**An Examination of Two Major Constructs of Cross-Cultural Competence:**

**Cultural Intelligence and Intercultural Competence**

**Abstract**

*Cross-cultural competence* (CCC) is an important ability for individuals in today’s globalized world. To improve our understanding of it, this study examines the relationship between two major constructs of CCC - *cultural intelligence* (CQ) and *intercultural competency.* Results from a canonical correlation analysis of online survey data collected from 246 Police Officers in Ireland indicated a strong relationship between CQ and intercultural competence. The lower stages of intercultural competence were more negatively related to metacognitive and motivational CQ facets; higher stages of intercultural competence were more positively related to behavioral and cognitive CQ facets. Metacognitive CQ was positively related to both lower and higher stages of intercultural competence. The results offer insights on the developmental patterns of various components of CCC. Implications for the conceptualization and the measurement of CCC are discussed.

***Keywords:*** Cross-cultural competence; Intercultural competence; Cultural intelligence

# Introduction

In recent years, research has paid more attention to the differences in the abilities of individuals to deal effectively with people from other cultural backgrounds, given that we are all more connected globally ([Bernardo & Presbitero, 2017](#_ENREF_6); [Li, Mobley, & Kelly, 2016](#_ENREF_26)). In various disciplines, such as Psychology ([Chiu, Lonner, Matsumoto, & Ward, 2013](#_ENREF_10); [Matsumoto & Hwang, 2013](#_ENREF_27)) and International Business ([Johnson, Lenartowicz, & Apud, 2006](#_ENREF_22)), this ability is known as *Cross-Cultural Competence* (CCC). A number of constructs have been developed in an attempt to better understand CCC, yet each contain different components hence there is no commonly accepted conceptualization of it ([A. K. y. Leung, Lee, & Chiu, 2013](#_ENREF_24); [K. Leung, Ang, & Tan, 2014](#_ENREF_25)). This ‘fuzziness’ has not led to a significantly better understanding of the CCC concept ([Bartel-Radic & Giannelloni, 2017](#_ENREF_3)) and therefore there is a need for our understanding to be improved. This could offer insights to guide international talent assessment and development ([Bartel-Radic & Giannelloni, 2017](#_ENREF_3); [Matsumoto & Hwang, 2013](#_ENREF_27)).

Hitherto, much of the research on CCC has tended to focus on identifying personal characteristics which arguably make individuals more culturally competent based on a Cognitive, Affective and Behavioral (CAB) paradigm ([M. R. Hammer, 2015](#_ENREF_18)). One of the most studied constructs under the CAB paradigm is *Cultural Intelligence* ([CQ, Earley & Ang, 2003](#_ENREF_11)). Other research pays more attention to the developmental paradigm in studying CCC ([D. P. S. Bhawuk, 2009](#_ENREF_8); [M. R. Hammer, 2015](#_ENREF_18)) focusing on stages that individuals need to go through to become more culturally competent. One of the most studied constructs under the developmental paradigm is *Intercultural Competence* based on the Developmental Model of Intercultural Sensitivity (DMIS, [M.J Bennett, 1986](#_ENREF_4); [M. J. Bennett, 2004](#_ENREF_5); [M.R. Hammer, Bennett, & Wiseman, 2003](#_ENREF_20)). Given that research into CCC is still at an early stage, these two paradigms have been studied separately in the past ([Bartel-Radic & Giannelloni, 2017](#_ENREF_3)). However, in order to improve our understanding of the developmental pattern of various components of CCC, these two paradigms of research need to be integrated. This study, therefore, examines the relationship between CQ and Intercultural Competence. In doing so, it addresses the following key questions: (1) do components of CCC develop in a cohesive and consistent manner; (2) do some components of CCC need to be developed first in order for others to follow; (3) do some components of CCC develop in a nonlinear manner. The findings contribute to a deeper understanding of CCC, as well as ways to improve its measurement.

**1.1. Cultural intelligence**

*Cultural intelligence* (CQ) is defined as the ability that individuals have to adapt more effectively to a new cultural setting in which people think and behave differently ([Earley & Ang, 2003](#_ENREF_11)). It is a unique intelligence that helps us understand why some individuals are arguably more effective than others in an international environment ([Thomas, et al., 2015](#_ENREF_36)). Following Sternberg’s ([1986](#_ENREF_34)) multiple-facets framework of intelligence, CQ was initially conceptualized as a four dimensional construct that includes metacognitive, cognitive, motivational and behavioral dimensions ([Earley & Ang, 2003](#_ENREF_11)).

Metacognitive CQ refers to the processes through which individuals acquire and understand cultural knowledge to make sense of their intercultural experiences ([Earley, Ang, & Tan, 2006](#_ENREF_12)). It happens when individuals strategize before encountering people from different cultures; they check their own cultural assumptions during an encounter; and adjust their cultural mental maps accordingly when actual experiences differ to their expectations ([Ang, et al., 2007](#_ENREF_1)). Cognitive CQ is an individual’s understanding of how cultures are similar and different from their own cultures and from each other. It requires general knowledge structures and mental maps about cultures, including knowledge about economic and legal systems; norms for social interaction; religious beliefs; aesthetic values; and languages in different cultures ([Earley & Ang, 2003](#_ENREF_11)). Metacognitive CQ and Cognitive CQ determine individuals’ ability to develop patterns from cultural cues and intercultural encounters, hence influencing their overall level of cultural knowledge.

Motivational CQ is an individual’s interest in experiencing other cultures and interacting with people from different cultures as well as their sense of confidence in being able to function effectively in such encounters ([Ang, Van Dyne, & Koh, 2006](#_ENREF_2); [Earley & Ang, 2003](#_ENREF_11)). Motivational CQ directs and magnifies the energy applied to learning about and functioning in cross-cultural situations. Individuals with higher Motivational CQ tend to persist when they confront obstacles, setbacks, or failures. Behavioral CQ is an individual’s capability to appropriately enact a selected behavior in accordance with cognition and motivation, and exhibit appropriate verbal and non-verbal actions when interacting with people from different cultures ([Earley & Ang, 2003](#_ENREF_11)). CQ requires not only that an individual knows *how* and *what* to do but also has the energy to persevere and keep trying. An individual with high CQ is able to enact the appropriate actions with a high degree of cultural sensitivity.

Despite criticism about the multi-facets theory of intelligence (e.g., [Brody, 2003](#_ENREF_9); [Gottfredson, 2003](#_ENREF_14)), a theory based CQ concept with a focus on cultural knowledge, skill and metacognition continues to develop([Earley, et al., 2006](#_ENREF_12); [Thomas, et al., 2015](#_ENREF_36)). Evidence from previous research has not found CQ to be correlated with general intelligence (IQ), but strongly correlated with emotional intelligence (EQ) ([Moon, 2010](#_ENREF_28); [Rockstuhl, Seiler, Ang, Van Dyne, & Annen, 2011](#_ENREF_31)) and the ‘Big Five’ personality factors (e.g., [Ang, et al., 2006](#_ENREF_2); [Li, et al., 2016](#_ENREF_26)).

**1.2 Intercultural Competence**

Intercultural competence is “the ability to think and act in interculturally appropriate ways” ([M.R. Hammer, et al., 2003, p422](#_ENREF_20)). Bennett ([1986](#_ENREF_4)) posited a framework for conceptualizing dimensions of intercultural competence in his Developmental Model of Intercultural Sensitivity (DMIS). This model constitutes a progression of orientations toward cultural difference; as people become more interculturally competent, they move from ethnocentric orientations to ethnorelative orientations. This change enables them to have more sophisticated intercultural experiences. The DMIS (as illustrated in Figure 1) identifies three ethnocentric orientations, where one’s culture is experienced as central to reality (Denial, Defense, Minimization), and three ethnorelative orientations, where one’s culture is experienced in the context of other cultures (Acceptance, Adaptation, Integration). The six orientations of DMIS also form the developmental stages of intercultural competence.

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*Denial* is a stage when an individual’s own culture is experienced as the only real culture and other cultures are experienced in quite vague ways ([M.J Bennett, 1986](#_ENREF_4); [M.R. Hammer, et al., 2003](#_ENREF_20)). Hence cultural difference is either not experienced or experienced in an undifferentiated manner ([M. J. Bennett, 2004](#_ENREF_5)). Individuals at *Defense* stage experience one’s own culture as the only viable culture and other cultures are more of a ‘threat’, and often an individual’s own culture is considered to be superior to others’ culture. A variation of Defense is *Reversal*, where an adopted culture is experienced as superior to one’s own culture. Although cultural difference is likely to be experienced more ‘real’ at this Defense/Reversal stage than Denial stage, these worldviews are not sufficiently complex to experience other cultures as equal ([M.J Bennett, 1986](#_ENREF_4); [M. J. Bennett, 2004](#_ENREF_5)). Individuals at the *Minimization* stage view cultural differences subordinated to the overwhelming similarity of people’s biological nature, needs and motivations ([M.J Bennett, 1986](#_ENREF_4)). The experience of Minimization is ethnocentric in nature since it takes one’s own cultural patterns as central to an assumed universal reality ([M.R. Hammer, et al., 2003](#_ENREF_20)). It is also considered as transitional stage from ethnocentric to ethnorelative stage where issues of cultural self-awareness and ability to experience culture as a context need to be resolved ([M. J. Bennett, 2004](#_ENREF_5)).

The subsequent three stages in the DMIS model describe more ethnorelative worldviews towards cultural difference; where one’s own culture is experienced in the context of other cultures ([M.J Bennett, 1986](#_ENREF_4)). *Acceptance* is a stage where an individual accepts that one’s own culture is only one of a number of equally existent cultures, and hence accept cultural differences. As a consequence, these individuals can construct cultural-general categories that allow them to compare and contrast many cultures ([M.J Bennett, 1986](#_ENREF_4); [M. J. Bennett, 2004](#_ENREF_5)). *Adaptation* is a stage where the experience of another culture yields perception and behavior appropriate to that culture ([M.J Bennett, 1986](#_ENREF_4); [M.R. Hammer, et al., 2003](#_ENREF_20)). Individuals at this stage have empathy in their comprehension of other cultures, and are able to shift their frame of reference in relation to understanding other cultures. They could also adapt their behaviors with authenticity, not simply assimilate the dominant behaviors in other cultures ([M. J. Bennett, 2004](#_ENREF_5)). *Integration* is the stage when one’s experience of self is expanded to include the moment in and out of different cultural worldviews ([M.J Bennett, 1986](#_ENREF_4); [M. J. Bennett, 2004](#_ENREF_5)). At this stage, individuals could “construe their identities at the margins of two or more cultures and central to none” ([M.R. Hammer, et al., 2003, p425](#_ENREF_20)). The individuals who are able to do this often are members of non-dominant cultures, long-term expatriates, and so-called “global nomads” ([M. J. Bennett, 2004](#_ENREF_5)).

These two major constructs, CQ and intercultural competence, both seek to understand why certain individuals are arguably more effective in dealing with people from other cultures. Hence, they are expected to have a strong relationship with each other. Specifically, the higher three stages of DMIS, with ethnorelative orientation, will likely be positively related to CQ dimensions. Conversely, the lower three stages of DMIS, with ethnocentric orientation, will likely be negatively related to CQ dimensions. The relationship between these two constructs is the focus of the empirical investigation of this study.

# Method

## 2.1. Participants

The online survey involved two hundred and forty-six senior Police Officers in Ireland. The reason to focus on this group is that they need to develop cross-cultural competences to be able to provide a more effective policing service to a highly diverse, multicultural society in the Irish Republic. The average age of the participants was 35.7 years. Males accounted for 76% of the sample. Thirty-eight percent of the sample held either a Bachelors or Postgraduate degree. The nationalities represented included Irish, Scottish and British nationals, from various functions and ranks of the Irish Police Force. Twenty-four percent of them had overseas work experience.

* 1. **Measurements**
     1. ***Cultural intelligence***

The 20-item inventory developed by Ang et al. ([2007](#_ENREF_1)) rated on a 7-point scale was adopted to measure CQ. The inventory contains four items for measuring Metacognitive CQ; six items for Cognitive CQ; five items for Motivational CQ; and five items for Behavioral CQ. Internal consistency (α) values for the four facets of CQ are 0.702, 0.778, 0.846, and 0.755 respectively. Confirmatory factor analysis of the CQ construct showed a good fit (CMIN/DF = 2.19; CFI = .90; RMSEA = .07). The study calculated scores for four facets of CQ by taking sums of respective items.

* + 1. ***Intercultural Competence***

The Intercultural Development Inventory ([IDI, M. R. Hammer & Bennett, 2002](#_ENREF_19)) was adopted to measure intercultural competence. IDI was constructed to measure the orientations toward cultural differences defined in the DMIS. The validity and reliability of IDI is confirmed ([M. R. Hammer, 2011](#_ENREF_17); [M.R. Hammer, et al., 2003](#_ENREF_20); [Paige, Jacobs-Cassuto, Yershova, & DeJaeghere, 2003](#_ENREF_29)). IDI includes 50 items scored on a 5-point scale. This study adopted five dimensions model measuring DMIS each dimension was calculated by taking sums of respective items. Two stages - Denial and Defense are measured by 13 items and calculated as one-dimension score DD. Reversal (R) is measured by 9 items; and Minimization (M) by 9 items. The Acceptance and Adaptation stages are measured by 14 items and calculated as a one-dimension score AA. Integration is measured by 5 items, but it is labelled as EM, which represents Encapsulated Marginality. The EM scale was originally designed to measure the Integration stage in the DMIS model ([M.R. Hammer, et al., 2003](#_ENREF_20)), but this stage was later relabeled as the *Cultural Disengagement* stage. This is defined as the degree to which an individual or group is experiencing a sense of alienation from their own cultural community ([M. R. Hammer, 2011](#_ENREF_17)). Confirmatory factor analysis of the DMIS model in this study showed an adequate fit (CMIN/DF = 1.55; CFI = .82; RMSEA = .047), comparable to the findings detailed in [M. R. Hammer (2011)](#_ENREF_17). Internal consistency values were *α =* .86 for DD, *α =* .802 for R, *α =* .762for M*, α =* .816 for AA, and *α =* .702 for EM.

# Results

Means, standard deviations, and correlations are reported in Table 1. Four facets of CQ were all positively correlated as expected. The correlations among IDI dimensions were largely consistent with correlation findings in [M. R. Hammer (2011)](#_ENREF_17). However, it is worth mentioning that EM was positively correlated to DD and R, but not to AA.

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Canonical correlation analysis was adopted for this study to examine the relationship between facets of CQ and stages of intercultural competence ([Hair, Anderson, Tatham, & Black, 1998](#_ENREF_16)). Data were analyzed by IBM SPSS Statistics 24 package. 246 cases were accepted for canonical analysis; four canonical functions were generated. Multivariate tests including Pillais, Hotellings and Wilks were significant (p < .0001). In the correlation analysis, canonical correlation (Rc) is a measure of the strength of the overall relationship between the two sets of variables. Rc for this study was 0.712, which demonstrates a strong relationship between CQ and intercultural competence. The eigenvalue (total redundancy), R2c, is the squared canonical correlation, and provides an estimate of the amount of shared variance between the two sets of variables. It is similar to the coefficient of determination (R2) in a multiple regression analysis. For this study, R2c was .507 indicating that the shared variance between CQ and intercultural competence was over 50%. Overall, the results suggest a strong relationship between the two constructs.

Within canonical correlation analysis, SPSS also regressed each calculated dimension of IDI on the four facets of CQ as shown in Table 2. The Variance Inflation Factor (VIF) values of the variables for all regression models were between 1.41 and 2.16, indicating multicollinearity was not a concern. DD was negatively related to Metacognitive CQ (*r* =-0.419, *p*<.05) and Motivational CQ (*r* =-0.392, *p*<.001); R was negatively related to Motivational CQ (*r* =-0.255, *p*<.05). AA was positively related to Cognitive CQ (*r* =0.273, *p*<.01) and Behavioral CQ (*r* =0.483, *p*<.001). EM was positively related to Behavioral CQ (*r* =0.096, *p*<.05). The results demonstrate that the lower stages of IDI are more negatively related to metacognitive and motivational facets of CQ, and the higher stages of IDI are more positively related to cognitive and behavioral facets of CQ. Three surprising relationships were also found: M was positively related to Motivational CQ (*r* =0.259, *p*<.05) and Behavioral CQ (*r* =0.203, *p*<.05); EM was negatively related to Metacognitive CQ (*r* =-0.25, *p*<.001); and DD was positively related to Cognitive CQ (*r* =0.222, *p*<.05).

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Overall, the effect sizes (Pearson’s *r*)reported in this study were mostly above 0.2. These effect sizes are considered as either medium (*r* = 0.2), large (*r* = 0.3) or very large (*r* = 0.4 or above), hence the results have important explanatory and practical use in either the short or long term ([Funder & Ozer, 2019](#_ENREF_13)). The only exception was the effect size of the relationship between EM and Behavioral CQ (*r* =0.096) which is considered an effect that is small at the level of single events but potentially more ultimately consequential ([Funder & Ozer, 2019](#_ENREF_13)). Furthermore, these effect sizes were examined considering errors due to statistical artifacts following recommendations by [Hunter and Schmidt (2015)](#_ENREF_21). Since the reliabilities of the two scales used in this study ranged from 0.702 to 0.846 for CQ; and from 0.702 to 0.86 for IDI, the effect of measurement error to reduce the correlations ranged from 15% to 30%. The sample size was 246, the effect of the sampling error was only between 1% and 5%. The effect sizes after considering both errors still remained at similar levels. Hence, the results obtained from this study could confidently offer both explanatory and practical insights. The only relationship with small effect size, which is between EM and Behavioral CQ, will be discussed later in this article.

Lastly, in order to examine the influence of overseas work experience on the results, asubgroup analysis was conducted on the 59 individuals in the sample with overseas work experience and the other 187 individuals without. The results showed the overall relationship between CQ and intercultural competence was strong for both subgroups. Rc was 0.708 for the group without, and 0.68 for the group with overseas work experience. All multivariate tests remained significant (p<0.001). The results of the regression models for both subgroups remained largely consistent with the main results. The differences were that R and M scales were not related to any CQ facets in subgroup with overseas experience, yet these differences did not contradict the main results. The results based on the whole sample are discussed in the next section.

# Discussion

This study examines the relationship between two widely studied CCC constructs, CQ and intercultural competence. The results indicate that the two constructs are closely related. Moreover, each stage of the DMIS is explained by one or more facets of CQ. As discussed below, both the expected and unexpected correlations shared by the two constructs provide unique opportunities for a deeper understanding of the conceptualization and measurement of CCC.

***4.1. Conceptualization of CCC***

First, the key finding that the lower stages of IDI are more negatively related to metacognitive and motivational facets of CQ, whilst the higher stages of IDI are more positively related to cognitive and behavioral facets of CQ, does shed some light on our understanding of the developmental nature of components of CCC. Individuals at lower stages of IDI including the Denial, Defense and Reversal stages do not tend to develop higher levels of Metacognitive CQ and Motivational CQ due to the view of their own cultures as central to reality. In comparison, individuals at higher stages of IDI including the Acceptance and Adaptation stages, could view their own cultures in the context of other cultures and so they are more likely to develop higher levels of Cognitive CQ and Behavioral CQ. Given that individuals move up the DMIS stages unidirectionally ([M. J. Bennett, 2004](#_ENREF_5)), the results also indicate that individuals first need to get their motivational issues resolved and develop learning capacity (metacognitive CQ), and then they are able to acquire and learn more cultural knowledge and adapt their behaviors accordingly to cope with cultural difference. Taken together these findings suggest the answers to the questions raised in this study: (1) components of CCC do not develop in consistent manner; (2) metacognitive and affective components of CCC need to be developed at first in order for the cognitive and behavioral components of CCC to be developed subsequently.

Second, in answering the third question raised in this study, Metacognitive CQ may develop in a nonlinear manner. The fact that Metacognitive CQ is negatively related to not only the Denial and Defense stages as expected, but also, unexpectedly, the Integration/Cultural Disengagement stage. This indicates that metacognitive CQ may not develop in a linear manner. Individuals at the Integration/ Cultural Disengagement stage could move in and out freely, at the margins of cultures including their own to the extent that they feel alienated from their own culture ([M. R. Hammer, 2011](#_ENREF_17)). Due to this, such individuals may not always consciously check their own cultural assumptions and adjust their mental frameworks accordingly (Metacognitive CQ). This result, therefore, raises the important question as to whether culturally competent individuals really do conscientiously engage in metacognitive learning and deliberately monitor their cultural knowledge learning processes? Or are they unconsciously competent at learning about other cultures?

[D.P.S. Bhawuk (1998)](#_ENREF_7)’s model of intercultural expertise development helps to answer this question. The model describes four progressive levels of CCC: unconscious incompetence; conscience incompetence; conscious competence; and unconscious competence ([D. P. S. Bhawuk, 2009](#_ENREF_8)). At the unconscious incompetence level, an individual tends to misinterpret others behavior without even being aware of it. At the conscious incompetence level, an individual is aware of his or her failure to behave correctly but is unable to make correct attributions since s/he lacks the correct knowledge. At the conscious competence level, an individual understands why something works (or not). At the unconscious competence level, an individual has so much practice that a behavior becomes part of his/her habit structure and so s/he does not need to make an effort to behave in a culturally ‘appropriate’ way ([D.P.S. Bhawuk, 1998](#_ENREF_7); [D. P. S. Bhawuk, 2009](#_ENREF_8)). Individuals at the Integration/ Cultural Disengagement stage are most likely at the unconscious competence level of CCC in that taking perspectives of others or shifting their frame of reference becomes an unconscious and automatic process. Hence, their Metacognitive CQ tends to become lower. This phenomenon is likely to be observed in long term expatriates and in children who grow up in multicultural families ([M. J. Bennett, 2004](#_ENREF_5)).

***4.2 Measurement of CCC***

The convergent evidence of AA and Cognitive CQ and Behavioral CQ provide some confidence in the way cognitive and behavioral components are measured in CCC. There are elements that IDI could assess but CQ could not. Notably the Reversal, Denial, Defense, Minimization and Cultural Disengagement, which is seemingly the strength of IDI. However, the results also suggest the need for some caution in assessing the validity of some dimensions of IDI. The items that measure the Minimization stage appear to be confusing for some individuals so they marked their response as neutral ([Paige, et al., 2003](#_ENREF_29)). This may also be the reason that Minimization was positively related to Motivational and behavioral CQ, albeit surprisingly, in this study. In the future, the measurement of Minimization needs to be improved so it is easier for respondents to discriminate between answers.

The EM scale is also considered as an incomplete measure of the Integration stage of DMIS ([Groves & Feyerherm, 2011](#_ENREF_15)). The findings in this study demonstrate that the Integration/ Cultural Disengagement stage is positively correlated to the ethnocentric worldview of Denial and Defense, and not the enthnorelative worldview. This is consistent with the findings of Hammer ([2011](#_ENREF_17)). If the EM scale measures Integration more completely, it would be expected to be positively related to AA scale. Additionally, the effect size for the relationship between EM and Behavioral CQ (*r* =0.096, *p*<.05) was small, indicating the relationship needs to be tested further in future research to understand the strength of this relationship in the longer run ([Funder & Ozer, 2019](#_ENREF_13)). Such small effect size may also be related to the validity of EM measurement since it was expected individuals at EM stage had higher levels of Behavioral CQ. Therefore, future IDI might continue improving the measurement of the Integration stage.

Despite CQ measurement, which is considered to have high validity and reliability ([Matsumoto & Hwang, 2013](#_ENREF_27)), there is still some room for improvement. Firstly, if the Cognitive CQ scale includes more objective measurement of more specific and tacit cultural knowledge instead of the self-perception of general knowledge about other cultures as in its current form, Cognitive CQ may not be positively related to DD. This is because individuals at the Denial and Defense stages often consider their own cultures as central to reality and do not tend to understand other cultures. Therefore, the measurement of Cognitive CQ could be further improved in the future. Recently, a new CQ knowledge instrument has been developed using a quasi-observational approach ([Taras, 2019](#_ENREF_35)). Moreover, the validity of the self-report measure of Metacognitive CQ was questioned by Klafehn, et al. ([2013](#_ENREF_23)). They found that Metacognitive CQ was neither related to cognitive ability nor self-efficiency, both of which are shown to be important factors related to metacognition. This might offer an alternative explanation of the negative correlation between Metacognitive CQ and EM as well. Overall, the measurements of Metacognitive CQ and Cognitive CQ need to be improved further.

## *4.3. Limitations and Future Research*

The study is limited by the single sample taken from staff of the Irish Police Force. Future studies could replicate the current study using other samples to further understand CCC. The findings of this study are also limited by the single source cross-sectional data that was collected through self-report instruments. Current CQ and IDI measurements are self-report instruments since individuals can more accurately reflect on their own behaviors than others ([Shrauger & Osberg, 1981](#_ENREF_32)). Yet other assessment methods could be adopted in future studies. For example, a written scenarios based Instructor Cultural Competence Questionnaire (ICCQ) has been developed and scored along DMIS ([Roberson, Kulik, & Pepper, 2002](#_ENREF_30)). Other researchers have also developed a behavioral measurement of metacognition ([A. K. y. Leung, et al., 2013](#_ENREF_24)), and performance-based methods such as think aloud protocol ([Sieck, Smith, & Rasmussen, 2013](#_ENREF_33)). Furthermore, a longitudinal study or experimental design are more suitable to understanding the developmental nature of CCC.

**5. Conclusion**

Having integrated the two dominant paradigms in CCC research, this study concludes that CQ and intercultural competence are highly correlated. The results provide answers to the research questions raised, which are the following. First, the components of CCC do not appear to be developed in a cohesive and consistent manner. Second, the metacognitive and affective components of CCC need to be developed first in order for the cognitive and behavioral components of CCC to be developed subsequently. Third, the metacognitive component of CCC may develop in a nonlinear manner. Given that research in CCC is still relatively nascent ([Bartel-Radic & Giannelloni, 2017](#_ENREF_3)), the results of this study advance our understanding of the developmental nature of CCC.

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**Figure 1. The Developmental Model of Intercultural Sensitivity (DMIS, Bennett, 2014)**

Denial Defence/Reversal Minimization Acceptance Adaptation Integration

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