CAN CULTURAL INTELLIGENCE' BE DEVELOPED?: A CASE STUDY IN THE TAIWANESE CONTEXT

ผลกระทบหลักสูตรวัฒนธรรมข้ามชาติ และทัศนคติสากลต่อความฉลาดทางวัฒนธรรม กรณีศึกษา: นักศึกษาระดับปริญญาตรี ในมหาวิทยาลัยเอกชนของไต้หวัน

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บทคัดย่อ

รายงานการศึกษาเกี่ยวกับการทดลองนี้มุ่งที่จะศึกษาความสามารถหลักของความฉลาดทางวัฒนธรรมของนักศึกษาระดับปริญญาตรีในมหาวิทยาลัยเอกชนของไต้หวัน กล่าวคือ นครไทเปกำลังได้รับความนิยมอย่างรวดเร็วในระดับนานาชาติ ด้วยเหตุนี้นักศึกษามหาวิทยาลัยจึงมีแนวโน้มว่าจะได้พบและร่วมงานกับเพื่อนร่วมงานและผู้คนจากหลายประเทศในระหว่างการทำงาน ดังนั้นการตระหนักให้เพิ่มความฉลาดทางวัฒนธรรมให้แก่นักศึกษามหาวิทยาลัยจึงสูงขึ้นในทุกวัน ความฉลาดทางวัฒนธรรมคือความสามารถ ซึ่งจะเพิ่มศักยภาพของนักศึกษาในการปฏิสัมพันธ์กับผู้ที่มาจากวัฒนธรรมอื่นได้อย่างมีประสิทธิภาพ วัตถุประสงค์ของการศึกษานี้เพื่อตรวจสอบผลกระทบของหลักสูตรความคิดข้ามวัฒนธรรมและทัศนคติสากล ซึ่งมีส่วนผสมผสานระหว่างประวัติศาสตร์และทฤษฎีข้ามวัฒนธรรมที่เกี่ยวกับความฉลาดทางวัฒนธรรม ซึ่งวัดจากการสำรวจความฉลาดทางวัฒนธรรม ข้อมูลสำหรับการศึกษานี้ได้รวบรวมจากนักศึกษาระดับปริญญาตรี 70 คนในมหาวิทยาลัยเอกชนแห่งหนึ่งในไทเป สาธารณรัฐไต้หวัน โดยใช้แบบทดสอบก่อนและหลังการเรียน วิเคราะห์ด้วยสถิติ t- test การศึกษานี้ได้เปลี่ยนแปลงมิติการสำรวจความฉลาดทางวัฒนธรรมของนักศึกษาในเรื่องทัศนคติที่มีต่อวัฒนธรรมอื่น ๆ เมื่อสิ้นสุดภาคเรียนที่มีระยะเวลาทั้งสิ้น 18 สัปดาห์ (36 ชั่วโมง) ผลการวิจัยพบว่า มีการเปลี่ยนแปลงในเชิงบวกจากการตอบแบบสำรวจความฉลาดทางวัฒนธรรมหลังเรียน

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Abstract

The study reports on an empirical experiment that aimed to identify the key competency of cultural intelligence in a private Taiwanese university. Taipei is quickly gaining an impressive international profile in recent times. Prospective university students will likely work with many colleagues and people from many different countries in the course of their work and therefore a call for increasing university students' cultural intelligence has been increasing day by day. Cultural intelligence is a capability, which increases students' potential ability to effectively interact with people from other cultures. The purpose of the study is to examine the effect of a cross-cultural and global mindset course which contained a mixture of history and cross-cultural theories on cultural intelligence as measured by the

Cultural Intelligence survey The data for the study has been collected from 70 undergraduate students in a private Chinese university in Taipei, Republic of Taiwan. Using a pre-and post-test design and T-test, the study measures change in the dimensions of the Cultural intelligence survey items in students' attitudes towards other cultures at the end of an 18-week (36 hours) semester. The results revealed that there is a positive change in their cultural intelligence survey responses in the posttest.

Keywords: Cultural Intelligence, Intercultural Competence (ICC), Taiwanese Context, Global Mindset

1. Introduction

One meaningful outcome of internationalization efforts at the university level is the development of interculturally competent students particularly in a cosmopolitan city such as Taipei, in the Republic of China. Few universities address the development of interculturally competent students as an anticipated outcome of internationalization as measured through the concept of "intercultural competence". This paper details a research study that examined the effect of a cross-cultural and global mindset course which aimed to (1). establish students' international outlook and analytical thinking on international relations; (2). develop in students have a coherent and in-depth understanding of the cross-culture nature of international relations; (3) develop students' ability to analyze the impact of cross-culture theories on practices of workplaces within different cultures. In this study, the attaining of these objectives was through the measurement of students' intercultural competence. Intercultural competence is defined as "knowledge of others; knowledge of self; skills to interpret and relate; skills to discover and/or to interact; valuing others' values, beliefs, and behaviors; and relativizing oneself. Linguistic competence plays a key role" (Byram, 1997, p. 34). Other components included: World knowledge, foreign language proficiency, cultural empathy, approval of foreign people and cultures, ability to practice one's profession in an international setting" (Lambert, 1994, as cited in Deardorff, 2004, p. 230) were also considered when designing the course.

2. Literature review

2.1 Intercultural competence (ICC) research

Deardorff (2004) sought to determine a definition and appropriate assessment methods of intercultural competence as agreed on by a panel of internationally known intercultural scholars using the Delphi method. She concluded that intercultural competence (ICC) was assessable and measurable. In the various definitions obtained in Deardorff's research (2004), a person's linguistic ability, in either in his/her own language or in another language, to control the communicative process; shift the frame of reference appropriately; identify behaviors; behave appropriately and effectively; participate in interactions and possess good interpersonal skills contribute to their ICC. Students in this course, however, were mostly monolingual in Mandarin Chinese with an intuitive understanding of their own language and culture but a very limited linguistic and cultural proficiency in English. The teacher, an Applied linguist in English and Chinese, taught students those aspects of language control mentioned in Deardorff's research (2004) in English and Chinese. For instance, she taught students meta-functions of ideational meaning, interpersonal textual meaning (Halliday, 1978) to develop students' ability to shift the frame of reference and speak at the appropriate register. Particularly emphasis was made to the interpersonal metafunction of Halliday's theory through illustrations from the Chinese language. Politeness and pragmatic theories were taught to highlight the differences in conversational interactions in different cultures. Concepts such as high and low context cultures were also explicated theough different social structures of different countries with particular application to the Taiwanese culture.

To develop the ability to explicitly identify behaviors in one's own culture and new behaviors in other cultures, students were introduced to concepts such as kinesics, proxemics, chronemics as well as high context and low context cultures outlined in the seminal book "The Silent Language" (Hall & Hall, 1959). Taiwanese culture, in Hall's definition can be defined as a high context culture with a comparatively large power distance when compared to some Western countries (Hofstede, 1980). To provide tools for analyzing different cultures, students were introduced to the conception of national cultures which sees national cultures (Hofstede, 1980, 2001) as well-defined entities that are homogeneous (no cultural

variation within a country), stable over time and that can therefore be compared. They were also introduced the GLOBE research program conducted by House, Hanges, Javidan, Dorfman, and Gupta (2004). Students used Hofstede's national cultures website (https://www.hofstede-insights.com/product/compare-countries/) and value dimensions of power distance, individualism, masculinity, uncertainty avoidance, long-term orientation, and indulgence as individual group exercises. Hofstede's national cultures came under criticism from several researchers. Criticism consisted of treating culture in an essentialist manner (see among others, Dervin, 2012; Fang, 2006; Piller, 2011); seeing culture as homogeneous despite the diverse regions (McSweeney, 2002; Piller, 2011; Stening & Zhang, 2007), as exclusive (a culture is categorized as collectivist or individualist and do not take the divergent subcultures and contexts (Fang, 2012; Osland & Bird, 2000) nor interactions into account (Sackmann & Phillips, 2004; Sۊderberg & Holden, 2002).

Studies that have analyzed the role of language in internal communication in the global context (Louhiala-Salminen, Charles, & Kankaanranta, 2005), have shown that foreign language is the main source of communication problems. In Louhiala-Salminen et al. (2005, p. 419), analyses of verbal interactions of Swedish and Finnish business colleagues and their email correspondences in Business English Lingua Franca (BELF) concluded that 'the pragmatic communication aspects of language use should be emphasized (see also (Charles & Marschan-Piekkari, 2002; Hall & Hall, 1959) Secondly, learners should be helped to use contextual cues and to identify the situational presuppositions of the other interactants. This means actually listening to what the other BELF speakers say and imply in interaction. Thirdly, learners should be encouraged to be aware of their own and of their interactants discourse practices, conventions, and cultural preferences. When they learn to know and appreciate a range of communication cultures, including their own, they will also learn to appreciate the need to be flexible.'

In a multinational context, many companies chose English as a business lingua franca (Louhiala-Salminen et al., 2005); Ly (2012) cautioned that it is necessary to be careful that the concept of 'culture' is not used as an excuse or alibi, especially where collaborators from both cultures are of equal status in terms of expertise, that other variables such as lack of internal procedure or the linguistic proficiency in English or another common language might account for

the misunderstanding between participants. In this study, the lecturer involved in measuring ICC was an Australian expatriate who spent most of her career (over 30 years) in tertiary institutions in Australia. Though she is ethnically Chinese, completely bilingual and bicultural having completed her Ph.D. in English specializing in acoustic phonetics and Applied Linguistics. Having resided in Australia for some 30 years, her cultural biases might have been more Western than that of a Chinese. The course was taught in Chinese using a recently published book by French author Jean-Christophe Victor. Virginie Raisson, Frank Tetart: The world, what does the future world look like? (Translated into Chinese).

The present class consisted of 111 students. The management of 111 students limited the kind of assessment methods used. To assess the outcome of the course, student learning was assessed through a multiple-choice test, weekly homework, attendance, and final course presentation. The multiple-choice test was administered during mid-semester and assessed historical knowledge covered in the first 9 weeks of the semester. Homework and attendance marks were collected throughout the semester. The final course presentation mark was allocated on a collaborative project involving 5-6 class members. To measure ICC improvement, a pre-/posttest design was adopted using the self-report instrument called Cultural Intelligence Survey (CQS) (explain with reference?).

2.2 Intercultural Competence (ICC) research in the Chinese context

In the pioneering work Hall and Hall (1959) and his colleagues did in the field of intercultural communication in Japan, Hall stressed that interaction with people from different cultures involved more than the mere exchange of words. Cultural systems of beliefs, values, and worldviews were also involved. Hall's work and subsequent work of Japanese scholars and language educators also directed the attention of Chinese scholars and language educators to nonverbal aspects of Chinese interpersonal and intercultural communication (Cai, 2019; Yang, 2010, 2013). Hall's theoretical perspective, particularly high-context and low-context communication, facilitated the exploration of Chinese cultural concepts as they relate to interpersonal and intercultural communication, even to influence the design of an official website (Tanveer, Mouratidis, & Preston, 2009; Wang, 2008). However, power and privilege issues especially in hierarchical relationships in workplaces in

Chinese society are still under research (Ly, 2013). This was also the reason why the lecturer decided to include Hall and Fang's theories of cultural dimensions in the curriculum.

2.3 Global Mindset and Cultural Intelligence

Bücker and Poutsma (2010) contend that global mindset and cultural intelligence have been treated as similar concepts and there appeared to show major overlap. However, cultural intelligence is a useful construct when investigating intercultural interactions that may be marked by high cultural complexity, but that the concept does not incorporate business complexity to a significant degree (Andresen & Bergdolt, 2017). Since the sample of participants in this study were university students rather than business managers, Cultural intelligence (CQ) had been deemed suitable to measure intercultural competency.

As conceptualized by Ang, Van Dyne and Koh (2006; 2007), CQ is a construct with four dimensions: metacognitive, cognitive, motivational, and behavioral. Metacognitive CQ is the person's cultural consciousness and awareness of cultural cues during interactions with people from other cultural backgrounds. People with metacognitive CQ consciously question their cultural assumptions, reflect on these assumptions, and then develop cultural knowledge and skills during interactions with people from other cultures (Ang & Van Dyne, 2008). Cognitive CQ is a competence-based on the knowledge of norms, practices, and conventions used in different cultural settings, acquired through education and personal experience (Ang et al., 2007; Ang and Van Dyne, 2008). Motivational CQ represents a capability to direct attention and energy toward learning about and functioning in situations characterized by cultural differences. People with high motivational CQ have an intrinsic interest in cross-cultural situations and are confident of their cross-cultural effectiveness (Ang et al., 2007). A high score on the motivational CQ dimension also reflects a high level of self-efficacy (Ng & Earley, 2006). Finally, behavioral CQ refers to the capability to exhibit appropriate verbal and nonverbal behavior when interacting with people from different cultures (Ang, Van Dyne, & Koh, 2007). People with high behavioral CQ behave appropriately in cross-cultural settings because of their good verbal and nonverbal communication capabilities.

3. Method

3.1 Sample characteristics

Data for this study was obtained from a Cultural Intelligence Questions (CQS) online survey filled in by 70 undergraduate students in a private university in Taipei, Taiwan. Out of 111 students in the course, only data from students who filled in both pre and post-tests were reported here. Descriptive characteristics in Table 1 show that the sample consists of 58.57 percent female respondents and 41.43 percent male respondents. 84.29% of the respondents belonged to the 18-29 years old group, with 8.57% and 7.14% of respondents belonging to the 30-44- and 45–60-year-old groups, respectively. All students work during the day with many mature age students studying at the university to improve themselves as they lacked opportunities when they were younger due to career or family reasons. Many students participated in the course with integrative motivation (Gardner, 2001).

In terms of frequency of contact with people from different cultures, in the pretest surveys, 56.14 percent of students seldom had contact with foreigners; 28.57 percent occasionally had contact, 8.57% had contact with foreigners often and 5.71 percent had contact with foreigners all the time. In the posttest surveys, the percentage for seldom having contact went down to 44.29 percent, the figure for occasionally having contact went up to 41.43 percent, others remained the same. This significant increase in occasional contact (rising from 28.57 percent to 41.43 percent) could be due to the fact the content of the course increased their confidence in speaking to foreigners which caused them to seek out cross-cultural encounters deliberately.

Furthermore, 60 percent of the respondents have completed High School or vocational education, 37.14 percent have a bachelor's degree, and 2.86 percent are pursuing a master's degree. In terms of the degrees they were doing, 72.90 percent (n=51) were first- and second-year students undertaking this unit as a compulsory unit but had yet chosen a degree to major in. The rest of the student body was divided between Advertising (n=4), Digital Media (n=2), Fashion (n=1), Finance (n=2), Information Management (n=1), International Business (n=6) and Tourism (n=3). First-year students constituted 70 percent; second-year students constituted 14.3 percent; third-year students constituted 7.1percent and Fourth-year students constituted 8.6 percent.

In terms of time spent abroad before attending the course, 78.6 percent have spent less than 3 months, 5.7 percent have spent between 3-6 months, 5.7 percent have spent between 1-3 years, 7.1 percent between 3-5 years, and 2.9 percent more than 5 years abroad.

Table 1 Sample characteristics

Independent Variables	**Frequency**	**Percent**
Gender (male/female)	41/29	58.57/41.43
Age groups		
18-29 years old	59	84.29
30-44 years old	6	8.57
45-60 years old	5	7.14
>60 years old	0	0.00
Total	70	100.00
1. Pre-test: How often do you have contacts with people from different cultures?		
Contact frequency categories	**Frequency**	**Percent**
Seldom	40	57.14
Occasionally	20	28.57
Often	6	8.57
All the time	4	5.71
Total	70	100
2. Post-test: How often do you have contacts with people from different cultures?		
Contact frequency categories	**Frequency**	**Percent**
Seldom	31	44.29
Occasionally	29	41.43
Often	6	8.57
All The Time	4	5.71
Total	70	100.00

3. What is your highest education level?		
Education level	**Frequency**	**Percent**
High School/Vocational School level	42	60.00
Bachelor	26	37.14
Master's	2	2.86
Total	70	100.00
4. What degree are you currently doing?		
Degrees	**Frequency**	**percent**
Advertising	4	5.7
Digital Media	2	2.9
Fashion	1	1.4
Finance	2	2.9
Information science	1	1.4
International business	6	8.6
Have not yet chosen a degree	51	72.9
Tourism	3	4.3
Total	70	100.0
5.Year levels of students		
Year Levels	**Frequency**	**Percent**
First-year (have not chosen a degree)	49	70.0
Second-year	10	14.3
Third-year	5	7.1
Fourth year	6	8.6
Total	70	100.0
6. Total Time Spent overseas before attending the course		
Length of time categories	**Frequency**	**Percent**
<3 months	55	78.6
3-6 months	4	5.7
1-3 years	4	5.7
3-5 years	5	7.1
>5 years	2	2.9
Total	70	100.0

This cohort of students averaged 24.44 years of age. They were mostly millennials with a few mature students mixed in. Further, the degrees they were undertaking all had this course as a compulsory unit and they all worked during the day and attended their degrees from 6-11 pm during the week. This course was run from 8.50 to 10.25 pm. totaling 1.30 hours per session. The course was called 'Global mindset and multiculturalism'. This course was taught from September 2019 till the 10th of January 2020.

The course started with nine weeks on how the world map was constructed because of the first and second world wars. Then teaching turned to several ICC theories and concepts such as Hall's high and low contexts, kinesics, proxemics, and chronemics (Hall, 1959), and Hofstede's cultural dimensions (2003). To increase interactivity in teaching, exercises using an online e-learning platform called Zuvio School (https://irs.zuvio.com.tw/), were completed by students during class on the mobile phones they brought to class. Over the course ten such interactive exercises were administered and completed. Each exercise concerned the topic for the week.

3.2 Questionnaire design and measures

The survey instrument consisted of two parts. To assess CQ, the second part contains Ang et al.'s CQS (2007). The first part of the instrument featured demographic items: gender (female, male); age groups; education level; time spent abroad (please see Table 1). The CQS consists of 20 items, covering the four dimensions of CQ: 4 metacognitive CQ items such as item 12 'I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds', 6 cognitive CQ items such as item 6. 'I know the legal and eco-nomic systems of other coun-tries', 5 motivational CQ items such as item 1. 'I enjoy interacting with people from different cultures' and 5 behavioral CQ items such as item 16. 'I change my verbal behav-ior (e.g. accent, tone) when a cross-cultural interaction requires it'. All CQS items were measured on the 5-point Likert-type scales, ranging from 1(strongly disagree) to 5 (strongly agree).

3.3 Data analysis

First, an assessment of scale reliability using Cronbach's α values was conducted for both pre and post-test of CQS. α values greater than or equal to 0.70 suggest acceptable reliability (Nunnally & Bernstein, 1994). Second, the purpose of this research is to find out what demographic variables seem to influence the survey responses and whether there are any statistically significant changes in students' survey responses for CQS items. Due to different group sizes of students according to the variables of 'age', 'year level', 'degree', 'total time spent overseas before starting the course' (see Table 1) being considerably different and the data collected not being normally distributed, nonparametric tests for 2 independent samples had been used to assess the effect of 'Gender' on survey responses. The same has also been used to assess whether 'gender' affected student performance for the midterm test, attendance, and homework. To ascertain whether there were significant differences in the means for two paired items (pre-test and posttest items), the following hypothesis had been proposed: after an eighteen-week (1.5hours per week) teaching intervention, the means of students' post-test survey responses for all items would be higher or significantly higher than their pretest responses for the same items. For variables with three or more groups, i.e., age-group, highest educational level, year level, total time spent abroad before course and frequency of contact with foreigners, nonparametric tests for K independent samples had been used to examine their effect on pre and post-test survey responses.

Results

4.1 Reliability data of items in the pre and post-test CQS surveys

When calculating the reliability of a set of data, cronbach's alpha, α (or coefficient alpha), developed by Lee Cronbach in 1951 is often used. Cronbach's alpha tests if multiple questions on Likert scale surveys are reliable. These questions measure unobservable variables like a person's conscientiousness, neurosis or openness or in this case, for instance, motivation. These are very difficult to measure in real life. Cronbach's alpha would inform readers how closely related a set of test items are as a group. The Cronbach's alpha for each of the four CQS dimensions was first computed for the pre-test surveys and then for the post-test surveys. Most

of the Cronbach's alpha coefficients for the pre-test surveys were satisfactory, ranging from .80 for metacognitive CQ (MC), .85 for cognitive strategies CQ (COG) and .88 for motivational strategies CQ(MOT). Only the Cronbach's Alpha coefficient for Behavioral strategies CQ (BEH) was .68, slightly below the acceptable level of .70(Nunnally & Bernstein, 1994). The Cronbach's alpha for each of the four CQS dimensions for the posttest surveys was satisfactory, ranging from .84 for metacognitive CQ (MC), .91 for cognitive strategies CQ (COG), .83 for motivational strategies CQ (MOT), and .82 for Behavioral strategies CQ (BEH).

4.2 Two related samples test results on pre and post-test survey responses

Because the data was collected on an ordinal scale, a Wilcoxon Signed-Ranks Test was run on the pre and posttest survey scores and the output indicated that mean of thepost-test scores was statistically significantly higher than the mean of pre-test scores for item 11: 'I know the rules for expressing non-verbal behaviors in other cultures.', Z=-3.510, p=.000, with the sum of ranks (130.50-572.50); for item 15: 'I check the accuracy of my cultural knowledge as I interact with people from different cultures.', Z=-2.180, p=0.029 with the sum of ranks (97.00-254.00); for item 16: 'I change my verbal behavior (e.g. accent, tone) when a cross-cultural interaction requires it.', Z=-2.757, p=0.006 with the sum of ranks (123.50-404.50); item 17: 'I use to pause and silence differently to suit different cross-cultural situations.', Z=-1.964, p=0.050 with the sum of ranks (156.00-340.00); for item 18: 'I vary the rate of my speaking when a cross-cultural situation requires it.', Z=-3.430, p=0.001 with the sum of ranks (93.00-403.00).

4.3 Effect of other variables on survey responses

4.3.1 Variable: Gender

To assess the effect of 'Gender' on respondents' responses before and after teaching, a Mann-Whitney U test for non-parametric data was used due to the lack of normality in the distribution of the male and female data. The data showed that the only statistically significant difference in the mean ranks between female and male students related to survey item 4: I enjoy living in cultures that are unfamiliar to me, with Z=2.208, p=0.027, mean rank for females is 31.35; for males

is 41.36. For the posttest survey responses, for the same item, Z=-2.158. p=0.031, mean rank for females is 31.43 and males is 41.28. No significant differences in the mean ranks of responses for all other items were found between female and male students. To assess the effect of gender on dependent variables such as the mid-term test mark, homework mark, and attendance mark, a Mann-Whitney test was carried out for each variable with a near significant result yielded only for the independent variable 'attendance mark' with Z=-1.703, p=0.088, mean rank for females is 38.00 and for males is 31.97.

4.3.2 Pearson correlation between mid-term test, homework, attendance marks and age

There is a significant correlation at p=0.05 level between homework and mid-term test marks (r =0.280, p=0.019) and between homework and attendance mark(r=0.308, p=0.01 level); and between age and homework at (r=0.320, p=0.007). This suggests that to perform well in this class, it would have been essential to attend the weekly lectures and complete homework tasks. Secondly, the older the students the more homework they completed.

4.3.3 Variable: Age-groups and pre and posttest survey responses

For the independent variable 'age group' is concerned, in the pretest, with item 16: 'I change my verbal behavior (e.g. accent, tone) when a cross-cultural interaction requires it.' a significant difference was found between groups of students as demonstrated by a Kruskal-Wallis H test, a non-parametric test, X^2=7.230, p= .027 with a mean rank survey score of 33.36 for 18-29-year-old students; 38.83 for 30-44-year-old students and 56.80 for 45-60-year-old students. Pairwise comparison for age groups for this item indicates that the significant difference is contributed by students in the 45–60-year-old group when compared to students in the 18–29-year-old group.

In the posttest, with item 3: 'I am sure I can deal with the stresses of adjusting to a culture that is new to me.' a significant difference was found between groups of students as demonstrated by a Kruskal-Wallis H test, X^2=9.976, p= .007 with a mean rank survey score of 35.67 for 18–29-year-old students; 50.17 for 30–44-year-old students and 15.90 for 45-60-year-old students. Pairwise comparison for age groups for this item indicates that the significant difference is contributed by students in the 45–60-year-old group when compared to students in the 30–44-year-old group.

For item 4: 'I enjoy living in cultures that are unfamiliar to me.', a significant difference was found between groups of students as demonstrated by a Kruskal-Wallis H test, X^2=9.284, p= .010 with a mean rank survey score of 35.15 for 18–29-year-old students; 53.00 for 30–44-year-old students and 18.60 for 45–60-year-old students. Pairwise comparison for age groups for this item indicates that the significant difference is contributed by students in the 30–44-year-old group when compared to students in the 45–60-year-old group.

4.3.4 Variable: Year Level and pre-test and posttest survey responses

For the independent variable 'year level', in the pretest, with item 5: 'I am confident that I can get accustomed to the shopping conditions in a different culture.' a significant difference was found between year levels as demonstrated by a Kruskal-Wallis H test, *p*= .043 with a mean rank survey score of 38.05 for first-year students 18-29-year-old students; 17.50 for third-year students and 41.50 for fourth-year students. Pairwise comparison for age groups for this item indicates that the significant difference is contributed by students in the third-year students compared with first-year students' and third-year students compared to students in the fourth year.

For the independent variable 'year level', in the pretest, with item 15: 'I check the accuracy of my cultural knowledge as I interact with people from different cultures.' a significant difference was found between year levels as demonstrated by a Kruskal-Wallis H test, *p*= .008 with a mean rank survey score of 36.96 for first-year students; 19.20 for second-year students, 46.60 for third-year students and 41.50 for fourth-year students. Pairwise comparison for year level for this item indicates that the significant differences are contributed by students in the second-year students compared with first-year students, second-year students compared to students in the fourth year and second-year students compared to third-year students.

4.3.5 Variable: Highest educational Level and pre-test and posttest survey responses

For the independent variable 'highest educational level', in the posttest, with item 14: 'I am conscious of the cultural knowledge I apply to cross-cultural interactions.' a significant difference was found between different educational levels

as demonstrated by a Kruskal-Wallis H test, *p*= .009 with a mean rank survey score of 31.79 for students with high school certificates; 39.12 for students with bachelor's degrees, 66.50 for students with master's degrees. Pairwise comparison for age groups for this item indicates that the significant differences are contributed by students with high school certificates compared with students with master's degrees. Students with master's degrees scored considerably higher than students with High school qualifications.

For the independent variable 'highest educational level', in the posttest, with item 8: 'I know the cultural values and religious beliefs of other cultures.' a significant difference was found between different educational levels as demonstrated by a Kruskal-Wallis H test, *p*= .004 with a mean rank survey score of 30.32 for students with high school certificates; 41.37 for students with bachelor's degrees, 68.00 for students with master's degrees.

Pairwise comparison for age groups for this item indicates that the significant differences are contributed by students with high school certificates (mean rank: 30.32) compared with students with master's degrees (mean rank=68.00). Students with master's degrees scored considerably higher than students with High school qualifications.

For the independent variable 'highest educational level', in the posttest, with item 9: 'I know the marriage systems of other cultures.' a significant difference was found between different educational levels as demonstrated by a Kruskal-Wallis H test, *p*= .046 with a mean rank survey score of 31.90 for students with high school certificates; 39.38 for students with bachelor's degrees, 60.50 for students with master's degrees.

Pairwise comparison for age groups for this item indicates that the significant differences are contributed by students with high school certificates (mean rank: 31.90) compared with students with master's degrees (mean rank=60.50. Students with master's degrees scored considerably higher than students with High school qualifications.

For the independent variable 'highest educational level', in the posttest, with item 14: 'I am conscious of the cultural knowledge I apply to cross-cultural interactions.' a significant difference was found between different educational levels as demonstrated by a Kruskal-Wallis H test, *p*= .014 with a mean rank survey

score of 31.79 for students with high school certificates; 39.12 for students with bachelor's degrees, 66.50 for students with master's degrees. Pairwise comparison for age groups for this item indicates that the significant differences are contributed by students with high school certificates (mean rank: 31.79) compared with students with master's degrees (mean rank=66.50. Students with master's degrees scored considerably higher than students with High school qualifications.

4.3.6 Total time spent abroad before the course and the pretest survey response.

For the independent variable 'total time spent abroad before the course', in the pre-test, with item 7: 'I am conscious of the cultural knowledge I apply to cross-cultural interactions.' a significant difference was found between different periods spent overseas as demonstrated by a Kruskal-Wallis H test, p= .017 with a mean rank survey score of 32.04 for students who had traveled overseas less than 3 months; 58.00 for students who had traveled overseas between 3-6 months; 45.10 for students who had lived overseas 3-5 years and 27.50 for students who had lived overseas more than 5 years. Pairwise comparison for the variable 'total time spent overseas before the course' for this item indicates that the significant differences are contributed by students who lived overseas between 1-3 years compared to students who lived overseas for only 3 months. Furthermore, students who had lived overseas between 3-6 months had a higher mean rank than students who had lived overseas only for 3 months.

For the independent variable 'total time spent abroad before the course', in the pre-test, with item 12: 'I am conscious of the cultural knowledge I use when interacting with people with different cultural backgrounds.' a significant difference was found between different periods spent overseas as demonstrated by a Kruskal-Wallis H test, p= .046 with a mean rank survey score of 32.88 for students who had traveled overseas less than 3 months; 56.00 for students who had traveled overseas between 3-6 months; 30.50 for students who had lived overseas 1-3 years, 43.70 for students who had lived overseas 3-5 years and 56.00 for students who had lived overseas more than 5 years. Pairwise comparison for the variable 'total time spent overseas before the course' for this item indicates that the significant differences are contributed by students who had lived overseas between 3-6 months (mean rank=56.00) had a higher mean rank than students who had lived overseas only for 3 months (mean rank=32.88).

For the independent variable 'total time spent abroad before the course', in the post-test, with item 19: 'I change my non-verbal behavior when a cross-cultural situation requires it.' a significant difference was found between different periods spent overseas as demonstrated by a Kruskal-Wallis H test, p= .010 with a mean rank survey score of 35.25 for students who had traveled overseas less than 3 months; 49.25 for students who had traveled overseas between 3-6 months; 11 for students who had lived overseas 1-3 years, 36.00 for students who had lived overseas 3-5 years and 62.50 for students who had lived overseas more than 5 years. Pairwise comparison for the variable 'total time spent overseas before the course' for this item indicates that the significant differences are contributed by students who had lived overseas between 3-6 months (mean rank=49.25) had a higher mean rank than students who had lived overseas for 1-3 years (mean rank=11.00). Furthermore, students who had lived overseas for more than 5 years (mean rank=62.50) had a higher mean rank than students who had lived overseas for 1-3 years (mean rank=11.00).

4.3.7 Frequency of contacts before the course and the pre-survey responses

For the independent variable 'frequency of contact with foreigners', in the pre-test, with item 7: 'I know the rules (e.g., vocabulary, grammar) of other languages.' a significant difference was found between different periods spent with foreigners. Pairwise comparison for this variable the significant differences are contributed by students who had occasionally (mean rank=3) and often (mean rank=4) had contact with foreigners compared to students who seldom (mean rank 2) had contact with foreigners. Furthermore, there is also a statistical difference between students who 'often' had (mean rank 4) and 'all the time had contacts with foreigners' (mean rank=3).

For the independent variable 'frequency of contact with foreigners', in the pre-test, with item 15: 'I check the accuracy of my cultural knowledge as I interact with people from different cultures.' a significant difference was found between different periods spent overseas. Pairwise comparison for the variable 'frequency of contact with foreigners' for this item indicates that the significant differences are contributed by students who had daily contact with foreigners (mean rank=4.5) compared to students who seldom (mean rank =4) had contact

with foreigners. Furthermore, there is also a statistical difference between students who had daily contact with foreigners (mean rank=4.5) compared to students who 'occasionally' had contacts with foreigners (mean rank 4).

4.3.8 Variables of frequency of contacts, Age group, year level, educational level, total time spent abroad before the course on mid-term test mark, homework mark, and attendance mark.

To calculate the effect of frequency of contacts, Age group, year level, educational level, total time spent abroad before the course on the mid-term test, homework, and attendance marks, a one-way ANOVA was conducted. There was a statistically significant difference between age groups as demonstrated by one-way ANOVA (F (2,67) = 3.95, p= .024). A Tukey post hoc test, a test that shows where the statistically significant difference between age groups, demonstrated by ANOVA, comes from, indicated that the 45–60-year-old group was achieved a statistically significantly higher mark in homework than the 18-29 age group (p= .024). There was no statistically significant difference between the 18-29 and 30-44 age groups (p= .175) or between the 30-44 and 45-60 age groups (p = .878).

There was a statistically significant difference between year levels as demonstrated by one-way ANOVA (F (2,67) = 4.12, p= .010). A Tukey post hoc test showed that the first-year students (Mean=94.98) attended statistically significantly more classes than the fourth-year students (Mean=66.67, p= .007); second students (Mean=93.85) attended statistically significantly more classes than the fourth-year students. (Mean=66.67, p= .043); There were no statistically significant differences in attendance levels between other year levels. No significant differences between groups for the variable's frequency of contacts, educational level and total time spent abroad before the course.

Conclusion

The use of CQS successfully elicited statistically significant gains, as perceived by students, in the posttest surveys in cognitive strategy items (item 11), meta-cognitive strategies (items 15, 16) and behavioral strategies (items 17 and 18). One of the findings was that many misunderstandings created were mostly language-oriented misunderstandings. This agrees with conclusions made by Louhiala-Salminen et al. (2005) and Deardorff)2004(that the pragmatic

communication aspects of language use should be emphasized and contextual cues to identify the situational presuppositions of the other interactants need to be explicitly taught and practice so that students practice how to decipher what other interactants imply in their speech and students' self-awareness of their own culture and language practice in discourses and convention are also extremely important. Learning to be and appreciate the need to be flexible may come from their knowledge and appreciation of cultural differences. Research findings in this study recommend that ICC courses need to be cross-disciplinary to include linguistic, non-linguistic, historical and other associated content in its curriculum.

This study also revealed that 'homework' and 'attendance' were correlated at a significant level. Given the interactive nature of some of the activities in class, many linguistic and cultural insights from the lecturer's extensive experience were shared in class. Such discussion exerted influence on students' thinking on intercultural issues and affected their motivation for completing homework. This study is limited to a sample of students dominated by first-year students with only 70 students. However, it proved that the CQS was a suitable instrument to measure intercultural growth. With a larger and more differentiated sample containing near to equal group sizes for each year level, interesting differences in growth might be found in future studies.

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