness may be hampered by income inequality. Shenzhen is thus an excellent case for evaluating GLE and ascertaining how students' social class background, measured in terms of income, affects the outcomes of GLE.

Participants

In January and February 2018, the research team sampled one high school in each administrative district of Shenzhen, with the exception of one district that did not provide high school education, based on school lists retrieved from Shenzhen Government Online (<http://www.sz.gov.cn/cn/>) in December, 2017. After the list of participating schools was confirmed, the research team invited the schools to distribute questionnaires to students and return the completed questionnaires. The students were invited to complete the questionnaires in person. Of the 750 distributed questionnaires, 620 were returned, giving a response rate of 82.7%. Of these 620 questionnaires, 599 were identified as valid.

Among these participants, 42.2% were male and 57.8% were female; the average age was 17.0 years ($SD = .33$). Most of the participants were in Grade 11 (93.6%), followed by Grade 12 (3.4%) and Grade 10 (2.9%). In terms of family income, 39.2% earned more than RMB20,000 per month, 25.4% earned between RMB15,001 and RMB20,000 per month, 17.7% earned between RMB10,001 and RMB15,000 per month, 14.4% earned between RMB5,001 and RMB10,000 per month, and 3.3% earned less than RMB5,000 per month. The composition of the sample accurately reflected Shenzhen's characteristics as a high income city that nonetheless has a certain percentage of lower income people.

Measurement

Knowledge

Foreign language proficiency, intercultural knowledge, and intracultural knowledge were measured in the knowledge questionnaire. Eleven items required the participants to rate their foreign language proficiency (e.g., “You can speak a foreign language”) and knowledge of sociocultural issues abroad (intercultural knowledge) (e.g., “You know the cultures of foreign societies”) and in China (intracultural knowledge) (e.g., “You know Chinese culture”) on a 5-point Likert-scale from 1 (*very poor*) to 5 (*very good*).

Global perspective

There were no valid instruments to measure global perspective. Therefore, we adopted a self-designed scale based on the 2018 PISA questionnaire (STI 191-194), and the global literacy scale prepared by R. Zhang et al. (2010), which had been administered in mainland China. A 5-point Likert-scale was adopted to ascertain the degree of participants’ agreement with each statement. The original version of this scale was augmented by four subscales: global awareness, global willingness, global approval, and global literacy confidence. After conducting exploratory factor analysis and confirmatory factor analysis, we found that the three-factor version ($X^2 = 1313.07$, $df = 167$, $X^2/df = 7.86$, comparative fit index [CFI] = .83, root mean square error of approximation [RMSEA] = .10) provided a better model fit than the four-factor version ($X^2 = 1392.04$, $df = 164$, $X^2/df = 8.48$, CFI = .81, RMSEA = .11). Therefore, the three-factor version was adopted in this study. The measurement of global literacy included twenty items in three subscales: exploration (five items), openness (four items), and hybrid identity (eleven items). Acceptable internal consistency ($\alpha = .81$) was found for the exploration subscale. This indicated that the students initiated cultural exploration. The openness subscale measured the students’ attitudes toward inter-cultural acceptance. Cronbach’s alpha indicated good internal consistency ($\alpha = .84$) for this subscale. High internal consistency ($\alpha = .90$) was found in the hybrid identity subscale measuring global identity, inter-cultural identity, and intra-cultural identity.

Intercultural literacy scale

The participants were asked to complete the intercultural literacy scale, which was developed by Ng et al. (2018). Each item used a 5-point Likert scale from 1

(*totally disagree*) to 5 (*totally agree*). The sample items were “I can identify the similarities and differences between countries and between cultures” and “I can communicate with people from other countries to enhance our mutual understanding, even though we hold different opinions and values.”

Global learning education

The participants were asked to report whether they had opportunities to learn about cultural and intercultural practices and issues in GLE lessons, curricula, and activities in school. The responses were used to measure how many cultural and intercultural learning opportunities were provided through school-based GLE.

Family income

The participants reported their families' monthly income. According to the National Bureau of Statistics (2018), the median monthly household income in China is RMB10,781. Therefore, a monthly household income of RMB10,781 was the threshold used in the study to distinguish between high-income and low-income families.

Results

Factor analysis

Exploratory factor analysis and confirmatory factor analysis were used to examine the factor structure of the global literacy survey. According to the confirmatory factor analysis, global perspective comprised three factors: exploration, openness, and hybrid identity ($X^2 = 1313.07$, $df = 167$, $X^2/df = 7.86$, CFI = .83, RMSEA = .10). An internal reliability test suggested that the exploration ($\alpha = .81$), openness ($\alpha = .84$), and hybrid identity ($\alpha = .90$) subscales were reliable. Exploration reflected the students' willingness to explore and investigate different local, global, and intercultural issues around the world. Openness concerned the students' acceptance of intercultural and cultural diversity. Hybrid identity related to individual identification with global and/or intercultural communities.

The factor structure of the intercultural literacy scale was also tested by exploratory factor analysis and confirmatory factor analysis. The results suggested

that intercultural literacy comprised two factors: intercultural tolerance, defined as the ability to tolerate and respect cultural difference and diversity, and intercultural sensitivity, defined as the ability to identify similarities and differences between cultures and appropriately respond to the challenges of cultural diversity. Confirmatory factor analysis indicated an acceptable goodness-of-fit between these two factors ($X^2 = 31.87$, $df = 4$, $X^2/df = 7.97$, $CFI = .97$, $RMSEA = .11$). The intercultural tolerance subscale consisted of three items with an acceptable level of internal reliability ($\alpha = .79$) and the intercultural sensitivity subscale comprised two items with an acceptable level of internal reliability ($\alpha = .79$).

In addition, multigroup invariance comparison was used to investigate the difference between high-income families and low-income families for the constructs of global perspective and intercultural literacy. Three first-order factors, i.e., exploration, openness, and hybrid identity, were included in the global perspective construct. The results suggested that the construct of global perspective was acceptable ($X^2 = 1467.00$; $df = 120$; $X^2/df = 4.92$; $p < .05$; $CFI = .81$; $RMSEA = .08$) and there were no significant differences in global perspective between low- and high-income families ($X^2 = 19.18$; $df = 16$; $p > .05$). The fit indices showed that the intercultural literacy scale had high construct validity. The construct of intercultural literacy contained two first-order factors ($X^2 = 31.87$; $df = 4$; $X^2/df = 7.97$; $p < .05$; $CFI = .97$; $RMSEA = .10$; $RMR = .02$; $GFI = .98$). There was no significant difference between low- and high-income families in the construct of intercultural literacy ($X^2 = 3.94$; $df = 3$; $p > .05$).

Independent *t*-tests among low- and high-income families

The results suggest that there were differences between low- and high-income families for all the variables. As Table 1 shows, compared with their low-income counterparts, students from high-income families attended more school-based GLE and performed better in terms of foreign language proficiency, intercultural knowledge, intracultural knowledge, exploration, openness, hybrid identity, cultural tolerance, and cultural differentiation. Accordingly, these findings support H6, H7, and H8.

Table 1. Independent samples *t*-test among low-income and high-income students

Construct	<i>M (SD)</i>		<i>T</i>
	Low-Income Family (<i>n</i> = 101)	High-Income Family (<i>n</i> = 498)	
School-based GLE	1.63 (.70)	1.40 (.82)	2.63**
Knowledge—foreign language proficiency	3.17 (.72)	3.69 (.74)	-6.49***
Knowledge—intercultural knowledge	3.14 (.58)	3.43 (.66)	-4.20***
Knowledge—intracultural knowledge	3.21 (.57)	3.58 (.64)	-5.41***
Global perspective—Exploration	3.55 (.56)	3.75 (.55)	-3.36**
Global perspective—Openness	3.40 (.45)	3.70 (.50)	-5.42***
Global perspective—Hybrid identity	3.65 (.54)	3.91 (.51)	-4.66***
Intercultural literacy—Cultural tolerance	3.35 (.52)	3.48 (.60)	-2.02*
Intercultural literacy—Cultural sensitivity	3.33 (.56)	3.60 (.63)	-4.08***

****p* < .001; ***p* < .01; **p* < .05

Structural equation modeling

Structural equation modeling was adopted to examine the mediating effects of knowledge and global perspective on the relationship between school-based GLE and intercultural literacy. The fit indices of the model for the full sample (*n* = 599) are shown in Table 2. As Figure 1 shows, school-based GLE was directly positively correlated with intercultural literacy. However, there was a negative correlation between school-based GLE and knowledge. Knowledge was positively correlated with global perspective, which was positively correlated with intercultural literacy. Furthermore, these results indicate that knowledge and global perspective mediate the relationship between school-based GLE and intercultural literacy. Accordingly, the findings support H1, H2, H4, and H5, but reject H3.

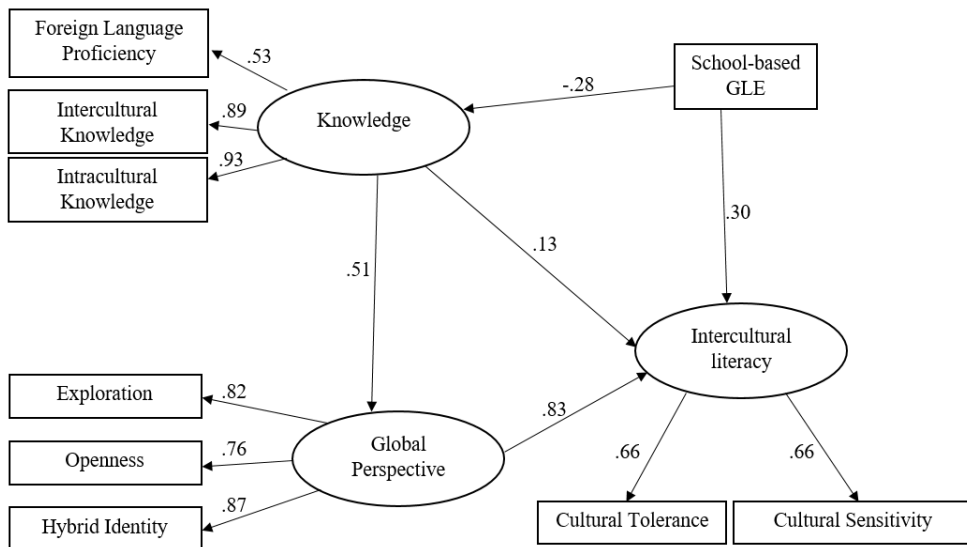
Table 2. Fit indices for the conceptual model

Model	Model Fit Indices						
	χ^2	<i>df</i>	χ^2/df	CFI	RMSEA	RMR	GFI
Full sample (<i>n</i> = 599)	105.07	23	4.57	.97	.08	.02	.96
Low-income family (<i>n</i> = 101)	35.67	23	1.55	.97	.07	.02	.93
High-income family (<i>n</i> = 498)	103.88	23	4.52	.96	.08	.02	.95

Table 3. Nested model comparisons (Assuming model unconstrained to be correct)

Model	Model Fit Indices					
	χ^2	<i>df</i>	NFI	IFI	RFI	TLI
Measurement intercepts	45.89***	8	.02	.02	.01	.01
Structure weight	64.10***	11	.03	.03	.01	.01
Structural intercept	72.40***	12	.03	.03	.01	.01
Structural residuals	74.84***	13	.03	.03	.01	.01

*** $p < .001$; ** $p < .01$

Figure 1. Standardized solutions for structural model—full sample ($n = 599$)

Multigroup invariance comparison

For the model of low-income families ($n = 101$), Figure 2 illustrates that school-based GLE was significantly positively correlated with intercultural literacy. However, there was no significant relationship between school-based GLE and knowledge. These results reveal an indirect relationship between knowledge and intercultural literacy through global perspective. Therefore, these results confirm that students from low-income families develop intercultural literacy through school-based GLE only, not through their knowledge.

In contrast, the model of high-income families (see Figure 3) was similar to the model of the entire sample (see Figure 1). School-based GLE was positively and directly correlated with intercultural literacy. Nevertheless, the relationship between school-based GLE and knowledge was negative. Global perspective was directly and positively correlated with intercultural literacy. Accordingly, students from high-income families develop their intercultural literacy via school-based GLE. However, school-based GLE may compromise their knowledge, and such knowledge would otherwise have a positive impact on their global perspective and intercultural literacy.

Further analysis showed that there was a significant difference between the low-income family model and high-income family model, when all of the paths were constrained ($X^2 = 35.08$; $df = 13$; $p < .05$), when covariances were constrained ($X^2 = 65.40$; $df = 16$; $p < .05$), and when the residuals of all of the variables were constrained to be equal ($X^2 = 105.20$; $df = 24$; $p < .05$) (see Table 2 and Table 3). These findings support the different patterns of global competence between students from low- and high-income families described above.

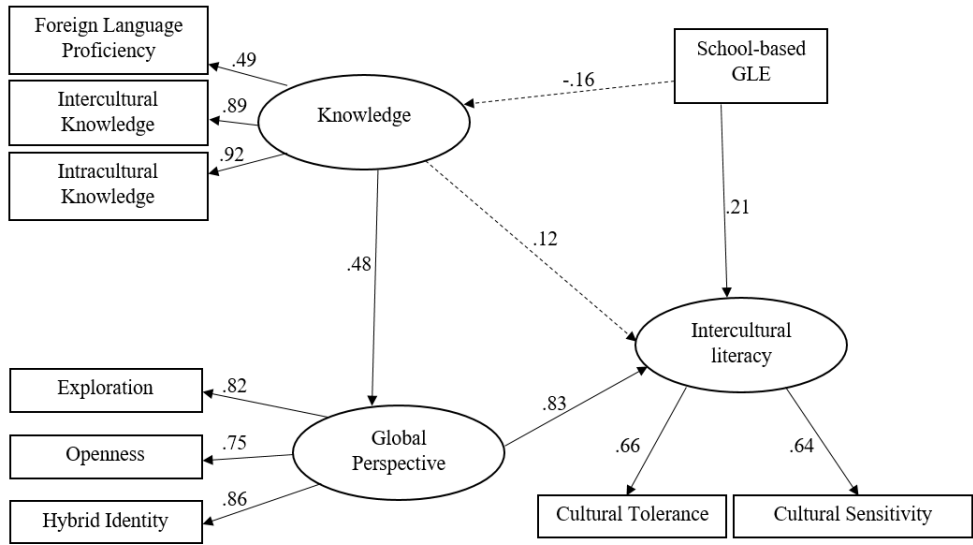


Figure 2. Standardized solutions for structural model—low-income families ($n = 101$)

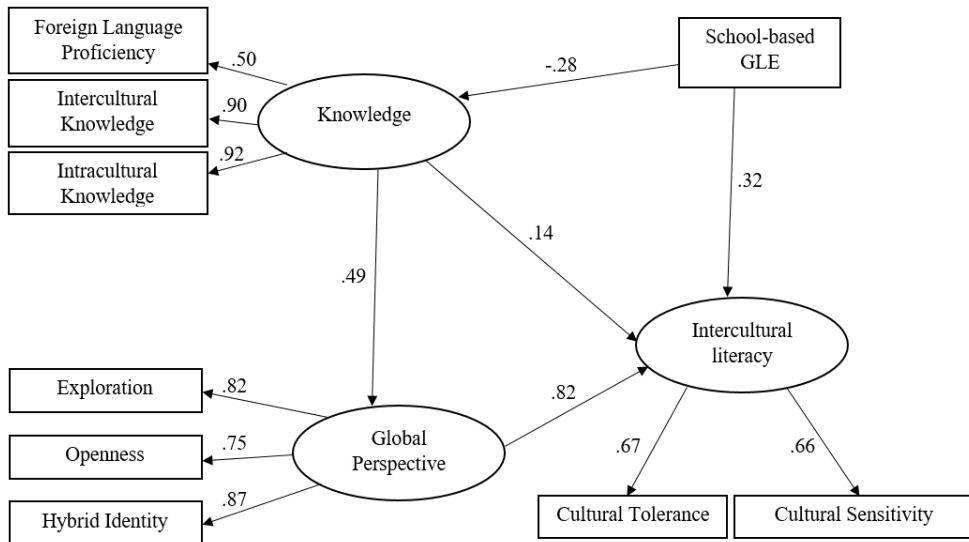


Figure 3. Standardized solutions for structural model—high-income families ($n = 498$)

Discussion

These findings demonstrate that students' foreign language proficiency, intercultural knowledge, and intracultural knowledge have a positive influence on their global perspective and intercultural literacy, indicating that if they have better foreign language proficiency and understanding of intercultural and intracultural issues, they will have stronger global competence. The findings also support the literature on the relationship between family income and global competence (Ng et al., 2018; Weenink, 2008), which finds that students from high-income families tend to have a stronger global perspective and better intercultural literacy than students from low-income families. The findings also indicate that students from high-income families have better knowledge than students from low-income families. The reason might be that children from high-income families benefit from richer family resources, which lay down a better knowledge foundation and in turn create positive synergy with school-based GLE.

The findings to some extent support the sociological literature suggesting that schooling reproduces inequality between students' family backgrounds (e.g., Bourdieu & Passeron, 1990). Nevertheless, the data reveal that the relationships between schooling, family income, and educational attainment may be more complicated, at

least in the case of global competence development. According to the findings, school-based GLE has a negative impact on the knowledge of students from high-income families, and their knowledge still has a positive effect on intercultural literacy (see Figure 3). This implies that schooling may not necessarily benefit, and may even restrict, their global competence development. One possible reason is that the students have already engaged in a variety of global learning activities, and have cultivated global competence knowledge and attitudes outside school.

Chinese society is deeply influenced by Confucian thought. Parents are culturally required to offer their children a high-quality education to help them to succeed in later life (Sun, 2012). Chinese parents are committed to providing their children with a good education not only because of their aspirations for their children but also to avoid being regarded as irresponsible (Leung & Shek, 2011). Because parents from high-income families have much richer resources than their low-income counterparts, they can provide their children with more opportunities to experience many different global learning activities to improve their foreign language proficiency, intercultural knowledge, and intracultural knowledge outside school. Thus, their children may already be equipped with richer global and intercultural knowledge and may perceive the knowledge provided by school-based GLE as inadequate. As a result, these students may perceive school-based GLE as restricting their acquisition of more knowledge to promote their global perspective and intercultural literacy.

Thus, education does not necessarily reduce the disparity in outcomes between students from high- and low-income families, because students from high-income families may still be more motivated and find it easier to learn about global and intercultural skills and issues using prior knowledge obtained from their family (Kim, 2011). This may explain why we observed a negative relationship between school-based GLE and knowledge among students from high-income families, even though knowledge had a positive effect on intercultural literacy. If this explanation is correct, then the reproduction mechanism of schooling may be more complicated than described in existing sociological studies—schooling may conditionally benefit the development of students from high-income families. Further studies should pay attention to this issue to advance our understanding of the reproduction mechanism of schooling.

According to the literature, school-based GLE fosters students' global competence, and can give them opportunities to acquire knowledge that facilitates the development of global perspective and intercultural literacy (Gibson et al., 2008). Nevertheless, the findings of this study do not fully support this argument. First, we find that in general, school-based GLE has a direct positive effect on intercultural literacy and an indirect effect on global perspective through knowledge, but it tends to negatively impact students' knowledge (see Figure 1). Second, we find that for students from low-income families, school-based GLE may not affect knowledge, and thus may

have no effect on intercultural literacy (see Figure 2). These findings imply that school-based GLE in Shenzhen may not address students' need to gain foreign language proficiency and intercultural and intracultural knowledge, which can lead to a stronger global perspective and better intercultural literacy. For example, Li (2015) highlights that some Shenzhen schools nurture students' global competence through experiential learning and project-based learning approaches. To ensure successful learning, these approaches may necessitate students' prior possession of certain kinds of skills, such as information searching, processing, and analysis. Nevertheless, students from low-income families may lack these skills (Wang et al., 2006), thus impeding their learning process. In this situation, students may experience a sense of failure and dissatisfaction in developing a global perspective, which may even reduce their interest in developing intercultural literacy. Moreover, as Zhu and Ruan (2018) observe, Chinese teachers favor traditional, teacher-centered pedagogical approaches despite learning about more progressive types of pedagogy. It is possible that the Shenzhen teachers surveyed in this study also applied traditional approaches to implementing school-based GLE. However, the Asia Society and OECD (2018) indicate that teaching global competence requires interactive, democratic, problem-based, student-centered, and inquiry-based pedagogical approaches. They also show that schools must create safe spaces in which students can freely express opinions, speculate, and debate with fellow students and teachers without being considered discourteous. Thus, school-based GLE is more than a subject, curriculum, or learning activity; it is an open and inclusive learning culture that enables students to experience, learn, and construct knowledge about global competence through structured discussion and debate, project-based learning, service learning, and other collaborative learning activities inside and outside school. As Shenzhen schools and teachers may not create this kind of culture, school-based GLE may not be implemented effectively.

Accordingly, a number of recommendations can be made for education policy-makers to improve school-based GLE. First, as the findings suggest, students' global competence is strongly influenced by family income. Low-income families have fewer resources for supporting students in global learning activities outside school to foster their foreign language proficiency and intercultural and intracultural knowledge. Therefore, to reduce the gap between students from high- and low-income families, education policy makers should provide more resources to help students from low-income families develop global competence. In practice, policy-makers could develop instruments for schools to understand the prior knowledge, expectations, and needs of their students from low-income families, helping them to plan suitable school-based GLE. They may also consider offering more financial support for low-income students to engage in GLE activities like overseas exchange programs. Policy-makers can also consider directly sponsoring

students to join these activities, to increase their opportunities to learn and experience cultural and intercultural practices and issues. They can also subsidize businesses and social organizations to offer complimentary GLE activities for students from low-income families. Otherwise, the global competence gap between students from high- and low-income families will widen.

Second, schools and teachers in Shenzhen should design GLE and create a learning culture that meets their students' need to learn global competence. However, they may not have the autonomy to do this, because China has a top-down and centralized education system (Yalun & Du, 2019). Therefore, education policy-makers should give greater autonomy to individual schools and teachers, because decentralization can empower them to design school-based curricula to respond effectively to their students' learning needs (Cheng, 1996). Policy-makers should also provide training for school leaders and teachers in autonomously designing and implementing school-based GLE.

One limitation of this study concerns the use of a self-reported questionnaire to assess students' knowledge and global competence. The students' responses may have reflected only their self-perceived performance in these domains, rather than their actual knowledge and competence. Therefore, further studies should repeat this study using objective measures of knowledge and global competence. Moreover, the study's cross-sectional design does not illustrate changes in students' global competence over time after participating in school-based GLE. These findings also do not provide information to evaluate which kinds of school-based GLE are more effective. Therefore, researchers should conduct longitudinal studies to investigate how school-based GLE changes students' global competence over time, and evaluation studies to investigate the effectiveness of different school-based GLE approaches. In addition, this study only examines the global competence of high school students in Shenzhen. Therefore, the findings may not be generalizable to other cities. Thus, it is recommended that further studies be repeated with other student populations. Finally, the absence of a valid global competence measurement may have affected the research validity. Thus, further research should be undertaken to develop a valid instrument for use in future studies.

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