Cultural Competence in South African Teachers

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Cultural Competence in South African Teachers

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Abstract

The current study investigated cultural competence in South African teachers by first examining the dimensions and sub-dimensions associated with cultural intelligence in teachers, and secondly, assessing the factors that impact cultural competence. The study also assessed the feasibility of using the adapted version of the E-CQS (Da Silva, 2015) as an accurate measure of cultural intelligence in the South African population. Given the limited amount of research in this area, the insights provided by this study help to bridge this gap in knowledge and further the goal of cultural inclusivity and transformation in education. The study hypothesized that i) working within a culturally diverse classroom setting would increase overall cultural intelligence, more specifically both cognitive and metacognitive cultural intelligence, ii) interaction with diverse students, teaching experience, international travel, language ability and training in cultural sensitivity would each contribute towards increased cultural competence, iii) increased teaching experience would be correlated with higher cultural competence, whilst controlling for international travel, and lastly iv) similar findings would be found between both the CQS (Ang et al., 2007) and the adapted version of the E-CQS developed for use in the South African population (Da Silva, 2015). Participants included teachers recruited from various schools within South Africa. Data was collected using self-report questionnaires, administered directly to each teacher using a Google Form format. Teachers were found to have an above average score of cultural intelligence, with the highest dimensions being that of motivational and metacognitive cultural intelligence and the lowest being cognitive

cultural intelligence. Training in cultural sensitivity, cultural competence and/or culturally relevant teaching strategies were identified as having a significant effect on overall cultural intelligence, more specifically cognitive and behavioural cultural intelligence. Further, teachers who had more teaching experience were also more likely to have higher CQ. Lastly, results of the study validated the use of the adapted version of the E-CQS for the South African population.

Dedication

To my father, Graham Howarth, thank you for being an absolute inspiration in how you view the world and your great sense of humanity. To my mother, Lynn Howarth, thank you for teaching me the meaning of strength and to find the joy and kindness in each moment. Lastly, to my sister Michelle - 'I carry your heart, I carry it in my heart' (E.E. Cummings) – I completely admire you. To each of you – *I am because you are*.

Acknowledgments

I would like to express my deepest thanks to Dr. Dante Spetter – thank you for our many chats and for your absolute support and encouragement throughout the entire process. I would also like to thank Ange Maseko for all her wisdom and Michael James Halvorsen for keeping me alive and smiling. Lastly, I would like to thank the rest of my friends and family who continually believed in me and supported me through it all.

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Chapter I

Introduction

Earley and Ang (2003) were the first to conceptualize cultural competence as cultural intelligence (CQ), an individual's ability to function and manage effectively in culturally diverse settings. Thomas et al. (2008) contributed toward the literature defining CQ as a system of interacting knowledge, linked by cultural metacognition, which allows people to adapt to, select, and shape the cultural aspects of their environment.

CQ is acknowledged by academic scholars as a measurable construct with measurable effects on both individual and organisational performance outcomes. Thus, as multiculturalism grows, it has become increasingly indispensable in the professional and educational sectors (Ng et al., 2012). This raises the question as to what encompasses CQ, as well as what predicts and facilitates more successful cross-cultural interactions (Fang et al., 2018).

Dimensions of Cultural Intelligence

Applying Sternberg's (1986) multiple-intelligence framework, Earley and Ang (2003) posit four dimensions of CQ that interact with each other to produce intercultural effectiveness: metacognition (CQ strategy), cognition (CQ knowledge), motivation (CQ drive), and behaviour (CQ action). As a type of competence, CQ is a malleable construct and each dimension can be developed over time. In 2004. Ang et al developed the Cultural Intelligence Questionnaire (CQS), a 20-item measure that assesses each of the sub-dimensions of CQ.

Metacognitive CQ refers to an individual's level of conscious cultural awareness during cross-cultural interactions (Ang & Van Dyne, 2008). Those with metacognitive CQ are argued to be consciously aware of others' cultural preferences before and during interactions; they also question cultural assumptions and adjust their mental models during and after interactions (Brislin, Worthley, & MacNab, 2006; Triandis, 2006).

Cognitive CQ refers to a knowledge of practices, norms, and conventions in different cultures acquired from educational and personal experience (Ang and Van Dyne, 2008). Those with cognitive CQ understand differences and similarities across cultures (Brislin et al., 2006), such as knowledge of basic frameworks of cultural values (Hofstede, 2001) and knowledge of legal, economic, sociolinguistic, and interpersonal systems of different cultures and subcultures (Triandis, 1994).

Motivational CQ is the capability of an individual to direct attention and energy towards learning about and functioning in situations characterized by cultural differences (Ang & Van Dyne, 2008). Individuals with motivational CQ will thus direct energy and attention toward cross-cultural situations based on confidence in their cross-cultural effectiveness (Bandura, 2002) as well as an intrinsic interest (Deci & Ryan, 1985).

Behavioural CQ reflects the capability to exhibit appropriate verbal and non-verbal actions when interacting with individuals from different cultures (Ang & Van Dyne, 2008). Those with behavioural CQ are argued to understand that it is not enough to have a mental capability for cultural understanding and motivation but this must be complemented by the action of exhibiting this understanding. This may be done through the use of appropriate words, tone, and facial expressions (Ng, Van Dyne & Ang, 2012).

Ward et al. (2009) sought to confirm the four-factor structure of CQ with a sample of international students actively engaged in the process of cross-cultural adaptation in a New Zealand University. In a three part study, the researchers investigated the four-factor structure of CQ, CQ in relation to personality and general cognitive ability, and lastly, the association between CQ and emotional intelligence (EQ).

Participants completed the 20-item CQ measure by Ang et al (2004) and results showed acceptable fit, supporting the four-dimensional structure of the construct ($\chi^2_{(164)} =$ 488.66, TLI= .93, CFI = .94, RMSEA = .076, SRMR = .070.). Further, CQ scores showed convergent validity when correlated with the Multicultural Personality Questionnaire (MPQ) (r =.63; p < .001; shared variance = 40%) and discriminant validity against the Raven's Advanced Progressive Matrices (RAPM), a culturally neutral indicator of general intelligence y (r = .04 for total scores and r's between .02 and .11 across subscales).

Whilst general cognitive ability was empirically differentiated from CQ, contrasting results have been found with regards to the construct validity of CQ and EQ scores. Ward et al. (2009) found correlations ranging from .48 to .82 between CQ subscales and EQ (Emotional Intelligence Measure; Schutte et al., 1998). In addition, the total CQ score correlated at .82 with EQ, raising questions as to whether CQ is sufficiently distinct from EQ.

In contrast, Moon (2010) demonstrated that CQ and EQ are distinct, yet related constructs. The researchers used confirmatory factor analyses on data from 381 students in Korea (all Korean citizens) to examine the relationship between the four clusters of EQ (Emotional Competence Inventory - University edition; ECI-U) and the four-factor model

of CQ (Ang et al., 2004). Confirmatory factor analysis demonstrated acceptable fit of the eight-factor model ($\chi^2_{(751\ df)}$ = 1442:75, CFI = .905, GFI = .843, RMSEA = .049). Results support discriminant validity of the four factor model of CQ in relation to the EQ construct.

In examining the dimensions of CQ, Klafehn et al. (2013) questioned the validity of the self-reported metacognitive CQ subscale developed by Earley and Ang (2003). The study investigated whether self-report is appropriate for assessing metacognitive CQ, as well as the extent to which it is conceptually distinct from the other CQS subscales. A paired sample of 206 undergraduate students and their 206 nominated peers (412 participant's total) provided self- and peer-reports of CQ using the CQS and a modified version of the CQS for the peer group.

Correlations between metacognitive CQ and the other three dimensions of CQ raised concern (cognitive CQ: ϕ = .86, motivational CQ: ϕ = .86 and behavioural CQ: ϕ = .83). Although passing the formal test of discriminant validity (ϕ may not equal 1, Widaman 1985), Klafehn et al (2013) argue that the size of these correlations call into question the distinctiveness of metacognitive CQ as a stand-alone dimension of CQ. Further, analyses using structural equation modelling (SEM) revealed that the peers were more accurate in rating the participants' CQ than the participants themselves. This raises the question as to whether metacognition is a construct that can be self-reported effectively.

Sub-Dimensions of Cultural Intelligence

In response to gaps in the literature, Van Dyne et al (2012) developed a more comprehensive eleven sub-dimensional model of CQ. Each of the four original dimensions were further subdivided as follows: Cognitive CQ into culture-general knowledge and context-specific knowledge; metacognitive CQ into planning, checking, and awareness; motivational CQ into intrinsic interest, extrinsic interest, and self-efficacy to adjust; and lastly behavioural CQ into verbal behaviour, non-verbal behaviour and speech acts. The 37-item Expanded-CQS (E-CQS) was supported via validation studies using data from 286 participants from more than 30 countries.

Culture general knowledge refers to knowledge of the universal elements that constitute a cultural environment, allowing an individual to discern similarities and differences between cultures. In contrast, context-specific knowledge focuses on a more insider understanding, such as procedural knowledge of a specific culture. Planning, as the first sub-dimension of metacognitive CQ, refers to the tendency to strategize before a culturally diverse encounter whereas awareness focuses on the degree to which an individual has real-time consciousness of how culture may impact a situation. Further, checking talks to reviewing ones assumptions and adjusting them accordingly after an interaction differs from ones preconceived expectations (Van Dyne et al., 2012).

Intrinsic interest, a sub-dimension of motivational CQ, is defined as valuing multi-cultural experiences because it is intrinsically satisfying whereas extrinsic interest focuses more on the tangible benefits that may be obtained through the interaction. Self-efficacy to adjust, the last sub-dimension of motivational CQ, focuses on the ability to deal with the stress associated with trying to adjust in a cross-cultural experience. The

first sub-dimension of behaviour, verbal behaviour, is conceptualised as the ability to be flexible in adjusting one's verbal communication tactics to suit the practices of a different culture. In contrast, non-verbal behaviour refers to flexibility with regards to body language, gestures and facial expression rather than words. Lastly, speech acts is defined as flexibility in communicating specific types of messages based on local standards, such as apologies, disagreements, gratitude, requests and how to say 'no' (Van Dyne et al., 2012).

As the current study will make use of a South African sample, additional validation studies of the E-CQS in the multicultural South African context was pursued. In 2015, Da Silva investigated the psychometric properties of the E-CQS in a sample of 601 South African employees across various organizations. The study examined internal consistency for each of the 11 sub-dimensions of the E-CQS and compared results to the four dimensional model of the CQS. Cronbach's alpha values ranged from 0.609 to 0.887 for the E-CQS, and 0.838 to 0.921 for the CQS. According to Peterson (1994), Cronbach's alpha should ideally fall above 0.7, thus 6 of the 11 factors for the E-CQS lacked internal consistency whilst the CQS remained internally consistent across all 4 dimensions (ϕ: motivational CQ = 0.838, metacognitive CQ = 0.864, cognitive CQ = 0.921, behavioural CQ = 0.893). These results suggest that the four factor model results in more stable factors than the expanded version.

More specifically, results indicated the following sub-dimensions were internally consistent within the SA sample: Culture-general knowledge (0.812), context-specific knowledge (0.887), planning (0.751), verbal behaviour (0.746) and speech acts (0.706). Confirmatory and exploratory factor analysis revealed that the E-CQS has limited scope

as an instrument to measure CQ within the South African context within its current form. Results suggest that the conceptualisation of CQ as an eleven factor model may be premature within the South African context due to over specification and over complication of the construct. The author suggests that a content validity assessment of the old and proposed new items may be a next step in order to evaluate how the items are perceived and which may be relevant within the South African context.

The present study will employ both the CQS and the E-CQS to collect the maximum amount of information, given the concerns about validity of the E-CQS. Prior to testing the study hypotheses, each sub-dimension will be checked to insure it has adequate internal consistency in this sample and any dimension that does not will not be considered in any further analyses.

Outcomes of Increased Cultural Competence

Cultural competence has been associated with a myriad of positive outcomes and are discussed in terms of two broad categories, namely: (1) Psychological outcomes and (2) Performance Outcomes.

Psychological Outcomes

Increased cultural competence contributes toward successful psychological adjustment, or the general well-being of an individual, in a multi-cultural setting (Ng et al., 2012). Each of the four dimensions of CQ are critical individual attributes that play varying roles in cross-cultural adjustment. For instance, Templer, Tay, and Chandrasekar (2006) sought to understand how motivational CQ in particular impacts this relationship. In a sample of global professionals in Singapore, data on motivational CQ was collected

using the CQS (Ang et al., 2007) and correlated with questionnaires addressing realistic job review, realistic living conditions preview, and Black and Stephen's (1989) multidimensional adjustment scale.

Results indicated that motivational CQ was significantly correlated with all three cross-cultural adjustment factors: work adjustment ($r = .35$, $p < .001$), general adjustment ($r = .32$, $p < .001$), and interaction adjustment ($r = .32$, $p < .001$), after controlling for accuracy of their expectations about the job and living conditions abroad. Further, motivational CQ was significantly related to realistic living conditions preview ($r = .25$, $p < .01$) and previous international assignment ($r = .17$, $p < .05$). Any correlation of less than 0.4 is suggestive of a weak relationship, however similar results were found in a study conducted by Peng et al (2014). In a sample of college students completing a 5-week summer study abroad program, motivational CQ was found to be significant in both psychological well-being ($r = .32$, $p < .01$) and peer-rated suitability for overseas work ($r = .26$, $p < .01$). This may simply mean that while the desire to interact with people from other cultures is important in being successful in that interaction, it may not be as important in isolation as it is in combination with each of the other three dimensions of CQ.

More recently, Shu et al. (2017) found that all four dimensions of CQ in its entirety were positively related to cross-cultural adjustment. A sample of 355 international students attending metropolitan universities in the Midwestern U.S completed the CQS (Ang et al., 2007), the 60-item HEXACO Personality Inventory (HEXACO-60; Ashton & Lee, 2009), and a 14-item adjustment scale adapted from a study conducted by Black and Stephens (1989). The study controlled for students' length

of stay (in months) in the U.S. and past experience living abroad in all analyses. Findings indicated that both the HEXACO personality traits and CQ are associated with cross-cultural adjustment. Further, the dimensions of CQ predicted 11% of the variance in general adjustment over and above the HEXACO personality traits ($R2 = 0.11$, $F (4, 342) = 11.76$, $p < .001$).

Similarly Presbitero (2017) in a global sample of religious expatriates, found that overall CQ was positively related to two types of adaptation, psychological and sociocultural. Of particular interest in this study was the use of a CQ measure that had been adapted from Thomas et al (2015) versus the commonly used CQS developed by Ang et al. (2004), with similar findings achieved. Ten items were used, including: "I know the ways in which cultures around the world are different," and "I can give examples of cultural differences from my personal experience, reading and so on," ($\phi = 0.83$).

Other measures included a psychological adaptation scale that was adapted from research conducted by Diener et al. (1985) and Rosenberg (1965) ($\phi = 0.76$), a sociocultural adaptation measure adapted from a scale developed by Ward and Kennedy (1994) ($\phi = 0.80$), and intrinsic motivation was measured using a scale adapted from Haines et al. (2008) ($\phi = 0.79$). Results indicated that CQ is positively related to both psychological ($\beta = 0.25$, $p < .05$) and sociocultural ($\beta = 0.22$, $p < .05$) adaptation. Furthermore, intrinsic motivation moderates the relationship between both psychological adaptation ($\beta = 0.33$, $p < 0.05$) and sociocultural adaptation ($\beta = 0.30$, $p < 0.05$) and CQ. This particular finding may offer support for my previous statement that Earley and

Ang's (2003) motivational CQ may play more of a moderating role in the context of the four-factor model.

Apart from adjustment, CQ has also been positively associated with increased psychological well-being (Chen & Chen, 2015). Tzu-Ping and Wei-Wen (2017) investigated the relationship between CQ and psychological well-being in a sample of international students in Taiwan. The researchers noted that whilst people pay more attention to unfamiliar and exotic things when being abroad, their consciousness on the present moment plays an important role for their well-being. Therefore, mindfulness was examined as a moderator variable. Three measures were administered online including Ryff's 18-item scale (Ryff, 1989), CQS (Ang et al., 2007) and Mindful Attention Awareness Scale (Brown & Ryan, 2003). Results indicated that metacognitive CQ (R^2 = 0.231) and motivational CQ (R^2 = 0.142) have a significant relationship with psychological well-being. More specifically, a student with higher metacognitive CQ is able to use cultural understanding to strategize his or her action in different cultural contexts. A student with higher motivational CQ has more interest in adjusting himself or herself into different cultural interactions.

Psychological well-being is correlated with outcomes such as increased academic performance, quality of education, intrinsic motivation, intrapersonal and interpersonal success, emotional intelligence, increased task orientated coping strategies, life satisfaction, self-efficacy, and optimism (Field, 2001; Isen, 2003; Khramtsova et al., 2007; Lyubomirsky, 2001; Salami, 2010). Tzu-Ping and Wei-Wen (2017) suggested future research focus on how to develop CQ so as to promote psychological well-being and subsequent performance outcomes.

Performance Outcomes

There are many important findings relating cultural competence to both individual- and group-level performance. In the organizational context, CQ has consistently been linked to leadership capabilities (Lisak & Erez, 2015) and job performance (Chen, 2010; Peng et al., 2015). For the purposes of this study, focus will be placed on leadership outcomes associated with increased cultural competence.

Leaders working in cross-cultural contexts require certain abilities that enable them to manage the expectations of culturally diverse others and minimize exclusionary reactions that may occur (Rockstuhl et al., 2011). In a sample of 126 military leaders and their peers studying at the Swiss Military Academy at ETH Zurich, Rockstuhl et al. (2011) investigated whether CQ is a critical leadership competency for those with cross-border responsibilities. CQ has relevance to leadership in military settings because armed forces throughout the world are increasingly involved in international assignments (Ang & Ng, 2007).

Participants were asked to rate one another with regards to leadership effectiveness, using an author developed leadership effectiveness scale. Researchers assessed the degree of agreement among peers using inter-rater reliability. Inter-rater agreement (r =.71–1.00) supported aggregation of peer ratings for both general (ϕ =.91) and cross-border leadership effectiveness (ϕ =.93). CQ was then assessed using the CQS (Ang et al., 2007) and EQ was assessed with 19 items that had been developed based on prior research. Further measures included the SHL Critical Reasoning Battery (1996) to measure general mental ability, and lastly the mini-IPIP scale to assess the Big Five factors of personality.

Results indicated that CQ was positively related to cross-border leadership effectiveness ($\beta = .24$, $p < .05$) but not to general leadership effectiveness ($\beta = -.11$), after controlling for age, leadership experience, international experience, Big-Five personality, IQ, and EQ. This demonstrates the unique importance of CQ to cross-cultural leadership effectiveness. Further, when comparing all data CQ was found to be the second strongest predictor of cross-border leadership effectiveness and may thus be considered a critical global leader competency above both EQ and IQ (IQ: $\beta = .18$, EQ: $\beta = -.07$, previous international experience: $\beta = .35$, previous leadership experience: $\beta = -.11$).

In general most studies focusing on the correlation between CQ and leadership assess participants already in leadership positions. In contrast to this approach, Lisak and Erez (2015) looked at CQ as a predictor of emergent leaders. The study sampled a group of MBA students who worked as virtual multicultural teams on a four-week joint project. Participants who slowly emerged as leaders within the team were assessed on three global competencies, namely CQ, global identity and lastly, openness to cultural diversity. Leadership emergence was assessed based on who the team selected to lead the team to project completion. Results indicated that individuals with higher overall CQ, openness to diversity, and global identity were more likely to perform better and emerge as leaders than were other team members ($r = 0.50$ to 0.56, $p < 0.01$).

Thus, CQ may not only be important in cross-cultural leadership effectiveness but also in the development of leadership roles. This may be due to individuals higher in CQ having greater interpersonal success. It also raises the question as to whether CQ is different based on the type of leader an individual is or the leadership style they adopt.

This can be seen in a study conducted by Soloman and Steyn (2017). In order to operate successfully within a team, leaders need to adopt and display the leadership styles that best match the cultural expectations of their staff members. Moreover, whilst overall CQ is important in considering the best type of leadership style, the different dimensions of CQ have varying impacts. For instance, both empowering and directive leadership styles have been correlated with each of the four dimensions of CQ (Empowering: r's ranging from 0.45 to 0.64, $p < .05$; Directive: r's ranging from 0.32 to 0.39, $p < .05$) (Solomon & Steyn, 2017). However, when considering interventions, even though each of the four dimensions work together to predict outcomes, the most important dimensions in empowering leadership styles is metacognitive and motivational CQ. On the other hand, in the context of directive leadership, emphasis should be placed on cognitive, metacognitive and motivational CQ.

Empowering leadership aims to increase the capacity of subordinates to lead themselves (Mohamed, 2016) and may involve behaviours that promote power equality with staff members (Amundsen & Martinsen, 2014). On the other hand, directive leadership is based on positional power (Lorinkova, Pearsall & Sims, 2013) and involves behaviours that provide subordinates with direction concerning the objectives that need to be achieved, the manner in which they can be achieved and the required output (Martin, Liao & Campbell, 2013). Although the composite CQ was correlated with both empowering and directive leadership styles, the strength of the relationship is larger with empowering leadership style. Thus placing varying importance on the role of CQ in different leadership styles.

Having discussed the positive outcomes of CQ, what becomes of interest is whether CQ may ever have a negative impact on outcome variables. Literature in view of this is scant, however increased cognitive CQ has been shown to have an inverted U-shaped relationship with creativity ($\beta = -0.51$, $p < 0.01$) (Chua & Ng, 2017). In a sample final year business students in Singapore, CQ was assessed using the CQS (Ang et al., 2007) and creativity was measured using five items that had been adopted from Zhou and George's (2001) study. Sample items included 'is a good source of creative ideas' and 'often has a fresh approach to problems'. Participants completed these items as part of peer feedback for their teammates. These findings demonstrate that although having cultural knowledge helps one become more creative in a multicultural global setting, too much cultural knowledge can be detrimental to creativity. Further research into potential adverse effects may be warranted.

Antecedents of Cultural Competence

In an effort to further develop cultural competence it is essential to understand what we know about who has more or less of it. Research has indicated that the predictors of CQ fall into two main categories, namely: (1) Intercultural experiences and (2) Individual traits.

Intercultural Experiences

According to Situated learning theory, international experiences, no matter the duration, provide the social context and authentic activities which teach individuals management of cross-cultural differences. Thus essentially, international travel should contribute toward the development of CQ. This relationship was seen in a sample of 135

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U.S. university students that underwent a short-term international experience, ranging from 7 to 12 days. The students were broken up into test and control groups and were placed within a structured study abroad service program. Participants were administered the CQS (Ang et al., 2007) both before and after the international experience. The pre-test and post-test analysis indicates that for the test group each dimension of CQ significantly ($p < .000$) increased after the study abroad experience (Metacognitive CQ: 5.26 to 5.77; Cognitive CQ: 3.88 to 4.69; Motivation CQ: 5.72 to 6.09; and Behavioural CQ: 5.04 to 5.70). At the same time, there was no significant difference in the control group (Engle & Crowne, 2014).

Noting the importance of international or multicultural experience, Moon, Choi and Jung (2013) investigated whether a sample of Korean expatriates could develop their CQ by working in international organisations within their home country prior to expatriation. Participants were administered the CQS (Ang et al., 2007), as well as a list of questions including "How much work experience did you have in an overseas department prior to expatriation?" and "How many local employees from the host country do you work with?" Results showed that working in an overseas department correlated with cognitive CQ ($\beta = 0.18$, $p < 0.01$), thus, providing employees with the opportunity to gain knowledge regarding practices, norms and conventions of other cultures. Further, the potential expatriates that had worked with foreign nationals prior to expatriation showed higher metacognitive CQ ($\beta = 0.16$, $p < 0.05$).

Similarly, Schwarzenthal et al. (2017) investigated the development of cultural competence in multi-ethnic contexts using a sample of students from seven different schools in Germany. The researchers developed their own CQ scale based on the four-

dimensional structure of the CQS (Van Dyne et al., 2012). Intercultural contact was measured using four researcher devised questions. Students were also administered two situational judgment tests which were comprised of short descriptions of intercultural critical incidents in the school and peer context, followed by three questions asking students to interpret and find a solution for the incident. Intercultural contact positively predicted each dimension of CQ, motivation CQ (β = .33, p < 0.001), cognitive CQ (β = .27, p < 0.001), metacognitive CQ (β = .14, p < 0.001), and behavioural CQ (β = .17, p < 0.001). Thus, adolescents engaging in frequent intercultural contact show higher CQ.

In understanding the importance of intercultural experience, many researchers have sought to incorporate it in training programs addressing CQ. For instance, a systematic program based on experiential learning and social contact principles had a positive correlation with the development of CQ in a sample of 743 management education participants (MacNab, 2011). Results from the CQS (Ang et al., 2007) indicated the following: CQ metacognitive change following the experiential approach (paired t test = 25.6; p < .001), CQ motivation change following the experiential approach (paired t test = 17.8; p < .001), CQ behaviour change following the experiential approach (paired t test = 22.5; p < .001).

Further, classroom training, including role-plays, lectures and simulation games, appears to be most important for the development of metacognitive CQ and cognitive CQ (Eisenberg et al., 2013). In a sample of Austrian students, pre- and post-test paired sample t tests results indicated that the improvement in CQ (CQS, Ang et al., 2007) from Time 1 to Time 2 was sizeable for metacognitive CQ (t = 6.54, p < .001, d = .43) and

cognitive CQ (t = 6.53, p < .001, d = .43). The motivational and behavioural dimensions of CQ, however, did not improve.

Fang et al. (2018) state that a common understanding of how to measure intercultural experience is lacking and previous studies have shown inconsistent results across the four dimensions of CQ (Ang et al., 2015; Ng, Van Dyne, Ang, & Ryan, 2012). The researcher suggests that future research needs to examine what types of cultural experiences may be related to the development of CQ. Further, much research has focused on international experience and/or the use of simulated cross-cultural experiences to develop CQ. As such, a gap exists with regards to assessing how CQ may be developed within more local multi-cultural settings.

Individual Traits

Ang et al. (2006) state that personality traits are broad and relatively stable individual constructs that influence an individual's behavioural choices and experiences. This in turn may shape CQ. For instance, conscientiousness is related to metacognitive CQ ($\beta = .22$, p < .001) and agreeableness predicts behavioural CQ ($\beta = .17$, p < .01). Extraversion was also related to motivational CQ ($\beta = .16$, p < .01), behavioural CQ ($\beta = .15$, p < .05) and cognitive CQ ($\beta = .18$, p < .01). Finally, openness to experience was related to all four factors of CQ, including metacognitive CQ ($\beta = .28$, p < .001), cognitive CQ ($\beta = .17$, p < .01), motivational CQ ($\beta = .25$, p < .001), and behavioural CQ ($\beta = .13$, p < .05) (Ang et al., 2006).

Several other individual differences have also been empirically related to CQ. Self-efficacy was found to be a predictor of CQ in a sample of over 370 managers and management students representing 30 different nationalities (r = .44, p < .001) (MacNab

& Worthley, 2012). The self-efficacy scale used in this study was a 10 item scale (ϕ = 0.85) that had been established in other work and used in previous studies examining cross cultural training (MacNab et al., 2007; Schwarzer, 1994). Three components of CQ were measured for this study; the instrument was a modified version of the CQS (Ang et al., 2007) with a Cronbach's alpha of 0.81. The components included cognitive/metacognitive CQ (r = .22, p < .001), behavioural CQ (r = .30, p < .001) and Motivational CQ (r = .43, p < .001).

Ward et al. (2009) found a significant correlation between multicultural personality factors and CQ. The researchers administered the CQS (Ang et al., 2007) and the Multicultural Personality Questionnaire (MPQ; van der Zee & van Oudenhoven, 2001) to a sample of 102 international students studying in New Zealand. The MPQ consists of 91 items measuring five factors including, flexibility, cultural empathy, social initiative, open-mindedness, and emotional stability. Results indicated that meta-cognitive CQ was related to cultural empathy (r = .58, p < .001) and motivational CQ was significantly correlated with flexibility (r = .53, p < .001), open-mindedness (r = .68, p < .001), cultural empathy (r = .46, p < .001), and social initiative (r = .45, p < .001). Furthermore, total CQ scores correlated significantly with MPQ scores (r = .63, p < .001).

Language ability has also been positively associated with CQ (β = .21, p < .000; Harrison, 2012). This association was found in a sample of 718 undergraduate students in the U.K. The students were administered a 10-item inventory, comprising of a subset of context-relevant items from across all four components of the CQS (Ang et al., 2007), as well as a bank of original questions relating to foreign language abilities. This highlights the importance of language and its ability to act as a barrier in cross-cultural interaction.

This is something of huge significance in the South African context, which is home to 11 official languages. As understanding a large repertoire of languages is a tremendous ask, cultivating other predictors of CQ seems far more feasible.

The enjoyment of intercultural communication, in the face of apparent barriers such as language or not, has been shown to be a highly significant predictor of a CQ (Petrovic, 2011). This association was found in a sample of teachers in which treating the multicultural class as a challenge was the second most important predictor of CQ and openness for intercultural learning was the third. Interestingly, in this particular study, the frequency of contact that the teachers experienced with members of other cultures was not itself a sufficient developmental factor for CQ. Petrovic (2011) explained this finding by stating that in order to develop CQ it is necessary for the contact with members of other cultures to be meaningful. This further supports the idea that an individual should be motivated to participate in cross-cultural interaction in order for it to be successful.

Cultural Competence in the Field of Education

Students are often taught by teachers that come from cultures that differ to their own. This is especially seen in the South African context. The student's culture impacts how they both conceptualize and transmit knowledge (Dahdah, 2017; Kennedy, 2016; Gay, 2010; Ladson-Billings, 1995). Thus, teachers are increasingly required to understand the role culture plays on a students' learning style and how a particular student may subsequently absorb, process, comprehend and retain information (Dunn and Griggs, 1996; Guild & Garger, 1998; Gunduz & Ozcan, 2010; Worthley, 1999). Thus, it is easy to understand why cultural competence, and its previously discussed outcomes, is important in teachers.

Assessing a teacher's degree of cultural competence has implications for understanding to what degree teachers may be engaging in culturally relevant teaching strategies, whether accommodations are made for students from all cultures and lastly, how we may better equip teachers to be more effective in educating all students within a diverse classroom.

Impact of Culturally Relevant Teaching on Performance

Culturally relevant teaching centers a student's culture in teaching practice through three primary approaches: high expectations, promoting critical consciousness and promoting cultural competence (Dickson, Chun, & Fernandez, 2015; Ladson-Billings, 1995a; Ladson-Billings, 1995b; Morrison, Robbins, & Rose, 2008). These practices engage students in active learning that encourages the development of critical thinking, problem solving and overall academic performance skills (Gay, 2010; Ladson-Billings, 2009; Hammond, 2015). Culturally relevant teaching has proven to be an effective strategy in improving student achievement across both grade levels and subject areas (Carter et al., 2013; Gay, 2010; Gorski, 2013; Gehlbach, 2014; Johnson et al., 2013; Gay, 2010; Delpit, 1995; Lipman, 1995).

The significance of culturally relevant teaching strategies was shown in a pretest-posttest experimental study in seventh grade African-American students being taught science in rural South Georgia (Paulk et al., 2014). The sample was chosen due to the low number of students that attend college from this area and the county's high poverty level. A heterogeneous convenience sample was used (n: 52% = white; 48% = students of colour) and included 50 seventh grade students. A mixed-methods approach was used, collecting qualitative and quantitative data from both a control group and treatment

group. The control group received standards-based instructions whereas the treatment group received culturally relevant teaching over a 6 week period.

Culturally relevant teaching strategies included methods such as role playing, in which course content was explained in the context of different cultures. Amongst other things, students were encouraged to become more engaged by adapting what was being learnt to how the student could utilise this information in their own homes and communities and to what degree course content was applicable to each culture.

Two critical questions were asked, firstly, whether introducing culturally relevant teaching would increase science achievement compared to standards-based instruction and secondly, would it improve on students' attitudes and engagement compared to standards-based instruction?

The same weekly quizzes were given to both groups of students to track academic achievements and a science test was given before and after the intervention. Further data was collected using the Science Attitude Survey, Behavioural Charts, and researcher observations. When comparing the pretest (M = 32.13, SD = 13.97) and posttest (M = 69.25, SD = 17.85) data of the standards-based group, there were significant gains (37.12); however, when comparing the pretest (M = 20.43, SD = 13.19) and posttest (M = 65.14, SD = 9.04) data from the culturally relevant group, the culturally relevant group made larger gains (44.71).

In contrast to these results, Collins, Duyar and Pearson (2016) compared CQ scores of teachers with the academic scores of students in a sample of U.S teachers and principals who taught Latino students. There was a positive relationship between teachers' CQ and students' achievement in Math (R2 = 0.56, p < 0.03) and eighth grade

English ($R^2 = 0.58$, $p < 0.03$). However, this effect was not observed at other grade levels. Further, no significant association between teachers and Latino student academic achievement was found. Collins et al. (2016) note that this is in contradiction to existing research which suggests an apparent relationship should effectively exist (Ang et al., 2007; Chen et al., 2011; Groves and Feyerherm, 2011) and that further research is needed to investigate this finding. Collins et al. work (2016) had many limitations. Firstly, with regards to the method, the CQ climate of the entire school was based on the average survey results of half a dozen teachers. Further, the small subset of teachers and principals employed meant researchers were not able to analyse and compare results of each of the four dimensions of CQ.

Paulk et al. (2014) also found that the positive attitude of students in the standards-based group decreased during the study whereas students maintained a positive attitude towards science in the culturally relevant group. More specifically, in the culturally relevant group, agreeing that science lessons were fun increased from 65% to 69%, there was a 41% to 56% increase in students looking forward to science class, an increase from 59% to 81% in wanting to know more about science, and an increase from 69% to 100% in agreeing that science is one of the most interesting subjects in school. Interestingly, in the standards based group prior to the start of the study, 100% of the students agreed that their science teacher motivated them to do their best; this number decreased to 77% after the intervention.

Similar findings were seen in a study conducted by Byrd (2016), who asked whether students believed that teachers took an interest in how culture may impact learning processes and if this impacted academic performance. Participants included 315

6th- to 12th-grade students recruited through a nationwide panel by Qualtrics, an online survey company. This method of data collection was chosen in an effort to address a limitation found in many culturally relevant teaching studies - focus on homogeneous and often predominantly Black classrooms (Morrison et al., 2008). The use of Qualtrics allowed for the inclusion of White, Latino, Asian, and Black students in the sample, from schools of varying racial compositions. This limitation was also taken into account in the current study.

Participants completed The Student Measure of Culturally Responsive Teaching (Dickson et al., 2015) and other self-report questionnaires measuring academic outcomes, social racial socialisation and racial attitudes. Students were asked to report their average grades, level of interest and enjoyment related to being in school. Results correlated the perception of the students that the teacher is capable of relating to their culture to better academic outcomes, including greater interest in school ($\beta = 0.383$, $p < .001$) and greater feelings of belonging ($\beta = 0.366$, $p < .001$). These studies reveal the importance of student-teacher relationships on educational outcomes. Further, the need to investigate what attributes may work toward enhancing these cross cultural relationships.

CQ plays an integral role in the competencies needed to engage in culturally relevant teaching strategies successfully. Kennedy (2016) investigated how teachers at different levels of CQ teach culturally diverse students, whether the teachers are able to enact intercultural capabilities, and what the nature of the relationship between CQ and culturally relevant pedagogy is. The study used a case series of 18 teachers that were administered the CQS, a demographic survey, semi-structured interviews, and classroom observations. The CQS scores were used to categorise teachers as having low (M= 56.34,

SD = 5.86), medium (M = 75.17, SD = 13.45), and high CQ (M = 89.44, SD = 9.69). Findings indicated that teachers with high CQ were more likely to enact culturally relevant practices in their classrooms, such as actively striving to create relevant lessons that connected to student lives and promoted critical inquiry. This group of teachers reported deeply felt motivation to work with diverse student populations and were more likely to recognize their own limited perspectives and the rich knowledge and experiences of their students.

Thus, cultural competence in teachers is associated with improving their students' academic performance. Effective teaching is grounded in a strong student-teacher relationship. Developing these strong relationships in classrooms with significant cultural differences can be challenging and requires a special set of interpersonal capabilities. Identifying what may predict CQ in teachers may prove effective in identifying and cultivating capabilities in teachers that may contribute toward successful intercultural interaction, producing the following outcomes: a) good adaptability of the student and teacher (manifested in feelings of pleasure and well-being), b) developing and maintaining good relations with members of other cultures and c) success in achieving the interaction goals (Thomas et al., 2008).

Study Aims & Hypotheses

The study aimed to address current gaps in research focusing on cultural intelligence in teachers, specifically within the multicultural South African context, by addressing the following aims:

Aim 1

This study aimed to assess the degree of cultural competence within South African teachers. Further, which dimensions of CQ are higher according to the four factor model as outlined by Earley and Ang (2003) and the eleven factor model of CQ (Van Dyne et al., 2012). Previous studies show that working within an international setting provides continual cross-cultural interactions, increasing overall CQ and more specifically metacognitive and cognitive CQ. As such, similar findings were predicted in the sample of teachers who teach in culturally diverse classrooms.

Aim 2

This study aimed to investigate the feasibility of using the adapted version of the E-CQS (Da Silva, 2015) as a measure of CQ within the South African population. It is imperative to assess the validity of a research measure within a particular population to ensure reliable research results (Wilson, 2010). Based on research findings, Da Silva (2015) suggested an adapted version of the E-CQS (Van Dyne et al., 2012) that may yield more accurate results in the South African population. However it is yet to be further validated. It was hypothesized that similar findings will be identified by both measures, thus providing support for the use of the adapted version of the E-CQS within South Africa population.

Aim 3

This study aimed to assess what factor may contribute towards the development of CQ. Based on existing research, it was posited that increased interaction with diverse students, a highly multicultural classroom, and increased years of teaching experience, international travel, increased language ability and training in cultural sensitivity each would contribute towards increased cultural competence.

Aim 4

This study investigated if teachers who have been teaching diverse students for longer had higher CQ scores. The vast literature on cultural competence identifies international experience as one of the biggest predictors of higher cultural competence. However, researchers have shown that working within a local multicultural environment (such as a foreign office) has similar effects. Whilst the purpose of previous research has generally been to identify what may help more successful cross-cultural adaptation in future expatriates, similar adaptation is needed more locally in South Africa as we embrace transformation and move towards a more inclusive country. As South Africa is a highly multi-cultural country, I posited that teacher's experience a similar degree of cross-cultural interaction in their classrooms as one would when working in an international department. Therefore, it was hypothesized that teachers who had more teaching experience in South Africa would have higher degrees of cultural competence whilst controlling for international travel.

Significance of Study

After Apartheid, South Africa implemented desegregation in the educational system to advocate socially just and democratic education. Although constitutionally liberated from the vestiges of white dominance in 1994, secondary schooling is still largely defined along socio-economic lines and is struggling to rid itself of the legacy of Apartheid.

75-80% of South African schools are low-performing and serve low income families that are overwhelmingly black. In contrast, students from wealthy and middle-class families which are predominantly white comprise the remaining 20-25% of schools and traditionally perform at a higher standard (Le Roux, 2016). Further, many schools in which over 50% of students are children of colour, the language of instruction remains English and the teaching staff remain primarily white (Mbete, 2018). Central to these struggles is the implication that teachers, in addition to raising the academic achievement of all students, are increasingly required to confront the inequalities that impose on the development of each students potential (Kollapen, 2006).

Each teacher is required by the development imperative of the constitution (RSA, 1996) to 'free the potential of each person'. Further, according to the Department of Higher Education and Training (2011), all pre-service teachers should be educated in a manner which instils an unconditional willingness to deal with both transformation and diversity. This raises the inevitable question as to how we may better equip teachers in this regard.

The South African Constitution states that every person has the right to education. Amongst the many challenges faced in achieving this goal is one that is central to both

teaching staff and students alike - the increase in cultural diversity in schools. This poses a unique set of challenges in and of itself. Teachers are called to manage and educate students with cultures, languages, and backgrounds different from their own (Meier & Hartell, 2009), yet still need to find a way to free the potential of each person. It may thus be argued that in order to overcome any barriers created by differences in culture, the teachers require cultural competence.

In order for cross-cultural interactions to be successful the teacher needs to take into account how culture impacts the manner in which a student conceptualizes and understands information and how this may be translated into performance and behaviour (Ang et al., 2004). Among the numerous competencies needed to be an effective teacher, cultural competence has also been shown to be one of the strongest predictors of higher academic success amongst students (Gehlbach, 2014; Johnson et al., 2013; Gay, 2010; Delpit, 1995; Lipman, 1995; Maiga, 1995; Shujaa, 1995; Tate, 1995).

Determining the level to which South African teachers display cultural competence and how it may be developed thus becomes an arguably imperative step in meeting the educational standards laid out by the South African constitution. Further, accurately ascertaining this degree of cultural competence within South Africans calls for reliable measures that are devoid of implicit bias. Therefore, it is easy to understand the importance of validating measures to ensure that efforts in understanding cultural competence will be based on reliable results.

In an increasingly racially and ethnically diverse nation, reducing disparities and inequities is a priority. Effective cross-cultural interaction falls within this.

Chapter II

Method

The study was conducted using an online study format that included three self-report questionnaires administered via Google Forms. The target sample was 120 participants, teachers from various schools within South Africa. Teachers were recruited on a voluntary basis after meeting with each Headmaster at the respective schools and gaining consent for participation in the study.

Participants

A total of 145 teachers completed the study, with 80.6% being female and 19.4% being male. Inclusion criteria for participation included employment as a teacher in South Africa with the necessary teaching qualification and fluent in English. Participants were excluded if they had any documented disabilities (e.g., communication, motor) that would prevent them from following study procedures. Further, after data collection was complete, the data was cleaned to exclude any participants that had not completed the questionnaires correctly. This resulted in 6 participants being excluded from the study, four females and 2 males, resulting in a sample size of 139 teachers.

Measures

The study protocol included self-report questionnaires aimed at evaluating each teacher's degree of Cultural Intelligence as well as variables that may predict what contributes towards the development of Cultural Intelligence.

Cultural Intelligence: Cultural Intelligence was evaluated using the Cultural Intelligence Scale (CQS; Ang et al., 2007, 2008). The CQS is a 20-item instrument designed to measure an individual's CQ, or the capability of an individual to function effectively in situations characterized by cultural diversity (Ang & van Dyne, 2008). CQ is measured across four subscales: metacognitive, cognitive, motivational, and behavioural. Participants are given a list of items to which they select the response that best describes their capabilities. Responses are in the form of a Likert scale in which 1 indicates strongly disagree and 7 indicates strongly agree. Examples of items include: 'I know the marriage systems of other cultures' and 'I enjoy living in cultures that are unfamiliar to me'. Higher scores indicate higher CQ. The CQS can be completed quickly and is freely available from the Cultural Intelligence Center. The assessment was validated in a sample of U.S. MBA students and has a reliability rating of Cronbach's alpha = 0.79 for the study sample (Van Dyne et al., 2012). The assessment was also validated (Cronbach alpha > .80) by Mahembe and Engelbrecht (2014) in a South African sample of 229 young adults.

Sub-dimensions of Cultural Intelligence: In 2012 the CQS was further developed by Van Dyne et al., resulting in the Expanded-CQS (E-CQS, Van Dyne et al., 2012). The E-CQS measures the sub-dimensions of the four-factor model assessed by the CQS (Ang et al., 2007). Participants are asked to complete a questionnaire in which they have to read a statement and select a response that best describes their capabilities. Responses range from 1 (strongly disagree) to 7 (strongly agree). Items include: 'I modify the way I disagree with others to fit the cultural setting' and 'I update my cultural knowledge after a cultural misunderstanding'. The assessment was validated in 286 individuals from more

than 30 countries (Van Dyne et al., 2012) with a Cronbach alpha of .70. The E-CQS was evaluated within the South Africa context using a sample of 601 employees across various organisations (Da Silva, 2015). Based on study findings, the researcher created a modified version of the E-CQS that is appropriate for a South African sample. The adapted version shows good internal consistency, with each sub-dimension of CQ showing Cronbach's alpha of above .70. More specifically, culture-general knowledge (0.812), context-specific knowledge (0.887), planning (0.751), verbal behaviour (0.746) and speech acts (0.706). In order to yield more reliable results the adapted version created by Da Silva (2015) will be used in the current study.

Researcher Developed Questionnaire: Participants were asked to complete a 17-item questionnaire developed by the researcher. Items are centered on findings from an extensive literature review in which variables that contribute towards the development of Cultural Intelligence have been identified. The potential predictor variables are itemized in a question format and include items such as 'How diverse is the student group that you currently teach directly in terms of cultural composition?', 'How many years working experience as a teacher do you have?', 'Have you ever received training or being on a course that teaches you about cultural sensitivity, cultural intelligence, or culturally relevant teaching strategies?' and 'If you answered YES to the above, please specify what type.' The questionnaire was approved for use by CUHS, following the IRB standards for conducting research.

Procedure

Data was collected from study participants using Google Forms, a cloud-based

data management tool used for both designing and developing web-based questionnaires.

This tool is provided free of charge by Google Inc. and is available for anyone in the

public to use (Vasantha & Harinarayana, 2016).

Data Collection

Each of the three questionnaires included in the study were converted into a single

form that was received by each participant via email. The form was both computer and

mobile friendly and required participants to simply input and submit their responses.

This method of data collection was chosen due to increased response speed, easy

access, higher response rates, lower cost incurred and decreased time consumption for

both respondents and the researcher (Cobanoglu, Warde & Moreo, 2001; Vasantha &

Harinarayana, 2016). Further, Lin and Wang (2015) concluded that online surveys have

increased reliability than face-to face surveys, due to factors such as 'white-coat effects'.

Data collection may however be limited if there is a lack of knowledge regarding

internet usage, access to internet, mobile devices and/or computer software. Working

email addresses were provided to the researcher, thus implying that potential participants

had both previously used the respective email addresses and had access to the necessary

software. Potential participants who had received the invitation to participate in the study

that did not have access to the internet within the time allotted for survey completion

were automatically excluded from the study.

Study Protocol

Following the ethical guidelines outlined by the CUHS, the local ethical policies of the secondary schooling system in South Africa was followed regarding research consent processes. This was approved by the International Review Board. This process involved two steps, firstly, the headmaster/headmistress at each of the respective schools was approached regarding the study and a meeting date was set. During this meeting, the purpose of the study, study protocol and confidentiality was discussed. Upon gaining consent from the Headmaster/Headmistress for their respective school to participate in the research study, a list of teacher email addresses, now potential participants, was given to the researcher. Thereafter, potential participants received an email directly from the researcher which provided a letter detailing the study, confidentiality and a link to the Google Form. The accompanying letter specified to the participant that consent was implicitly ascertained via the participant completing and submitting the questionnaire.

Upon clicking the link provided in the email participants were redirected to a Google Form. This form asked participants to complete a questionnaire assessing CQ according to the four-factor model outlined and developed by Ang et al. (2007, 2008) the E-CQS (Van Dyne et al., 2012) and a series of short question items (see Measures section). Assessment results were tracked using numerical identification of each participant so as to ensure anonymity. As such, no identifying information was used. After completing all measures the participants were directed to a debriefing page in which they were thanked for their participation. Details of the researcher were also provided if the participants had any questions regarding the study.

After data collection was complete any data that had been inputted incorrectly or followed inconsistent patterns was removed from the sample pool. This included multiple answers per item or patterned responses (i.e. consistently giving a score of 1).

Data Analysis

Data analysis was conducted for each aim accordingly.

Aim I

In assessing the degree of cultural competence within South African teachers, basic measures of central tendency, including both mean and standard deviation, were calculated. These were used to examine differences between each dimension and sub dimension of CQ.

Aim 2

To assess the feasibility of using the adapted version of the E-CQS (Da Silva, 2015) as a measure of CQ within a SA sample, internal reliability was investigated using Cronbach's coefficient alpha (Bryman and Bell, 2007). Cronbach's alpha ranges from 0 to 1 where 1 is indicative of perfect internal reliability while 0 indicates no internal reliability. An overall Cronbach alpha coefficient of 0.7 for a measure is generally regarded by researchers as a suitable level of internal consistency reliability.

Thereafter, inter-item correlation analysis assessed correlations between each item in both the CQS and the E-CQS. Correlations are regarded as reliable if greater than 0.3. Further, item-to-total correlation analysis was conducted to examine correlations (> 0.5) between individual items and total scores (Hair et al., 2006). These standards were used

in order to determine the reliability of both the CQS and the E-CQS within the current study's sample.

Lastly, a series of Pearson's correlations were conducted. This examined the strength and direction of the relationship between scores obtained on the CQS and the adapted version of the E-CQS. To gain more detail pertaining to which dimensions exhibit larger differences between scores, paired sample t-tests were then used, helping to ascertain whether measures may be used interchangeably.

Aim 3

A multivariate analysis of variance (MANOVA) was conducted to assess the effect of multiple independent variables on the various dimensions of CQ. This particular aim calls for multiple hypotheses to be tested concurrently, introducing an increased risk of Type 1 errors. MANOVA is a robust analysis that accounts for this increased experiment wise error rate and allows for statistical inferences to be drawn regarding both main and interactional effects. It is generally accepted that MANOVA proves an assumed cause-and-effect relationship between multiple dependent and independent variables (Warne, 2014). Thus MANOVA allowed for potential predictor variables of CQ to be identified.

In assessing MANOVA results, Wilk's Lambda (Λ) was used to test if there are differences between group means. Lambda measures the percentage of variance in each of the dependent variables that is not explained by differences between the independent variables. Together with a p-value of less than .05, the null hypothesis was rejected if Lambda was close to 0, suggesting that there is not any variance which is not explained

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by the independent variable (Nath & Pavur, 1985). To determine how dependent variables differed for each of the significant independent variables, a test of between-subjects effects was conducted.

As there are equal sample sizes for each group, Levene's Test of Equality of Error Variances was not conducted. Two separate MANOVA's were run, first assessing the CQS as the dependent variables and thereafter the E-CQS. This yielded two separate sets of results. In examining MANOVA results for the E-CQS (Da Silva, 2015) the Bonferroni correction was used. This was due to several tests being performed simultaneously. The multiple-comparison correction adjusts probability values (p) so as to reduce the risk of Type I error (Shaffer, 1995). This set the new significance value needed at $p < 0.005$ (α/n).

Aim 4

To investigate if teaching diverse students for longer will increase CQ scores both descriptive statistics and a series of Pearson's partial correlations were conducted, whilst controlling for international travel. The sample was split into two groups: participants who have been working as teachers for less than 15 years and those who have been working as teachers for more than 15 years. As similar findings have been found between the CQS and the adapted version of the E-CQS, only the CQS was used in this analysis.

Results

Descriptive statistics for the sample were calculated and are displayed in Table 1. The final sample included 139 teachers from various schools within South Africa, including both independent/private schools and public/state schools. The sample was comprised of mostly female teachers (81.3%). Although slightly higher, this percentage is largely in line with gender statistics within the South African education system which reveals that women comprise roughly 73% of the teaching staff (Council in Higher Education, 2009; Akala, 2018).

The sample also included mainly white teachers at 69.8%. The exact statistics on the ethnic ratio of teachers in South Africa is largely unknown, however this number may reflect the disparities still faced within the current education system considering that white people comprise only 9.1% of the South African population. Further, responses to the independent variables indicated that the majority of teachers self-reported a high degree of cultural diversity amongst students (62.6%) and frequent cross-cultural interaction (91.4%) across each of the schools sampled. These statistics offer support for the increased need in greater cultural competence.

Cultural Competence in South African Teachers

Table 2 depicts the detailed differences in both the means and standard deviations of CQ, as measured by the CQS and adapted version of the E-CQS accordingly. Teachers were found to have a mean overall CQ score of 4.93 (SD = 0.85) according to the four-

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Table 1

Demographic Analysis

Variables		*n*	*%*
Age	18-25	5	3.6
	26-30	15	10.8
	31-35	19	13.7
	36-40	13	9.4
	41-45	21	15.1
	46-50	13	9.4
	51-55	23	16.5
	56-60	13	9.4
	60+	17	12.2
	Total	139	100
Race	White	97	69.8
	African	29	20.9
	Indian	7	5
	Coloured	5	3.6
	Chinese	1	.7
	Total	139	100
Gender	Males	26	18.7
	Females	113	81.3
	Total	139	100
Citizenship	South African	123	88.5
	Dual	16	11.5
	Total	139	100
Home languages Spoken	Afrikaans	17	12.2
	English	85	61.2
	English, Afrikaans	8	5.8
	English, Other	1	.7
	English, Sepedi, Sesotho	1	.7
	English, Setswana, isiZulu	1	.7
	English, Tshivenda	1	.7
	isiNdebele	2	1.4
	isiXhosa	1	.7
	isiZulu	8	5.8
	Other	7	5.0
	Sesotho	4	2.9

	Setswana	2	1.4
	Tshivenda	1	.7
	Total	139	100
Marital Status	Single	28	20.1
	Married	90	64.7
	Co-habiting	5	3.6
	Divorced	10	7.2
	Divorced, co-habiting	1	.7
	Widowed	5	3.6
	Total	139	100
Total Languages Spoken	1	14	10.1
	2	76	54.7
	3	28	20.1
	4	9	6.5
	5	6	4.3
	6	3	2.2
	7	1	.7
	8	2	1.4
	Total	139	100
Years of Teaching	0 – 2	8	5.8
	3 – 5	13	9.4
	6 – 10	19	13.7
	11 – 15	21	15.1
	16+	78	56.1
	Total	139	100
Student Cultural Diversity	Very diverse	87	62.6
	Predominantly from one culture	7	5.0
	Some cultural diversity	45	32.4
	Total	139	100
Student Gender Diversity	Mainly female	34	24.5
	Mainly male	5	3.6
	Balanced in terms of gender	100	71.9
	Total	139	100
Cross-Cultural Interaction	Almost no interaction.	1	.7
	Frequent interaction.	127	91.4
	Some interaction.	11	7.9
	Total	139	100
Worked Internationally	No	105	75.5
	Yes	34	24.5

	Total	139	100.0
International Travel	Has not travelled internationally	25	18.0
	Once a year.	24	17.3
	Once every two years.	15	10.8
	Once every 3 or more years.	67	48.2
	Twice or more a year.	8	5.8
	Total	139	100.0
Training	No	92	66.2
	Yes	47	33.8
	Total	139	100.0

factor model of CQ (Ang et al., 2007). In comparison, a mean score of 4.63 (SD =

0.93) was found by the eleven-factor model (Van Dyne et al., 2012) (see Figure 1). If we

consider an average CQ score to be 3.5 (50%) and a perfect score to be 7 (100%), results

indicate that both measures place the sample in the 75th percentile (less than a combined

average score of 5.25). Attributing percentages or quartiles to the scores has the benefit of

allowing for a more common understanding of score interpretations.

Cognitive CQ was the lowest scored dimension of CQ on both measures, with

mean scores of 4.18 (SD = 1.18; CQS) and 3.90 (SD = 1.16; E-CQS) respectfully. On the

opposite end, the highest scored dimension of CQ differed between the two measures. On

the CQS it was found to be metacognitive CQ at a mean score of 5.66 (SD = 0.97),

whereas motivational CQ was the highest dimension on the adapted E-CQS with a mean

score of 5.24 (SD = .97). Figure 2 depicts boxplots comparing the mean scores between

each measure. Correlational analysis suggest a stronger relationship between the CQS

and the E-CQS for motivational CQ (r = .722, t = 5.12, p < .001) than for metacognitive

CQ (r = .683, t = 10.17, p < .001). The strength of the relationships between mean scores

is examined in the following section.

Table 2

Descriptive Statistics for Dependent Variables

CQS (Ang et al., 2007)			
Dimensions	*n*	*M*	*SD*
Metacognitive CQ	139	5.66	0.97
Cognitive CQ	139	4.18	1.18
Motivational CQ	139	5.56	1.03
Behavioural CQ	139	4.34	1.27
Overall CQ	139	4.93	0.85
Adapted E-CQS (Da Silva, 2015)			
Expanded Dimensions	*n*	*M*	*SD*
Motivational CQ	**139**	**5.24**	**0.97**
Intrinsic Motivation	139	5.30	1.17
Extrinsic Motivation	139	5.04	1.14
Self-Efficacy to Adjust	139	5.37	1.03
Cognitive CQ	**139**	**3.90**	**1.16**
Culture General Knowledge	139	3.75	1.17
Context-Specific Knowledge	139	4.06	1.28
Metacognitive CQ	**139**	**4.92**	**1.07**
Planning	139	4.19	1.34
Awareness	139	5.37	1.05
Checking	139	5.21	1.15
Behavioural CQ	**139**	**4.48**	**1.17**
Speech Acts	139	4.57	1.23
Verbal Behaviour	139	4.37	1.22
Non-Verbal Behaviour	139	4.49	1.30
Overall CQ	**139**	**4.63**	**0.93**

Feasibility of using the Adapted E-CQS within South Africa

In assessing internal consistency, the CQS (Ang et al., 2007) was shown to have a Cronbach's alpha coefficient of .744 and .957 for the adapted E-CQS (Da Silva, 2018). These results, together with inter-item correlation analysis (r's > 0.3) and item-to-total correlation analysis (r's > 0.5), suggest that the factors meet the minimum requirements for good reliability. However, the E-CQS is less stable than the CQS (see Tables 3, 4, 5, 6), a finding supported by Da Silva (2015).

Table 7 depicts results of the Pearson's correlational analysis assessing the strength and direction of similarities between scores obtained on either measure. Results indicate significant positive correlations (r's ranging from .683 to .814, $p < .001$) between scores obtained on both the CQS and the adapted E-CQS. More specifically, strong correlations were seen between overall CQ scores ($r = .814$, $p < .001$), motivational CQ ($r = .722$, $p < .001$) and behavioural CQ ($r = .742$, $p < .001$). Figure 3 is a scatterplot depicting the positive correlation between overall CQ scores achieved for both measures.

Paired t-test analyses were conducted to examine which dimensions exhibit larger differences in mean scores. Net differences between scores can be ranked form largest to smallest as follows: metacognitive CQ ($t_{139} = 10.565$, $p < .000$), overall CQ ($t_{139} = 6.527$, $p < .000$), motivational CQ ($t_{139} = 5.121$, $p < .000$) and lastly, cognitive CQ ($t_{139} = 3.496$, $p < .001$). No significance was noted for behavioural CQ ($t_{139} = -1.801$, $p < .074$). On average, the CQS scores ranged between 0.28 to 0.74 higher than the E-CQS scores, excluding behavioural CQ (see Table 8).

Table 3

Inter-Item Correlation Matrix – CQS (Ang et al., 2007)

	Metacognitive CQ	Cognitive CQ	Motivational CQ	Behavioural CQ
Metacognitive CQ	1.00	.46	.57	.39
Cognitive CQ	.46	1.00	.41	.49
Motivational CQ	.57	.41	1.00	.28
Behavioural CQ	.39	.49	.28	1.00

Table 4

Item-Total Statistics– CQS (Ang et al., 2007)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Metacognitive CQ	14.09	7.25	.60	.66
Cognitive CQ	15.57	6.55	.59	.66
Motivational CQ	14.19	7.53	.51	.70
Behavioural CQ	15.40	6.67	.49	.73

Table 5

Inter-Item Correlation Matrix – E-CQS (Da Silva, 2015)

	Intrinsic	Extrinsic	Self-Efficacy	Motivational CQ	Culture General	Context-Specific	Cognitive CQ	Planning	Awareness	Checking	Metacognitive CQ	Speech Acts	Verbal	Non-Verbal	Behavioural CQ
Intrinsic Motivation	1.00	.56	.69	.86	.31	.48	.42	.50	.61	.57	.61	.44	.39	.42	.45
Extrinsic Motivation	.56	1.00	.70	.86	.43	.50	.49	.44	.53	.47	.53	.42	.41	.36	.42
Self-Efficacy to Adjust	.69	.70	1.00	.90	.43	.59	.55	.49	.66	.62	.64	.40	.37	.36	.40
Motivational CQ	.86	.86	.90	1.00	.44	.60	.55	.55	.68	.63	.68	.48	.45	.44	.49
Culture General Knowledge	.31	.43	.43	.44	1.00	.79	.94	.57	.52	.56	.61	.55	.45	.51	.54
Context-Specific Knowledge	.48	.50	.59	.60	.79	1.00	.95	.68	.66	.69	.75	.62	.54	.58	.62
Cognitive CQ	.42	.49	.55	.55	.94	.95	1.00	.67	.63	.66	.72	.62	.52	.58	.61
Planning	.50	.49	.49	.55	.57	.68	.67	1.00	.72	.70	.91	.61	.57	.60	.64
Awareness	.61	.53	.66	.68	.52	.66	.63	.72	1.00	.77	.91	.60	.53	.55	.60
Checking	.57	.47	.62	.63	.56	.69	.66	.70	.77	1.00	.90	.60	.58	.62	.64
Metacognitive CQ	.61	.53	.64	.68	.61	.75	.72	.91	.91	.90	1.00	.66	.62	.65	.69
Speech Acts	.44	.42	.40	.48	.55	.62	.61	.61	.60	.60	.66	1.00	.79	.84	.94
Verbal Behaviour	.39	.41	.37	.45	.45	.54	.52	.57	.53	.58	.62	.79	1.00	.81	.93
Non-Verbal Behaviour	.42	.36	.36	.44	.51	.58	.58	.60	.55	.62	.65	.84	.81	1.00	.95
Behavioural CQ	.45	.42	.40	.49	.54	.62	.61	.64	.60	.64	.69	.94	.93	.95	1.00

Table 6

Item-Total Statistics – E-CQS (Da Silva, 2015)

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Intrinsic Motivation	64.96	170.50	.64	.96
Extrinsic Motivation	65.22	171.43	.62	.96
Self-Efficacy to Adjust	64.88	171.81	.69	.96
Motivational CQ	65.02	170.95	.77	.96
Culture General Knowledge	66.51	169.04	.69	.96
Context-Specific Knowledge	66.20	162.95	.82	.95
Cognitive CQ	66.35	165.84	.81	.95
Planning	66.06	162.98	.78	.95
Awareness	64.88	168.38	.81	.95
Checking	65.04	166.03	.81	.95
Metacognitive CQ	65.33	165.53	.90	.95
Speech Acts	65.68	165.17	.78	.95
Verbal Behaviour	65.88	167.13	.72	.96
Non-Verbal Behaviour	65.76	164.63	.75	.95
Behavioural CQ	65.77	165.45	.81	.95

Table 7

Correlational Analysis Comparing mean scores between the CQS (Ang et al., 2007) and Adapted E-CQS (Da Silva, 2015)

Dimensions	N	r
CQS Metacognitive CQ & ECQS Metacognitive CQ	139	.683*
CQS Cognitive CQ & ECQS Cognitive CQ	139	.670*
CQS Motivational CQ & ECQS Motivational CQ	139	.722*
CQS Behavioural CQ & ECQS Behavioural CQ	139	.742*
CQS Total CQ & ECQS Total CQ	139	.814*
Note: * Correlation is significant at the 0.001 level (2-tailed).		

Table 8

Paired Sample T Test Comparing Differences between the CQS (Ang et al., 2007) and Adapted E-CQS (Da Silva, 2015)

Pairs	M	SD	t	df	Sig. (2-tailed)
CQS Overall CQ - ECQS Overall CQ	.30	.55	6.53	138	.000
CQS Metacognitive CQ - ECQS Metacognitive CQ	.74	.82	10.57	138	.000
CQS Cognitive CQ - ECQS Cognitive CQ	.28	.95	3.50	138	.001
CQS Motivational CQ - ECQS Motivational CQ	.32	.75	5.12	138	.000
CQS Behavioural CQ - ECQS Behavioural CQ	-.13	.88	-1.80	138	.074
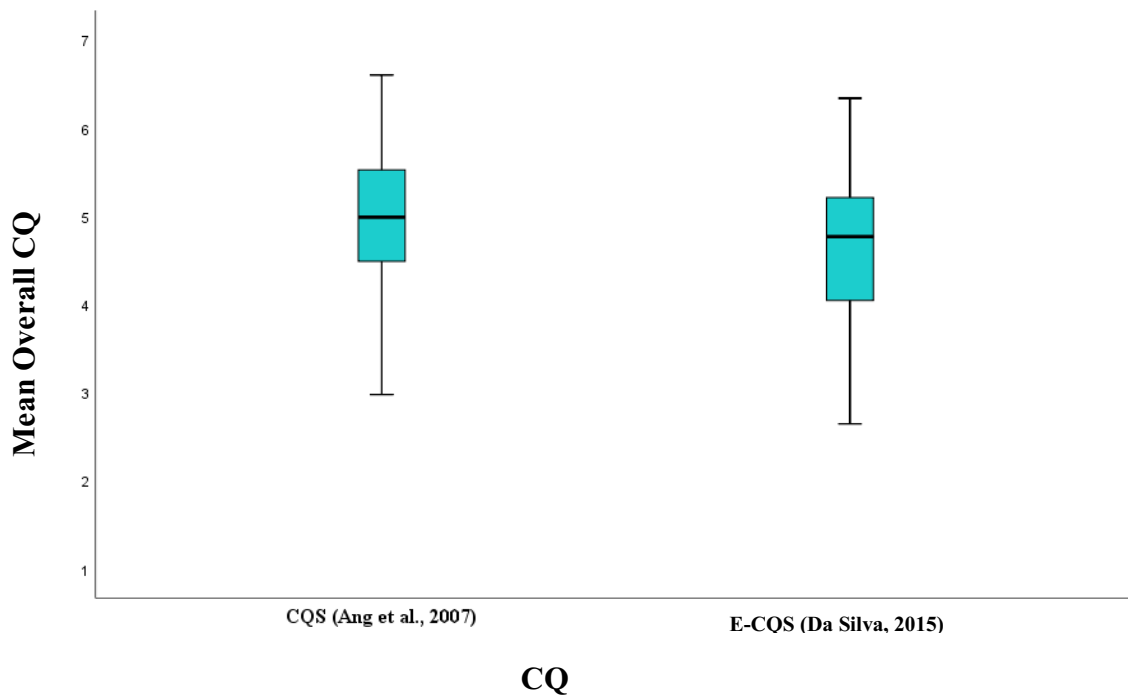
Figure 1: Mean Overall CQ scores. This boxplot compares the mean scores of the

teachers as achieved by the CQS and the adapted E-CQS.
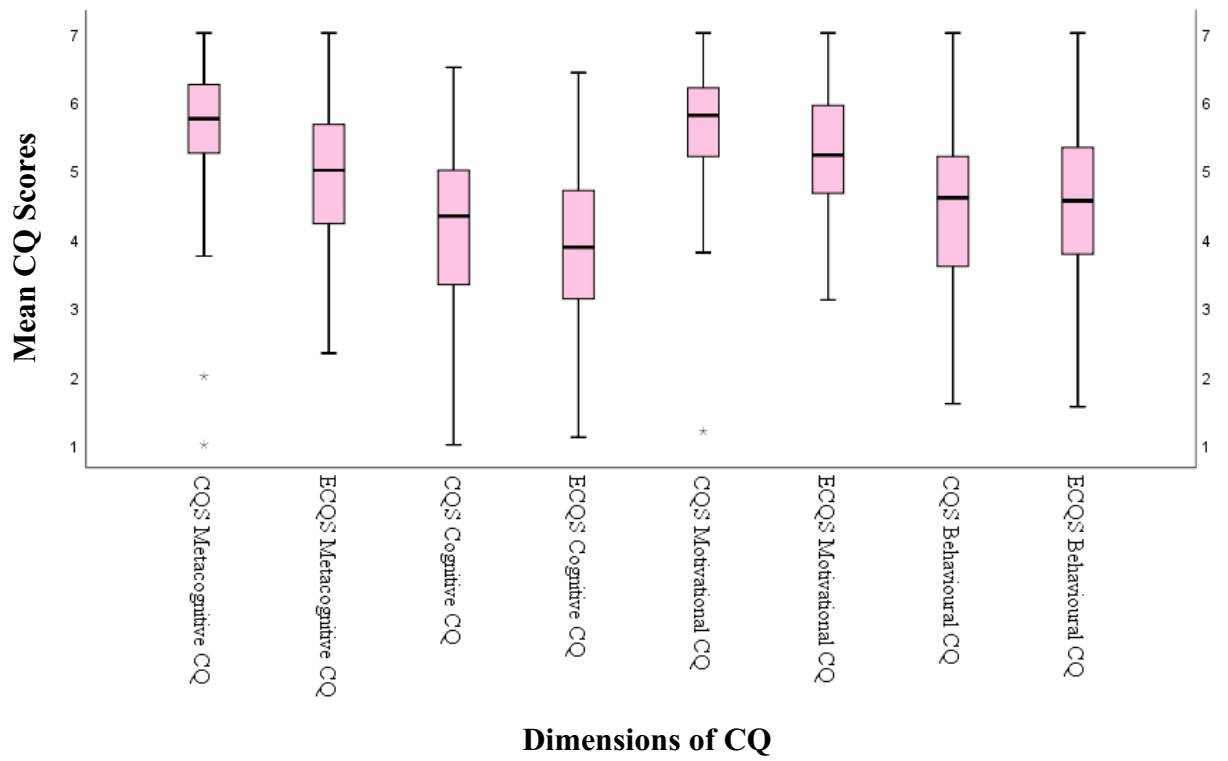
Figure 2: Mean scores of each dimension of CQ. This boxplot compares the mean scores of the teachers for each dimension of CQ as achieved by both the CQS and adapted E-CQS.
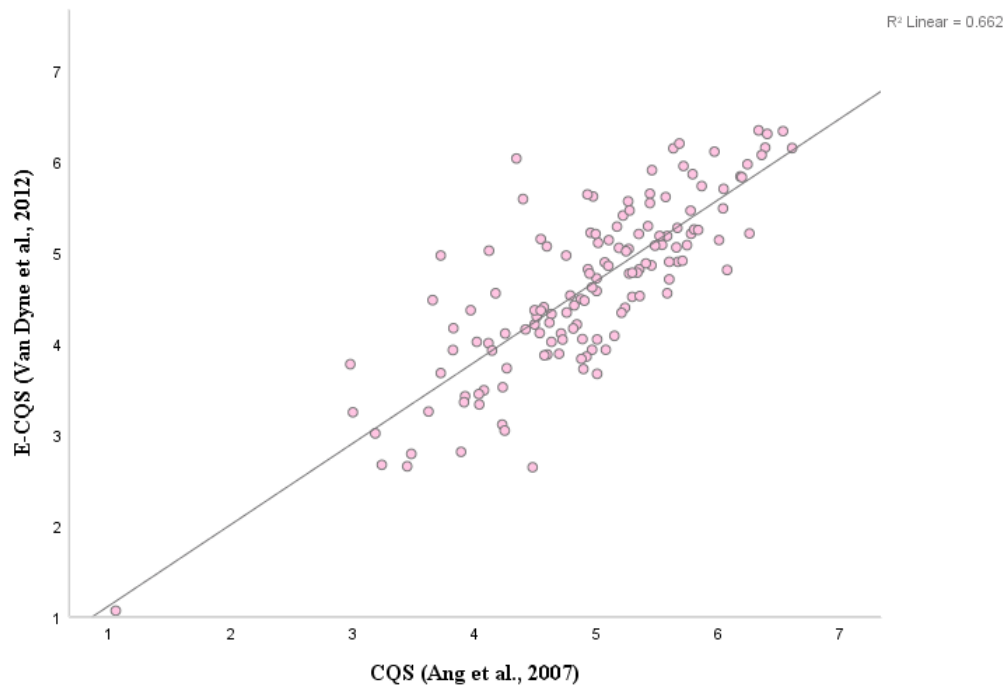
Figure 3: Scatterplot of the correlation between the overall CQ scores of the teachers between the CQS (Ang et al., 2007) and E-CQS (Da Silva, 2015).

Factors Contributing toward the Development of Cultural Competence

The first MANOVA conducted indicated significant main effects between the four-factor model of CQ and both race (Λ = .737, F = 1.771, p < .05) and training (Λ = .822, F = 4.757, p < .05). The other independent variables showed no significance and as such were not interpreted further (see Table 9). Of these, significant between-subjects effects were seen between training and cognitive CQ (F = 4.332, p < .05), training and behavioural CQ (F = 19.443, p < .05) and training and overall CQ (F = 9.529, p < .05), as depicted in Table 10.

In examining MANOVA results for the E-CQS (Da Silva, 2015) the Bonferroni correction was used. This was due to several tests being performed simultaneously. The multiple-comparison correction adjusts probability values (p) so as to reduce the risk of Type I error (Shaffer, 1995). This set the new significance value needed at p < 0.005 (α/n).

The second MANOVA indicated significant main effects between the eleven-factor model of CQ and race (Λ = .342, F = 2.297, p < .005), total languages spoken (Λ = .297, F = 1.695, p < .005), cross-cultural interaction (Λ = .564, F = 2.445, p < .005) and training (Λ = .733 F = 2.683, p < .005) (see Table 11). Of these, significant between-subjects effects were seen between cross-cultural interaction and intrinsic motivation (F = 8.076, p < .005), training and context-specific knowledge (F = 11.413, p < .005), training and cognitive CQ (F = 8.507, p < .005), training and planning (F = 8.522, p < .005), training and awareness (F = 8.260, p < .005), training and verbal behaviour (F = 10.742, p < .005), training and behavioural CQ (F = 9,173, p < .005), training and overall CQ (F = 9.023, p < .005) (see Table 12).

In comparing results both measures identified training in cultural sensitivity, cultural competence and/or culturally relevant teaching strategies as a potential contributing variable towards the development of cognitive CQ, behavioural CQ and overall CQ.

Table 9

Multivariate Tests – CQS (Ang et al., 2007)

Effect	Wilk's' Lambda	F	Sig.
Age	.630	1.360	.098
Race	.737	1.771	.035
Home language	.525	1.295	.101
Total languages spoken	.832	.697	.854
Years of Teaching	.751	1.653	.056
Student Cultural Diversity	.958	.477	.871
Student Gender Diversity	.929	.820	.586
Cross-Cultural Interaction	.871	1.579	.134
International Work	.961	.891	.473
International Travel	.762	1.570	.077
Training	.822	4.757	.002

Table 10

Tests of Between-Subjects Effects – CQS (Ang et al., 2007)

Source	Dependent Variable	F	Sig.
Age	Metacognitive CQ	.892	.527
	Cognitive CQ	.887	.531
	Motivational CQ	.686	.702
	Behavioural CQ	3.354	.002
	Overall CQ	1.414	.201
Race	Metacognitive CQ	1.131	.347
	Cognitive CQ	1.127	.349
	Motivational CQ	.956	.436
	Behavioural CQ	1.843	.127
	Overall CQ	.349	.844
Home language	Metacognitive CQ	1.389	.185
	Cognitive CQ	.541	.883
	Motivational CQ	1.309	.227
	Behavioural CQ	1.187	.304
	Overall CQ	.819	.630
Total languages spoken	Metacognitive CQ	.600	.729
	Cognitive CQ	1.100	.369
	Motivational CQ	.850	.535
	Behavioural CQ	.264	.952
	Overall CQ	.652	.688
Years of Teaching	Metacognitive CQ	.940	.444
	Cognitive CQ	1.005	.409
	Motivational CQ	.490	.743
	Behavioural CQ	2.268	.068
	Overall CQ	.571	.684
Student Cultural Diversity	Metacognitive CQ	.128	.880
	Cognitive CQ	.388	.679

	Motivational CQ	.765	.468
	Behavioural CQ	.040	.961
	Overall CQ	.043	.958
Student Gender Diversity	Metacognitive CQ	.059	.943
	Cognitive CQ	.643	.528
	Motivational CQ	.452	.638
	Behavioural CQ	1.250	.291
	Overall CQ	.379	.686
Cross-Cultural Interaction	Metacognitive CQ	2.470	.090
	Cognitive CQ	.006	.994
	Motivational CQ	3.755	.027
	Behavioural CQ	.319	.728
	Overall CQ	.884	.417
International Work	Metacognitive CQ	.246	.621
	Cognitive CQ	.927	.338
	Motivational CQ	.041	.839
	Behavioural CQ	.784	.378
	Overall CQ	.030	.862
International Travel	Metacognitive CQ	.814	.519
	Cognitive CQ	2.232	.072
	Motivational CQ	.210	.932
	Behavioural CQ	3.265	.015
	Overall CQ	1.708	.155
Training	Metacognitive CQ	2.094	.151
	Cognitive CQ	4.332	.040*
	Motivational CQ	1.914	.170
	Behavioural CQ	19.443	.000*
	Overall CQ	9.529	.003*
*Significance at the 0.05 level			

Table 11

Multivariate Tests – E-CQS (Da Silva, 2015)

Effect	Wilk's' Lambda	F	Sig.
Age	.343	1.088	.286
Race	.342	2.297	.000
Home Language	.166	1.264	.035
Total Languages Spoken	.297	1.695	.001
Years of Teaching	.517	1.334	.086
Student Cultural Diversity	.649	1.780	.023
Student Gender Diversity	.782	.962	.514
Cross-cultural Interaction	.564	2.445	.001
International Work	.811	1.720	.083
International Travel	.598	1.018	.445
Training	.733	2.683	.005

Table 12

Tests of Between-Subjects Effects – E-CQS (Da Silva, 2015)

Source	Dependent Variable	F	Sig.
Age	Intrinsic Motivation	1.057	.400
	Extrinsic Motivation	2.740	.009
	Self-Efficacy to Adjust	1.023	.424
	Motivational CQ	1.853	.077
	Culture General Knowledge	1.374	.219
	Context-Specific Knowledge	1.114	.362
	Cognitive CQ	1.291	.258

	Planning	1.790	.089
	Awareness	1.756	.096
	Checking	.907	.514
	Metacognitive CQ	1.569	.145
	Speech Acts	1.855	.077
	Verbal Behavior	2.234	.032
	Non-Verbal Behavior	1.721	.104
	Behavioural CQ	2.035	.051
	Overall CQ	1.936	.064
Race	Intrinsic Motivation	.937	.446
	Extrinsic Motivation	3.330	.014
	Self-Efficacy to Adjust	3.194	.017
	Motivational CQ	2.356	.060
	Culture General Knowledge	1.056	.383
	Context-Specific Knowledge	1.355	.256
	Cognitive CQ	1.317	.270
	Planning	1.455	.222
	Awareness	1.319	.269
	Checking	1.187	.322
	Metacognitive CQ	1.146	.340
	Speech Acts	.287	.886
	Verbal Behavior	.983	.421
	Non-Verbal Behavior	.302	.876
	Behavioural CQ	.368	.831
	Overall CQ	.586	.673
Home Language	Intrinsic Motivation	1.432	.166
	Extrinsic Motivation	2.138	.022
	Self-Efficacy to Adjust	1.942	.039
	Motivational CQ	2.028	.030
	Culture General Knowledge	.729	.719
	Context-Specific Knowledge	1.385	.188

	Cognitive CQ	1.110	.362
	Planning	2.351	.011
	Awareness	1.304	.230
	Checking	.560	.868
	Metacognitive CQ	1.364	.198
	Speech Acts	.969	.484
	Verbal Behavior	1.594	.107
	ECQS Non-Verbal Behavior	.567	.863
	ECQS Behavioural CQ	.931	.520
	ECQS Overall CQ	1.482	.145
Total Languages Spoken	ECQS Intrinsic Motivation	.069	.999
	ECQS Extrinsic Motivation	.364	.900
	ECQS Self-Efficacy to Adjust	.508	.801
	ECQS Motivational CQ	.181	.981
	ECQS Culture General Knowledge	1.955	.080
	ECQS Context-Specific Knowledge	1.666	.138
	ECQS Cognitive CQ	1.580	.162
	ECQS Planning	1.299	.266
	ECQS Awareness	.983	.441
	ECQS Checking	.642	.697
	ECQS Metacognitive CQ	.889	.506
	ECQS Speech Acts	.805	.569
	ECQS Verbal Behavior	1.254	.286
	ECQS Non-Verbal Behavior	.222	.969
	ECQS Behavioural CQ	.601	.729
	ECQS Overall CQ	.582	.744
Years of Teaching	ECQS Intrinsic Motivation	.516	.724
	ECQS Extrinsic Motivation	1.457	.222
	ECQS Self-Efficacy to Adjust	.598	.665
	ECQS Motivational CQ	.437	.782
	ECQS Culture General Knowledge	1.439	.228

	ECQS Context-Specific Knowledge	2.267	.068
	ECQS Cognitive CQ	1.989	.103
	ECQS Planning	1.945	.110
	ECQS Awareness	.110	.979
	ECQS Checking	.224	.924
	ECQS Metacognitive CQ	.621	.649
	ECQS Speech Acts	.637	.637
	ECQS Verbal Behavior	.744	.565
	ECQS Non-Verbal Behavior	.784	.539
	ECQS Behavioural CQ	.762	.552
	ECQS Overall CQ	.868	.487
Student Cultural Diversity	ECQS Intrinsic Motivation	2.173	.120
	ECQS Extrinsic Motivation	.968	.384
	ECQS Self-Efficacy to Adjust	1.261	.288
	ECQS Motivational CQ	.716	.491
	ECQS Culture General Knowledge	.644	.527
	ECQS Context-Specific Knowledge	.884	.417
	ECQS Cognitive CQ	.841	.435
	ECQS Planning	.449	.640
	ECQS Awareness	.592	.555
	ECQS Checking	.643	.528
	ECQS Metacognitive CQ	.047	.954
	ECQS Speech Acts	.690	.504
	ECQS Verbal Behavior	.090	.914
	ECQS Non-Verbal Behavior	.111	.895
	ECQS Behavioural CQ	.127	.881
	ECQS Overall CQ	.271	.763
Student Gender Diversity	ECQS Intrinsic Motivation	.207	.813
	ECQS Extrinsic Motivation	.092	.912
	ECQS Self-Efficacy to Adjust	1.109	.334
	ECQS Motivational CQ	.283	.754

	ECQS Culture General Knowledge	1.763	.177
	ECQS Context-Specific Knowledge	1.547	.219
	ECQS Cognitive CQ	1.817	.168
	ECQS Planning	1.068	.348
	ECQS Awareness	.088	.916
	ECQS Checking	.158	.854
	ECQS Metacognitive CQ	.197	.821
	ECQS Speech Acts	.361	.698
	ECQS Verbal Behavior	1.546	.219
	ECQS Non-Verbal Behavior	.268	.766
	ECQS Behavioural CQ	.642	.529
	ECQS Overall CQ	.839	.436
Cross-Cultural Interaction	ECQS Intrinsic Motivation	8.076	.001*
	ECQS Extrinsic Motivation	.249	.780
	ECQS Self-Efficacy to Adjust	.874	.421
	ECQS Motivational CQ	2.782	.067
	ECQS Culture General Knowledge	1.182	.311
	ECQS Context-Specific Knowledge	1.620	.203
	ECQS Cognitive CQ	.025	.975
	ECQS Planning	.632	.534
	ECQS Awareness	1.053	.353
	ECQS Checking	1.747	.180
	ECQS Metacognitive CQ	1.279	.283
	ECQS Speech Acts	.114	.893
	ECQS Verbal Behavior	1.456	.239
	ECQS Non-Verbal Behavior	1.109	.334
	ECQS Behavioural CQ	.778	.462
	ECQS Overall CQ	1.235	.296
International Work	ECQS Intrinsic Motivation	.252	.617
	ECQS Extrinsic Motivation	8.700	.004
	ECQS Self-Efficacy to Adjust	4.018	.048

	ECQS Motivational CQ	4.198	.043
	ECQS Culture General Knowledge	1.168	.283
	ECQS Context-Specific Knowledge	.877	.352
	ECQS Cognitive CQ	1.114	.294
	ECQS Planning	.003	.956
	ECQS Awareness	.080	.777
	ECQS Checking	.011	.916
	ECQS Metacognitive CQ	.012	.912
	ECQS Speech Acts	3.100	.082
	ECQS Verbal Behavior	2.414	.124
	ECQS Non-Verbal Behavior	1.081	.301
	ECQS Behavioural CQ	2.394	.125
	ECQS Overall CQ	1.961	.165
International Travel	ECQS Intrinsic Motivation	.368	.831
	ECQS Extrinsic Motivation	1.346	.259
	ECQS Self-Efficacy to Adjust	.538	.708
	ECQS Motivational CQ	.737	.569
	ECQS Culture General Knowledge	1.585	.185
	ECQS Context-Specific Knowledge	1.973	.105
	ECQS Cognitive CQ	1.867	.123
	ECQS Planning	1.665	.165
	ECQS Awareness	.977	.424
	ECQS Checking	1.343	.260
	ECQS Metacognitive CQ	1.489	.212
	ECQS Speech Acts	3.748	.007
	ECQS Verbal Behavior	5.208	.001
	ECQS Non-Verbal Behavior	2.834	.029
	ECQS Behavioural CQ	4.286	.003
	ECQS Overall CQ	2.573	.043
Training	ECQS Intrinsic Motivation	1.037	.311
	ECQS Extrinsic Motivation	1.517	.221

ECQS Self-Efficacy to Adjust	.890	.348
ECQS Motivational CQ	1.486	.226
ECQS Culture General Knowledge	4.493	.037
ECQS Context-Specific Knowledge	11.413	.001*
ECQS Cognitive CQ	8.507	.004*
ECQS Planning	8.522	.004*
ECQS Awareness	8.260	.005*
ECQS Checking	3.268	.074
ECQS Metacognitive CQ	7.660	.007
ECQS Speech Acts	6.528	.012
ECQS Verbal Behavior	10.742	.001*
ECQS Non-Verbal Behavior	7.070	.009
ECQS Behavioural CQ	9.173	.003*
ECQS Overall CQ	9.023	.003*

*Significance at the 0.05 level

Impact of Teaching Experience on Cultural Competence

Descriptive statistics for both groups of teachers, those who have been teaching for less than 15 years (n = 61) and those who have been teaching for more (n = 78), can be seen in Table 13. Results indicate that teachers who have been teaching longer have higher overall CQ (M = 6.82, SD = 1.54) than those who have been teaching for less years (M = 4.83, SD = 0.73). Interestingly, teachers who have been teaching for fewer years show higher metacognitive CQ (M = 5.48, SD = 0.97) and motivational CQ (M = 5.51, SD = 0.97) than teachers who have been teaching longer that show higher degrees of cognitive CQ (M = 5.80, SD = 1.00) and Behavioural CQ (M = 5.60, SD = 1.09). Pearson's partial correlational analysis depicted no significant correlation between CQ

and years of teaching experience whilst controlling for international experience (see

Table 14).

Table 13

Descriptive Statistics for Teaching Experience

	</= 15 Years		> 15 Years	
	M	**SD**	**M**	**SD**
CQS Overall CQ	4.83	0.73	6.86	1.54
CQS Metacognitive CQ	5.48	0.97	5.02	0.92
CQS Cognitive CQ	4.01	1.00	5.80	1.00
CQS Motivational CQ	5.51	0.95	4.32	1.29
CQS Behavioural CQ	4.34	1.29	5.60	1.09

Table 14

Comparative Correlational Analysis between CQ and Teaching Experience

Control Variables			</= 15 Years	> 15 Years
International Travel	Age	Correlation	1.00	1.00
		Sig (2-tailed)	.	.
	Overall CQ	Correlation	0.02	-0.01
		Sig (2-tailed)	.86	.92
	Metacognitive CQ	Correlation	-0.00	-0.02
		Sig (2-tailed)	.97	.85
	Cognitive CQ	Correlation	-0.00	-0.01
		Sig (2-tailed)	.98	.95
	Motivational CQ	Correlation	-0.11	-0.02
		Sig (2-tailed)	.43	.89
	Behavioural CQ	Correlation	0.14	0.01
		Sig (2-tailed)	.30	.97

Chapter IV

Discussion

The purpose of this study was to assess if South African teachers are displaying cultural competence when teaching multi-cultural youth. The study first examined the degree of CQ in teachers. Thereafter, it assessed which dimensions of CQ are higher in teachers according to i) the four factor model as outlined by Earley and Ang (2003) and ii) the eleven factor model of CQ developed by Van Dyne et al. (2012). Next, the study aimed to investigate the feasibility of using the adapted version of the E-CQS (Da Silva, 2015) as a measure of CQ within a South African sample. Focus was placed on whether similar findings were achieved when comparing results between the CQS and the adapted version of the E-CQS. The study also investigated what factors contribute toward the development of CQ in South African teachers. Finally, this study aimed to assess if years of teaching experience impacted CQ amongst teachers whilst controlling for international experience.

After considering the importance of CQ amongst teachers and the impact that increased CQ may have on performance outcomes, the findings from this study provide initial evidence for what factors predict CQ in South African teachers and how we may foster its development. Further, findings contribute to the literature validating the use of the adapted E-CQS within the South African population, thus allowing for a more detailed understanding of cultural competence.

In examining the degree of overall cultural competence in teachers similar results were obtained by both the CQS and the adapted E-CQS (discussions will now refer to the adapted version of the E-CQS as simply the E-CQS). Teachers were found to have an

61

above average score of overall CQ, surpassing the 75th percentile. These results are consistent with the hypothesis that South African teachers working in culturally diverse classrooms have higher levels of overall CQ. Results may be attributable to continual interaction within a multicultural environment, considering the cultural diversity of the South African population. Further, the majority of teachers reported frequent cross-cultural interaction with students and a highly culturally diverse student body. However, the study cannot ascertain that the above average score is only attributable to diverse student interaction within the educational setting.

A further explanation for the above average score of overall CQ seen in the teachers may be that many South Africans embrace the moral philosophy of Ubuntu – *I am because you are*. More philosophically, it is a belief in a universal bond of sharing that connects all humanity or is seen as humanity towards others (Gade, 2011). Embracing Ubuntu may in itself lend towards increased cultural competence and could be a potential avenue of further study.

CQ scores are comparable to an international population used to validate the assessment measure. In considering the fact that overall CQ in South African teachers is above average in comparison to the international population, it becomes subjective as to whether this score meets the standards of cultural competence that are required by our teachers. Teachers are attributed with the huge responsibility of being thought leaders and game changers, at the forefront of transformation and cultural inclusivity. They impart not only knowledge but also a manner of thinking and interacting. If teachers continually engage in culturally relevant teaching strategies it may be argued that this would implicitly teach students to engage in their own culturally relevant thinking strategies

when faced with any new learning experience or interaction. If this assumption is correct it would support the notion that slightly above average cultural competence is not good enough. Further, higher levels of CQ amongst teachers is associated with increased academic performance amongst students, amid many other benefits or positive outcomes (Gehlbach, 2014; Johnson et al., 2013; Gay, 2010; Delpit, 1995; Lipman, 1995; Maiga, 1995; Shujaa, 1995; Tate, 1995). As such it is arguable that no ceiling should exist for CQ.

Future studies could focus on whether CQ in teachers predicts CQ in students. As CQ refers to a manner of effective cross-cultural interaction, one may argue that constant engagement with students in a particular manner would inadvertently teach a similar style in response.

Motivational CQ was found to be the highest dimension of CQ within the sample of teachers. Thus, South African teachers depict increased capability to direct energy and attention towards learning about and functioning within situations characterized by cultural differences (Ang & Van Dyne, 2008). This finding was not consistent with the study's' hypothesis which predicted that both cognitive CQ and metacognitive CQ would be the highest dimensions of CQ found in South African teachers. Deci and Ryan (1985) suggest that whilst more tangible benefits are generally the driving force motivating an individual to do something, when it comes to cultural competence, one needs higher intrinsic interest for motivational CQ to be sustainable. For this reason it is interesting to see that intrinsic motivation was higher than extrinsic motivation in teachers. Further, the highest sub-dimension of motivational CQ was self-efficacy to adjust. Thus, teachers show an increased ability to deal with the stresses associated with adjusting to a cross-

cultural experience. One reason for this may be that teachers by nature have the challenge of presenting coursework to students to which they generally have had no prior exposure to. This in turn may foster resilience within the teacher as well as the ability to adjust to each new student they face. These skills may be transferable to cross-cultural adjustment. Future research could focus on assessing whether the traits needed to adjust to new situations successfully become stable personality traits that transcend a multitude of different challenges or whether they are unique to the type of challenge faced.

It must be noted that whilst a high degree of motivational CQ in teachers is desired, the teachers themselves may be aware of this. Prejudice is generally not an acceptable trait, as such, this finding may be due to increased social desirability effects. Many psychometric tests have built in social desirability scales that detect the user's level of honesty, however this is lacking in both the CQS and the E-CQS. Whilst future research could focus on adding this adaptation, one may also consider the use of the Implicit Association Test (IAT). The IAT assesses the strength of an individual's subconscious associations between various concepts held in memory. It is generally used to examine implicit biases or stereotypes that may not be outwardly apparent (Greenwald, 1998). Comparative analysis between results obtained by the IAT and the CQS/E-CQS may provide essential insights into whether the CQS/E-CQS is highly amenable to social desirability effects and to what extent results may be trusted.

Cognitive CQ, a knowledge of practices, norms and conventions in different cultures acquired from educational and personal experience (Ang and Van Dyne, 2008) was noted as the lowest dimension of CQ on both the CQS and the E-CQS. Although still above average, it is only slightly, which is also in contrast to the first hypothesis which

predicted it would be the highest dimension of CQ seen in teachers. Thus, whilst teachers may be motivated in directing attention towards cross-cultural interactions, they do not possess the same degree of knowledge pertaining to different cultures. Interestingly, of the sub-dimensions of cognitive CQ, culture general knowledge was lower than that of context-specific knowledge. As such, teachers have more of an insider understanding of a specific culture than a knowledge which provides a way of understanding differences that can be applied to any cultural group encountered. Further, context-specific knowledge refers to knowledge of particular characteristics that generally belong to a certain culture and as such may not be an aspect of CQ that is directly translatable to a culture that has yet to be encountered. In contrast, culture general knowledge may be. An explanation for this finding may be the highly multi-cultural nature of the South African population. Not only is there constant interaction amongst individuals who speak one of eleven official languages but the country as a whole suffered a rich history of Apartheid and Xenophobia. Whilst controversial topics, this in itself could be argued to lend the population towards being thoroughly aware of the cultural differences that exist in South Africa. It may be of value to foster the development of culture general knowledge so that the cognitive CQ may be universal.

In order to establish the feasibility of using the adapted version of the E-CQS (Da Silva, 2015) as a measure of cultural competence in South Africa, two steps were taken. First, internal consistency was assessed to determine reliability of the measure and secondly, a comparison was made between results achieved by the CQS (Ang et al., 2007) and the E-CQS (Da Silva, 2015). Internal consistency was established for both measures suggesting that both measures may be used reliably within the South African

population. Further, findings validate the use of the adapted version of the E-CQS (Da Silva, 2015). This has implications for reducing any cultural bias that may have existed in the original version of the measure and provides more accurate results allowing for more reliable interpretations of cultural competence in South Africans.

Further, significant positive correlations were found between results obtained on both the CQS and the E-CQS. More specifically, strong correlations were observed in overall CQ, motivational CQ and behavioural CQ. Paired sample t-tests showed small differences in scores for each dimension between measures, however, no significant difference in the mean scores was obtained for behavioural CQ. Further, in examining net differences, CQS scores were on average higher than scores obtained by the ECQS, excluding behavioural CQ. Thus, one may conclude that whilst highly correlated, there was no statistical difference in the two scores obtained for behavioural CQ. As such, when considering the interchangeable use of the two measures, behavioural CQ will likely yield the most similar results. In addition, the three sub-dimensions of behavioural CQ (verbal behaviour, non-verbal behaviour and speech acts) may be argued to contribute more accurately to overall behavioural CQ than the other sub-dimensions and their associated dimension when comparing the expanded measure to its original form. These results provide additional validation for the adapted version of the E-CQS and the accompanying expanded conceptualisation of cultural intelligence. Results clearly support the hypothesis that similar findings will be identified by both measures, thus further validating the use of the E-CQS within South Africa population.

A thorough literature review was conducted to investigate what factors may contribute towards the development of cultural competence. Thereafter the study assessed

the effects of these variables on CQ in teachers. I hypothesized that the following factors would each contribute towards increased cultural competence amongst teachers: increased interaction with diverse students, a highly multicultural classroom, increased years of teaching experience, international travel, increased language ability and training in cultural sensitivity. Of these factors, only training in cultural sensitivity was found to have a significant effect on CQ. More specifically, both the CQS and the E-CQS identified training in cultural sensitivity, cultural competence and/or culturally relevant teaching strategies as a potential contributing variable towards the development of cognitive CQ, behavioural CQ and overall CQ.

In considering cognitive CQ, the E-CQS further identified significant effects between training and context-specific knowledge. Thus, the training may have provided information regarding specific cultures that led to a more emic understanding of the cultures teachers interact with. An increase in cognitive CQ affords the individual an ability to discern differences and similarities between cultures. This may be the first step in understanding that when it comes to new information, different cultures conceptualise, understand and translate this understanding into thought and behaviour differently (Ang et al., 2007), a key insight for teachers.

Training was also seen to have a significant effect on behavioural CQ and more specifically verbal behaviour or flexibility in adjusting one's verbal communication tactics to suit the practices of a different culture. No significant effects were found for either non-verbal behaviour or speech acts (flexibility in communicating specific types of messages based on local standards, such as apologies), both of which may be considered integral aspects of cross-cultural interactional effectiveness (Van Dyne et al., 2012).

Thus, training programs may offer insight into how to adjust one's verbal communication tactics to suit the practices of a different culture. However, it lacks the ability to impact appropriate body language when interacting with a new culture, as well as how specific types of messages should be conveyed based on local cultural standards. This finding may be due to the fact that training programs are generally short-term courses that focus on more immediate effects, such as appropriate verbal communication. The teachers reported training programs such as workshops, seminars and courses which formed part of teaching degree requirements. Altering ones non-verbal behaviour and speech acts may call for more intensive programs. Further, non-verbal behaviour is often governed by intrinsic beliefs and assumptions when interacting with another person. The training programs experienced by the teachers may not have had the goal of confronting these realities. Further, the study did not account for whether the teachers willingly engaged in these training programs or actively sought them out. This impacts the degree to which the teachers would have been impacted by the coursework.

In considering why there were not significant differences between the other variables and CQ, various explanations may be offered. Exposure to a multicultural environment within one's own country has been correlated with increased CQ (Moon et al., 2013) and may be the reason for the increased CQ levels observed within the current sample. However, this factor alone may not be sufficient in contributing towards each dimension of CQ. One explanation may be that if participants exist in only one context, although multicultural by nature, they may not be continually exposed to new cultures or experiences, an integral aspect in the development of CQ (Earley and Ang, 2003). Further, the study did not account for individual inherent biases. Certain prejudicial

thinking may surely impact whether the increase in student cultural diversity, for instance, is a factor the participant deems desirable. This offers further support for the use of the IAT in future studies as a measure of implicit versus explicit CQ. An experience may be freely available, such as gaining knowledge of other cultures, but it is subjective as to whether an individual immerses themselves within it, offering an explanation as to why training had no significant impact on motivational CQ. A significant effect was however found between intrinsic motivation, a sub-dimension of motivational CQ, and increased cross-cultural interactions between teachers and students. This finding makes sense – if a teacher finds cross-cultural interactions intrinsically satisfying they are more likely to engage in them.

It is interesting to note that whilst training had no significant effect on metacognitive CQ, it was found to have an effect on two of its sub-dimensions, planning and awareness. The third sub-dimension of metacognitive CQ, checking, showed no significant effects. This may suggest that that whilst the training helps teachers actively strategize before a culturally diverse encounter and have a thorough awareness of how culture may impact a situation, it is failing to help teachers review their own assumptions and adjust them accordingly after an interaction differs from ones preconceived expectations (Van Dyne et al., 2012). Adjusting one's preconceived notions offers a sustainable change in thinking that may have overlapping effects on each of the other dimensions of CQ. Whilst training was not seen to impact metacognitive CQ or its sub-dimension of checking, the teachers were shown to have increased metacognitive CQ regardless, however, training programs could choose to focus on fostering this factor.

As investigating potential predictor variables of CQ was exploratory in nature, the findings may have been limited by the entry level nature of data collection. For instance, in assessing the relationship between international travel and CQ development in teachers, future research could focus on aspects such as the length of stay, nature of the experience and consistency of international travel. We may also consider the fact that even though international travel may be occurring, in contrast to expatriates or study-abroad programs that previous research has focused on, simply going on a holiday may not warrant the same need or motivation to understand the new culture and adapt to it. Further, superficial or transient interactions may not suffice the development of CQ. If we consider each of these factors in isolation and study them in depth perhaps this will yield more information regarding their impact on CQ.

Finally, the study found that teachers who have been teaching diverse students for longer had higher CQ scores. However, results did not support the hypothesis that this relationship exists after controlling for international travel. This would suggest that international travel may explain the increased CQ, however, this in contrast to findings within the present study which showed no significant effect of international travel on CQ. This most likely means that for those who have not traveled, more experience teaching diverse students contributed towards CQ. However, this did not add more predictive power over travel, as such, more experience with diversity, regardless of whether it is from teaching or from travel, is related to higher CQ.

The study does not address the specific reasons as to why teachers with more teaching experience have higher CQ, although one would naturally expect this result due to greater cumulative multicultural life experiences both in their classrooms and, as

previous research has indicated, when traveling abroad. Interestingly, results did indicate that beginning teachers with fewer years of teaching experience were higher in both metacognitive and motivational CQ. One explanation offered for this finding is that younger teachers are more likely to form part of the new generation of post-Apartheid South Africans that live in a more democratic and inclusive environment. Thus, for older teachers, their own experiences teaching diverse students and travelling abroad may bring them to higher CQ but among young teachers, changes in the social climate cultivating the social awareness needed for higher degrees of both motivational and metacognitive CQ may bring them to the same position of CQ. Further, results from the study indicated that training had a significant effect on planning and awareness, sub-dimensions of metacognitive CQ. This may suggest that the younger generation of teaching staff have had more exposure to cross-cultural training. Moreover, this finding supports the need for training.

<div align="center">General Discussion</div>

Given the lack of available research on the prevalence of cultural competence in South African teachers, this study provides initial insight into the degree of CQ that exists, as well as what impacts higher levels of CQ amongst our teachers. In addition to exploring a new avenue of research, this study also validated the use of a more culturally appropriate version of the E-CQS (Da Silva, 2015), initially created by Van Dyne et al. (2012). In the goal of fostering a learning environment devoid of cultural bias, it is important to make sure that every step taken in drawing conclusions, including the measures themselves, are culturally fair and reliable.

Further, the study highlighted the need for increased cultural competence in South African teachers. If we understand that a need exists and have a clear mechanism as to how to achieve this need, the goal becomes that much more attainable. One clear finding provided by this study was that training on cultural sensitivity, cultural competence and culturally relevant teaching strategies clearly impacts cultural intelligence amongst teachers. This provides a feasible starting point for how CQ may be developed.

Limitations and Future Research

The primary limitation of this study is that it was based on convenience sampling. Thus, the ability to generalize the findings to the entire South African population remains limited. However, the sample collected showed a relatively accurate representation of the current statistics of South African teachers, including the ratio of both gender and race in the teaching profession. As such, these factors may to some extent mitigate sampling bias effects. A further limitation with regards to sampling is the language of the measures used. South Africa is home to 11 official languages and many teachers were seen to speak languages other than English as their first or home language. Whilst using the adapted version of the E-CQS (Da Silva, 2015) mitigated cultural biases, the sample was still limited to schools in which the language of instruction was English. Although a huge undertaking, a potential avenue of future research could focus on translating the E-CQS or CQS to more commonly spoken languages in South Africa.

Finally, in considering the large number of variables that were investigated in this study (based on the large number of subscales on the E-CQS), the research may have benefited from a larger sample size. Gaining both access to schools and voluntary participation from teachers is a fairly difficult and lengthy process. Other methods such

as MTURK were considered, however it is not a widely recognized tool used by much of the public in South Africa. Further, in analyzing results, Bonferroni correction was employed to mitigate the small sample size and multiple tests run. Future research could focus on a manner in which to gain a larger sample size.

Due to the cross-sectional nature of the study, a further limitation is that inferences cannot be made regarding causality from the research outputs. However, the use of the multivariate analysis of variance as part of the statistical workup is a robust method of analysis which allowed for conclusions regarding impact or effect to be drawn, circumventing this limitation as much as possible. Further, cross-sectional studies are generally considered to be well-suited for correlational research aims. Future studies in which comparative analyses are conducted between groups exposed to one variable and a control, or which focus on a longitudinal design, may allow for causal inferences to be made.

As with most studies of this nature, the use of self-report measures always carries the risk of response bias. As previously suggested, one manner in to overcome this limitation is to make use of other methods of data collection such as the Implicit Association Test (IAT) to compare results between what has been explicitly reported in the self-report measures to more implicit associations. Further, future research could focus on implementing an honesty scale or social desirability scale with the measures. This is a common tool seen in psychometric testing that allows for the researcher to ascertain the degree to which the respondent has been honest in their response.

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