

Exploring the Impact of Cross-Cultural Management Education on Cultural Intelligence, Student Satisfaction, and Commitment

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Increasing globalization, workforce mobility, and international assignments are creating demand for culturally adept employees. While developing these employees begins in the classroom, educators are experiencing difficulties motivating students to learn intercultural competences. Cultural intelligence (CQ) training may be one way to increase their competencies, as well as their commitment to and satisfaction with a cross-cultural management (CCM) course. As an extension to the AMLE 2013 Special Issue “Cross-Cultural Management Learning and Education—Exploring Multiple Aims, Approaches, and Impacts,” we utilized a quasi-experimental design to survey 152 MBA students taking a CCM course. We also included a pre- and posttest along with a control group. The purpose of this study was to see whether CQ can be learned in the classroom, and if so, what are the consequences? Results revealed that students taking the CCM course increased their CQ and that CQ was positively related to their commitment to and satisfaction with their course. Furthermore, students who increased their level of CQ were more satisfied at the end of the course than those whose CQ level did not change.

Increasing globalization, workforce mobility, and international assignments are creating demand for culturally adept employees (Eisenberg et al., 2013; Joy & Poonamallee, 2013). Yet educators are experiencing difficulty motivating future employees to learn these intercultural competences (Mendenhall, Arnardottir, Oddou, & Burke, 2013). Cultural intelligence (CQ) training in the classroom may be one possible solution. CQ education encompasses the necessary mental, motivational, and behavioral competencies needed to develop interested and competent students who are considering a career

in global management (MacNab, 2012). Recently, business schools have begun to incorporate CQ training into cross-cultural management (CCM) courses in an attempt to educate their students in the areas of cultural competence (Eisenberg et al., 2013; Joy & Poonamallee, 2013; Mosakowski, Calic, & Earley, 2013). Although CQ research is on the rise, it has yet to address how the level of CQ impacts student satisfaction and commitment to international business studies. Furthermore, does a change in one's level of CQ over time affect those two outcomes?

Our purpose here is to extend the CQ education research stream in three ways. First, we examine whether CQ affects student satisfaction and commitment to international business studies. Second, we test whether a *change* in CQ over the course of

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a semester affects satisfaction and commitment to international business studies. Last, we extend the theoretical basis for CQ research by incorporating social cognitive career theory (SCCT) into the CQ education research stream (Lent, Brown, & Hackett, 1994). In summary, we aim to address the call for more empirical studies that explore the impact that CCM education has on the development of CQ (Eisenberg et al., 2013; Erez, Lisak, Harush, Glikson, Nouri, & Shokef, 2013), and whether CQ affects satisfaction and commitment to the study of international business (IB).

The results are of particular importance for business education because the process of nurturing future effective global managers begins in the classroom (Ang, Van Dyne, & Koh, 2006). Successful CQ training may result in culturally competent students that are both satisfied and committed to their international role. These students may be motivated to embrace the challenges associated with a globalized work environment (Lent, Paixão, Silva, & Leitão, 2010).

The remainder of this article is composed of four sections. First, we present a literature review of CQ, CQ education, academic satisfaction, and academic commitment. Then, we discuss the theoretical underpinnings of CQ, which is followed by the hypotheses development. Next is the Methods section, where we introduce the quasi-experimental design and the measures used in the survey. That section also includes the survey results of 281 students based in the United States. Last, we conclude with a discussion of the theoretical and practical implications, as well as the limitations of the study.

LITERATURE REVIEW

Cultural Intelligence

Ang and Van Dyne (2008: 3) define CQ as "the capability of an individual to function effectively in situations characterized by cultural diversity." CQ is a construct that incorporates several existing concepts and frameworks that are focused on those abilities and skills that allow the individual to effectively interact with others in cross-cultural settings and situations (Earley & Ang, 2003; Thomas & Inkson, 2004).

Four components comprise CQ: meta-cognitive, cognitive, motivational, and behavioral (Ang et al., 2007). *Meta-cognitive CQ* refers to the capability of processing information during and after a culturally diverse experience. *Cognitive CQ* focuses on the

available knowledge of norms, practices, and customs in different cultures. *Motivational CQ* reflects the drive and willingness to seek out and participate in intercultural experiences and to be motivated to learn more about cultural differences. *Behavioral CQ* refers to the ability to participate in appropriate verbal and nonverbal actions in intercultural settings. A detailed review of each component and their outcomes is beyond our scope here (see Magnusson, Westjohn, Semenov, Randrianasolo, & Zdravkovic, 2013, for a recent review).

CQ stems from the theory of multiple intelligences (Gardner, 1983), which includes interpersonal and intrapersonal intelligences. The theory of multiple intelligences includes cognitive intelligence (IQ), social intelligence (SQ; Cantor & Kihlstrom, 1989; Goleman, 2006), and emotional intelligence (EQ; Boyatzis & McKee, 2005; Goleman, 1995; Goleman, Boyatzis, & McKee, 2001). Cultural intelligence is suggested to be one component of intelligence and complementary to IQ or EQ, as neither cognitive intelligence nor emotional intelligence include the understanding of cross-cultural settings (Rockstuhl, Seiler, Ang, Van Dyne, & Annen, 2011; Van Dyne, Ang, & Koh, 2008). Furthermore, in contrast to emotional intelligence, CQ is not culture-bound but constitutes a culture-free ability that transfers across cultures and various cultural circumstances (Ang, Van Dyne, & Tan, 2011; Ng & Earley, 2006).

CQ is a malleable competence or statelike individual difference (Earley & Ang, 2003; Ng & Earley, 2006), which can be enhanced by exposure to different cultures (Crowne, 2008; Triandis, 2006). One can also improve CQ with training and active participation in intercultural experiences, such as international assignments, study abroad, and travel (Ng, Van Dyne, & Ang, 2009).

CQ research has also focused on its outcomes (dependent variables). Higher levels of CQ permit the individual to perform in-the-moment modifications in a cross-cultural context (MacNab, 2012). Furthermore, CQ has been suggested to be a key element of successful interactions in international markets (Alon & Higgins, 2005), such as cultural adaptation (Templer, Tay, & Chandrasekar, 2006), adjustment (Lee & Sukoco, 2010), leadership effectiveness (Rockstuhl, Seiler, Ang, Van Dyne, & Annen, 2011), cross-cultural negotiation (Imai & Gelfand, 2010), innovation (Elenkov & Manev, 2009), and performance (Chen, Lin, & Sawangpattanakul, 2011). Considering the importance of the described outcomes for individuals and firms, CQ training that takes advantage of the malleability of CQ could be

an important element of a cross-cultural management strategy.

Historically, CQ researchers have focused on expatriates and global managers as their subjects (e.g., Moon, 2010; Rockstuhl et al., 2011). More recently, CQ research has permeated the classroom to elucidate its nurturing effect on future professionals operating in an international setting (MacNab, 2012). Subsequently, business schools have begun to implement educational programs that enhance the students' intercultural competencies (Eisenberg et al., 2013). These programs prepare students to succeed in the demanding and challenging global workplace (Mosakowski et al., 2013). Next we discuss CQ education in more detail.

CQ Education

Cross-cultural training has historically been based on country-specific knowledge, yet often proves inadequate for three reasons (Earley & Peterson, 2004): First, traditional training programs tend to rely on the cognition (knowledge) part too heavily. The issue is that they don't provide the learning skills associated with the metacognitive dimension. Second, these approaches assume a strong link between national cultural values and behaviors of individuals from those cultures (Egan & Bendick, 2008). Values represent only one of many factors that influence one's behaviors (Gelfand, Erez, & Aycan, 2007). Last, not enough attention has been paid to understand what type of training each individual needs. This problem was partially solved by experiential learning theory and the concept of learning spaces (see Kolb & Kolb, 2005, for an extensive review). The CQ model attempts to address these deficiencies by extending training modules based on the cognitive component to include the meta-cognition, motivational, and behavioral elements.

Metacognitive CQ training addresses these different learning strategies in the way that cognitive CQ training addresses the content differences. Motivational CQ provides the confidence to persist when trying to determine the basis of experienced differences. Behavioral CQ guides appropriate ways of interacting with others from different cultures (Earley & Peterson, 2004).

CQ educators develop the capacities and competencies required for effective cultural interaction (MacNab, 2012). As aforementioned, an increasing

number of studies have been conducted to understand how students become more culturally adept as well as how educators teach cross-cultural competencies. Evidence of the importance to business education is further augmented by a 2013 special issue dedicated to the topic in the *Academy of Management Learning and Education*.

Yet, relatively few empirical studies have focused on CQ education in the classroom (Eisenberg et al., 2013). For example, Gannon and Poon (1997) established that cultural awareness of students can be increased through cross-cultural training by way of integrative, video-based, and experiential methods. Similarly, Sizoo, Serrie, and Shapero (2007) demonstrated that a combination of in-class and at-home exercises increases intercultural sensitivity. More recently, MacNab (2012) examined a 7-step process to effectively teach CQ. He found that long-term training positively influenced the meta-cognitive and behavioral aspects of CQ in an 8-week course. He suggested that the process should start with a basic cultural awareness, which is located in the cognitive aspect of CQ, and this would assist the individual in adapting and changing their behavior appropriately. Eisenberg et al. (2013) extended upon the MacNab (2012) study by reducing the time of cultural training and adding a control group to the study. The authors discovered that CQ was higher after students participated in even a short cross-cultural management course. In addition, the short course did not have to be primarily focused on experiential learning, as is often prescribed.

As part of the aforementioned special issue on cross-cultural learning, Erez et al. (2013) tested the effect of students' CQ development, global identity, and local identity when working in online multinational teams over a period of 4 weeks. The authors found that CQ and global identity significantly increased over time, and that effect lasted for 6 months after the project's end. In addition, Rosenblatt, Worthley, and MacNab (2013) examined the relationship between participants' perception of optimal cross-cultural contact and CQ development, and found that the relationship is mediated by the experience of expectancy disconfirmation. When a person experienced more disconfirmation, the individual had more CQ development. Last, Taras et al. (2013) studied global virtual teams while they collaborated on international management coursework over 2 months. They discovered that participants' CQ and understanding of challenges associated with global virtual collaboration

improved following the collaboration. Our work extends the rich work that was recently done by focusing on affective outcomes (i.e., commitment and satisfaction) of CQ education. Now, we turn to academic satisfaction.

Academic Satisfaction

Satisfaction captures the attitude and positive emotional state reflecting an affect response, reaction, or appraisal of an individual toward an experience conveying the meaning of success (Judge & Hurst, 2008; Locke, 1976). In general, researchers focus on job satisfaction due to its significant correlation with work results (Harrison, Newman, & Roth, 2006). Job satisfaction has many antecedents, such as job design and social information processing (Carsten & Spector, 1987). Also, contextual, personality, and combined approaches have all been shown to positively influence job satisfaction (Baker, 2004).

Although stemming from distinct literature streams, *academic satisfaction* can be defined as the pleasure of one's experience or role as a student in a particular field (Lent, Singley, Sheu, Schmidt, & Schmidt, 2007). It is generally based on the fulfillment of academic goals or aspirations (Kumar & Dileep, 2006). Academic satisfaction overlaps with the job satisfaction construct (Lent et al., 2007). For example, Tranberg, Slane, and Ekeberg (1993) conducted a meta-analysis and found that the effect size as a function of settings (i.e., academic or professional) did not differ. Similarly, Lent (2004) suggested that work and academic satisfaction share comparable antecedents. Factors such as personality type (Gade, Fuqua, & Hurlburt, 1988), calling (Duffy, Allan, & Dik, 2011), learning approaches (Sheard & Golby, 2007), goal progress (DeShields, Kara, & Kaynak, 2005), development of skills (Lizzio, Wilson, & Simons, 2002), self-efficacy (DeWitz & Walsh, 2002), and environmental support (Lent et al., 2007) are suggested to influence academic satisfaction. Although academic satisfaction might be an important end in itself, it is related to important outcomes such as educational persistence, reduced withdrawal from the chosen course of study (Lent et al., 2007), and life satisfaction (Lent, Taveira, Sheu, & Singley, 2009). In summary, academic satisfaction can be considered an important component when analyzing students' abilities, interests, and skill formation. Another essential component in the context of academics is academic commitment, which is discussed next.

Academic Commitment

Similar to satisfaction, *commitment* has been frequently discussed in relation to work and work outcomes and is generally defined as the "strength of an individual's identification with and involvement in a particular organization" (Porter, Steers, Mowday, & Boulian, 1974: 604). Commitment represents a stable and long-term affective state of psychological attachment to a certain group, organization, or even interest (Porter et al., 1974). Employees are inclined to develop commitment to an organization to the extent that it correlates with their goals (Angle & Perry, 1981; Malhotra, Budhwar, & Prowse, 2007). In particular, personal characteristics (Johnson & Yang, 2010), work experience (Meyer & Allen, 1997), organizational investment (Meyer & Allen, 1997), self-efficacy (Judge, Locke, & Durham, 1997), and cultural perspectives (Chen & Indartono, 2011) have been established as antecedents of organizational commitment.

In the context of academia, commitment relates to the psychological attachment of students to the institution, academic processes, and majors, or domain-specific interests (Metzner & Bean, 1987). Thus, academic commitment reflects the priority, willingness, and personal importance that students assign to their studies relative to other choices that occupy their time, resources, or energy in the pursuit of scholarly success (Khoshaba & Maddi, 2005; Sheard & Golby, 2007). Accordingly, such a deep involvement encourages students to invest extra time and efforts to meet academic goals (Sheard & Golby, 2007). Academic commitment has been shown to be related to educational goals, occupational certainty, faculty support, and increased study time (Metzner & Bean, 1987). Furthermore, Sheard and Golby (2007) found that academic commitment significantly relates to academic performance. Thus, similar to academic satisfaction, academic commitment is an important outcome when students set goals and exert efforts to strengthen their skills. In the following section, we turn to a potential theoretical underpinning of CQ.

Theoretical Foundation of Social Cognitive Career Theory

Previous CQ studies have often been based on social learning theories. In particular, experiential learning theory (e.g., MacNab, 2012), which establishes the effectiveness of direct experience and reflection on building knowledge has been utilized

(Kolb, 1984). In the context of CQ, direct experience and reflections may be enhanced through interactions with students from other cultures and teacher feedback (MacNab, 2012).

Experiential learning approaches are suggested to improve the motivational and behavioral component of CQ due to their interactional and emotional focus (MacNab, 2012). In contrast to MacNab (2012), Eisenberg et al. (2013) used a more traditional academic approach for CQ training. The authors found that the meta-cognitive and cognitive components of CQ improved when the teachers lecture in class and the students study by reading. No effects were found for the motivational or behavioral CQ components. Although experiential learning theory (or similar social learning approaches) and traditional academic training are valuable in explaining how teaching affects CQ, these learning theories may not explain possible attitudinal outcomes of CQ training. Social-cognitive career theory may extend current CQ education research by focusing on the attitudes of students, such as satisfaction with and commitment to their respective studies, rather than CQ's antecedents and malleability.

Lent et al. (1994) outlined the comprehensive SCCT framework grounded in social-cognitive theory (Bandura, 1986). The framework outlined the processes involved in (1) the development of vocational and academic interests, (2) the making of vocational and academic choices, (3) the achievement of varying levels of success in educational and work pursuits, and (4) the development of satisfaction and other aspects of educational adjustment (Lent & Brown, 2006; Lent et al., 1994). Coherent with Bandura's social-cognitive theory (1986), SCCT emphasizes the *interaction* of person, environment, and behavior (Cupani, Pérez, Pautassi, & de Minzi, 2010) and is based on self-efficacy beliefs. *Self-efficacy* is the confidence in one's abilities to master tasks and accomplish goals. It is associated with performance, motivation, effort, and emotional or attitudinal reactions (Bandura, 1977, 1997).

SCCT suggests that the student's interests and efforts reflect the interaction among self-efficacy beliefs, outcome expectations, and goal setting over time. These interactions are inclined to foster or hamper educational and career-related efforts (Lent et al., 1994). Accordingly, students will form a sustained interest in something and are motivated to set goals when they experience high self-efficacy and positive outcome expectations (Zimmerman, 2000). Sustained interest is further discussed as an

antecedent to prestige, goal pursuit, satisfaction, and academic performance (Brown, Lent, Telander, & Tramayne, 2011; Lent et al., 2010).

Besides discussing the underlying mechanism and potential outcomes explainable by SCCT, it is important to mention one of the theories' tenets, which makes SCCT particularly relevant for the CQ literature. SCCT is domain-specific and focused on dynamic aspects of individuals and their interaction with the environment (Lent & Brown, 2006). Henceforth, we will emphasize the classroom as our specific domain to apply SCCT. Second, although SCCT has been used in many studies since its introduction in 1994, the majority have been focused on engineering, math, and science-related learning domains. Relatively few have focused on arts or social sciences contexts (Lent et al., 2010; Sheu et al., 2010). Our work here contributes to the aforementioned works by adding a social sciences context (i.e., cross-cultural management) to the literature. With the literature review and theoretical underpinning established, we move to the hypotheses development.

HYPOTHESES DEVELOPMENT

SCCT suggests that domain-specific self-efficacy, goal progress, and outcome expectations are positively linked to students' satisfaction with their respective studies (Lent et al., 2005; Lent et al., 2007). Students are more likely to be satisfied within a specific domain when they possess abilities necessary for successful performance (self-efficacy beliefs), make progress at personally valued goals, and attain valued outcomes within that domain. Self-efficacy in cross-cultural competences is reflected in students' level of CQ. Students high in CQ have the domain-specific (i.e., CCM) ability and cross-cultural confidence acquired through exposure to different cultures (Crowne, 2013; Triandis, 2006) and cross-cultural interactions (Eisenberg et al., 2013; Ng et al., 2009). Thus, students high in self-efficacy who adjust to culturally diverse situations (high CQ) should exhibit satisfaction with their choice of CCM classes.

Furthermore, CCM students who believe in their competencies (i.e., self-efficacy) will set more challenging goals and have higher outcome expectations which contribute to satisfaction upon achievement (Lent et al., 2007; Locke & Latham, 2002). On the other hand, students that lack these abilities have lower outcome expectations, resulting in a lower level of satisfaction. In addition, they set less

challenging goals due to the perceived lack of competencies and the associated risk of failure (Lent et al., 2010).

In summary, students high in CQ are high in self-efficacy in culturally diverse situations, set high goals, and have high outcome expectations with their study of CCM. This is suggested to lead to satisfaction with CCM studies. In accordance, we posit:

Hypothesis 1a: Students' level of cultural intelligence is positively related to their satisfaction with cross-cultural management studies prior to taking a cross-cultural management class (Time 1).

Although not specifically hypothesized under the tenets of SCCT, academic commitment to CCM studies may be explainable through the mechanism of the theory. Similar to academic satisfaction, academic commitment constitutes an affective response and academic adjustment. As such, academic commitment and satisfaction might have common antecedents. Second, as with academic satisfaction, domain-specific self-efficacy plays a significant role in the formation of commitment (Wessel, Ryan, & Oswald, 2008). Students who believe in their cross-cultural competence (high CQ) will form a stronger emotional attachment with an academic area of interest (e.g., CCM). Third, existing cross-cultural abilities and the investment of energy, time, and money to pursue academic interests are suggested to increase the commitment to the course (Khoshaba & Maddi, 2005; Sheard & Golby, 2007). Accordingly, students who are high in CQ and invested in this ability are more likely to be committed to the study of CCM.

Anecdotal support for the idea that workers high in CQ are more committed to their jobs was found by Carranza and Egri (2010). They found a positive relationship between motivational CQ (one of the four CQ facets) and organizational commitment. Motivational CQ is assumed to facilitate, stabilize, and bolster a person's emotional bond to an organization (Carranza & Egri, 2010). The level of commitment is furthermore increased with an individual's aspiration to succeed. We assume that academic commitment works similar to organizational commitment. Hence, we suggest that students high in CQ increase their academic commitment due to their motivation for academic attainment and success. Motivation, on the other hand, is related to self-efficacy and the setting of more challenging goals

and positive outcome expectations (Fu, Richards, & Jones, 2009; Locke, 1991). These arguments are in line with the underlying mechanisms of the SCCT framework. Therefore, we hypothesize:

Hypothesis 1b: Students' level of cultural intelligence is positively related to their commitment to cross-cultural management studies prior to taking a cross-cultural management class (Time 1).

In addition to predicting attitudinal outcomes, SCCT contributes to the understanding of the mechanism behind cross-cultural ability improvement. SCCT suggests that long-term interest formation, goal progress, and academic performance of CCM students depend on domain-specific abilities, outcome expectations, and self-efficacy about cross-cultural knowledge. For example, individuals high in self-efficacy tend to engage in challenging goal setting, which leads to positive outcomes and performance (Locke & Latham, 1990, 2002). This is particularly true in the development of cross-cultural competences. Self-efficacy in intercultural encounters is considered a major building block in the formation of CQ. Positive outcomes and performance in CCM studies may be measured by students' increase in CQ over the duration of a course. Thus, following the mechanism of SCCT, CCM students who are cross-culturally adept (high in CQ) believe in their domain-specific competencies, set more challenging goals, and work hard to achieve those goals. In particular, students that are exposed to a domain-specific context such as a CCM class will be more likely to set CCM related goals. One such goal may be an increase of CCM related skills and abilities (CQ).

While our prediction about the malleability of CQ is in line with past research, we aim to shed light on a different underlying process, as well as the components driving CQ development. For example, MacNab (2012) provided evidence that experiential learning through exposure to different cultures and feedback loops enhances cross-cultural competences of students (see the CQ Education section for an overview). We concur with his arguments, yet suggest that CQ development is highly dependent on the individual student and the level of self-efficacy, outcome expectations, goal progress, and existing cross-cultural abilities. CCM courses can be helpful to foster these attitudes and behaviors that result in a higher CQ. Thus, in concordance with previous studies concerning the malleability of CQ

in the classroom and the predictions of SCCT, we suggest that:

Hypothesis 2: A cross-cultural management course affects students' cultural intelligence, such that students' cultural intelligence at Time 2 is higher than their cultural intelligence at Time 1.

Hypothesis 2 specifies that CQ is malleable and that it can be taught in the classroom. Next, it is important to elucidate why a CQ improvement over the time of a university course matters. As thus, we are not only inclined to establish the effectiveness of a CCM course in competence building, but also broaden the CQ research stream with possible important outcomes and implications resulting from these courses.

Following the argument leading to Hypotheses 1a and 1b, we suggest that students at the end of the CCM course are satisfied and committed to the study of cross-cultural management. The strength of satisfaction and commitment may result from a proliferation of their CQ and increased self-efficacy in cross-cultural competencies. Development of skills and self-efficacy have both been established as influences on academic attitudes such as domain-specific satisfaction with studies (Lent et al., 2007; Lizzio et al., 2002). Thus, students who are culturally competent and are confident in cross-cultural interactions are more committed and satisfied at the end of the course after enhancing their skills. Students with low levels of CQ after completing the class will subsequently exhibit lower levels of satisfaction and commitment as opposed to their counterparts with higher levels of CQ. Thus, we posit:

Hypothesis 3a: Students' level of cultural intelligence is positively related to their satisfaction with cross-cultural management studies after taking a cross-cultural management class (Time 2).

Hypothesis 3b: Students' level of cultural intelligence is positively related to their commitment to cross-cultural management studies after taking a cross-cultural management class (Time 2).

In the previous sections we discussed how and why it is important that students can increase their CQ in cross-cultural management courses. We further explained the possible attitudinal outcomes

at the beginning and end of the course. Now we turn to the outcomes of a gain in CQ during the course. Specifically, we expect that the students who increase their CQ over the semester will be more satisfied and committed than those who do not improve. This can apply to students with low or high CQ levels at the beginning of the course.

First of all, goal progress and the achievement of goals over the time of a CCM course might result in improved positive attitudes toward the study of CCM. Progress toward goals that are particularly important to the students may relate more strongly to academic satisfaction and commitment than would progress of less personally salient goals (Lent et al., 2005). Students that improved their CQ may feel that they progressed or achieved goals regarding cross-cultural management.

Second, students taking the CCM course might not only meet their individual outcome expectations and goals but exceed them, which should enhance general as well as domain-specific affective states (e.g., satisfaction and commitment; Griffith & Graham, 2004; Hamner & Harnett, 1974; Locke & Latham, 2002). Therefore, the intellectual training in CQ may have increased domain-specific self-efficacy leading to an improvement in self-reported attitudes and abilities at the end of the semester (Jagacinski, Kumar, Boe, Lam, & Miller, 2010). Students that did not meet their goals or outcome expectations may be less satisfied and committed. The low expected commitment and satisfaction may be based on a relatively small improvement during the semester (Ames, Ames, & Felker, 1977; Fu, Richards, & Jones, 2009; Nicholls, 1984).

Accordingly, the magnitude of improvement irrespective of skill level at the beginning of the course is suggested to have an impact on attitudinal outcomes. Thus, we posit:

Hypothesis 4a: The amount of positive change in cultural intelligence will have a positive effect on the satisfaction with cross-cultural management studies, such that those students who increase their cultural intelligence will have greater satisfaction with cross-cultural management studies.

Hypothesis 4b: The amount of positive change in cultural intelligence will have a positive effect on the commitment to cross-cultural management studies, such that those students who increase their cultural intelligence will have

greater commitment to cross-cultural management studies.

We now test these hypotheses.

METHOD

Sample and Data Collection Procedures

In this study, we used a quasi-experimental design (with a control group and pretest, but without random assignment) to survey graduate students who were enrolled in a business school program in the southern part of the United States. The treatment group was enrolled in the Masters of Business Administration (MBA) program. As part of the MBA program, students study one semester of cross-cultural management and CQ education. The treatment that was applied to the CCM students was based on a two-part system: the use of a text book and current event discussions (see Appendix I for the detailed format and content of the treatment). While most students were from the United States, some were international students (13%) from 12 countries (China, Germany, Korea, Russia, Thailand, Great Britain, Nigeria, Jamaica, Croatia, Italy, Guatemala, and France). The control group consisted of students taking an entrepreneurship course that did not focus on CCM or CQ. Three percent of the subjects were taking both courses, and were removed from the sample.

Causation is naturally difficult to establish in the social sciences. We attempted to help establish causation with the nature of our quasi-experimental design. By having a control group, we can rule out a "history" effect (e.g., some third variable might be causing the CQ-Satisfaction/Performance relationship). The control group also confirms the covariation of the cause and effect. If *X*, then *Y*. If not *X*, then not *Y*. If the teaching of CCM (treatment) increases CQ, and not teaching CCM does not increase CQ, then it's plausible that teaching CCM causes an increase in CQ. Also, reverse causation is an issue. Students that are highly satisfied and committed to the study of CQ improve their CQ over the duration of the course. This can be partly addressed through the theoretical foundation of SCCT, where satisfaction and commitment arise from an efficacy foundation, which in this study is based on development of CQ efficacy through CQ education.

Data were collected by the course instructors at two different times: The Time 1 survey was

administered during the first week of the semester, and the Time 2 survey was administered during the last week of the semester. The duration of the semester was 16 weeks. To ensure consistency of the results and success of the intervention, it was important that the same instructor with the same teaching approach taught the class over the duration of the experiment.

One hundred and fifty two students enrolled in the MBA program served as the treatment group. Their average age was 26 (*SD*: 3.23), and 70% of the sample were male. Most of the students had not studied abroad or lived abroad for more than 2 years and had traveled to about six countries (*M*: 5.60, *SD*: 4.59) before the start of the semester.

One hundred twenty nine students enrolled in an entrepreneurship course served as the control group. The survey was given at the same times as the treatment group. The average age was 23 (*SD*: 1.90) and 51% of the sample were male. As with the treatment group, most students had not studied abroad or lived in another country than their home country and had visited about five countries before the start of their class (*M*: 5.40, *SD*: 5.81).

Measurement

Cultural Intelligence

Cultural intelligence was measured using a 7-point Likert scale developed by Ang et al. (2007; 0 = *strongly disagree* to 6 = *strongly agree*). Their scale is a multidimensional construct with 20 items that make up the four subdimensions of metacognitive (four items), cognitive (six items), motivational (five items), and behavioral (five items) CQ. Each dimension represents distinct abilities applicable in cross-cultural environments yet is aggregable to an overall CQ, which was done for this study. We chose to aggregate the four components for three reasons. First, the four components are highly correlated and thus lend themselves to multicollinearity. Second, there is a lack of theoretical consensus about the importance and strength of each dimension (Bücker, Furrer, Poutsma, & Buyens, 2014; Groves & Feyerherm, 2011). Third, the purpose of this study was to understand the effects of overall CQ on attitudinal outcomes. Future research may attempt to tease out the effects of each component separately. Coefficient α -values for the overall scale have ranged from 0.83 to 0.93 (Imai & Gelfand, 2010; MacNab, 2012; Rockstuhl et al., 2011; Ward, Fischer, Lam, & Hall, 2009). Cronbach alphas in the present

study were 0.90 (Time 1) and 0.91 (Time 2) for the treatment group and 0.91 (Time 1) and 0.92 (Time 2) for the control group.

Academic Satisfaction (*Satisfaction With Cross-Cultural Management Studies*)

Academic satisfaction was measured with an adaptation of the overall job satisfaction scale created by Agho, Price, and Mueller (1992). The authors adapted a 1-dimensional construct with six items which correlates positively with employee's perception of performance and supervisor support (Agho, Mueller, & Price, 1993; Aryee, Fields, & Luk, 1999; Judge, Locke, Durham, & Kluger, 1998). We chose to use only four of the six items based on the results of the content adequacy test. The adapted 5-point scale (0 = *strongly disagree* to 4 = *strongly agree*) focused on the academic environment in contrast to the work setting of the original scale. The adapted scale items and the scale validation procedures are presented in Appendix II. Cronbach alphas for the present study were 0.77 (Time 1) and 0.80 (Time 2).

Academic Commitment (*Commitment to Cross-Cultural Management Studies*)

Academic commitment was measured by adapting the organizational commitment scale developed by Mowday, Steers, and Porter (1979). A 9-item 7-point scale was designed to measure affective organizational commitment (0 = *strongly disagree* to 6 = *strongly agree*). The adaptation of and shortening it to six items was conducted to make the scale more appropriate to the academic context (see Appendix II for the adapted scale items and the scale validation procedure). Cronbach alphas for the present study were 0.85 (Time 1) and 0.89 (Time 2).

Controls

We controlled for age, gender, nationality (U.S. American, or not), and international experience variables. International experience variables constituted the number of countries students received formal education (including the home country), the number of study-abroad experiences, the number of countries visited, and the number of countries lived in (including the home country). Besides the generally applied controls of age and gender in the CQ research (e.g., Eisenberg et al., 2013), we decided to include nationality because cultural

perspectives may play a role in the formation of attitudes (Chen & Indartono, 2011). Last, it was important to control for international experience variables since exposure to different cultures has been established as an antecedent to CQ development (Crowne, 2008; Ng et al., 2009; Triandis, 2006).

The constructs measured in our study were attitudes and individual perceptions. Thus, we relied on single-source and self-reported data. The implication of this form of data collection is discussed in the following section.

Common Method Bias (CMB)

Due to the use of single-source and self-report data, we recognize that our measurements are subject to common method bias (CMB; Conway & Lance, 2010; Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). A priori, we minimized the effect of biased relationships through careful study design and data collection in line with Podsakoff et al. (2003, 2012). First, we selected a sample population appropriate for the context of the study as well as the topic (e.g., students taking CCM classes) who had the ability to comprehend the survey questions. Second, to avoid respondent fatigue and to enhance motivation, we chose questions of personal relevance, created a relatively short survey (7–10 minutes), used clear and unambiguous items, and refrained from complex and abstract questions. Third, to decrease the difficulty of satisficing, we used different scale properties as well as some negatively worded items. Respondents are *satisficing* when they respond stylistically instead of providing thorough and accurate answers (MacKenzie & Podsakoff, 2012; Podsakoff et al., 2012). Fourth, to avoid respondents selecting answers based on preconceived theories about the study outcome and the relationships between the constructs (e.g., implicit theories), we reversed the causal order of dependent and independent variable items in the questionnaire. Next, to decrease socially desirable responses, we provided detailed information about the confidentiality of the responses and highlighted the importance of accurate study results. Last, to reduce evaluation apprehension, we guaranteed our respondents that there were no right or wrong answers and that the survey was based on their own personal evaluations (Podsakoff et al., 2003; Podsakoff et al., 2012). Post hoc, we employed statistical remedies to partial out CMB in our analyses. The empirical findings are presented in the Results section.

RESULTS

Sample Description

We conducted the data analysis and hypotheses testing using SPSS 21 and LISREL 8.8. Means, standard deviations, and correlations of the study variables are reported in Table 1 (treatment and control group). Students at the beginning of the CCM class (treatment group) had an average CQ score of 3.76 (*SD*: 0.76) and improved the score at the end of the class to 4.18 (*SD*: 0.69). Students at the beginning of the entrepreneurship class (control group) had an average CQ score of 3.54 (*SD*: 0.82) and improved the score at the end of the class to 3.61 (*SD*: 0.79). Furthermore, students enrolled in the CCM course were, on average, neither particularly satisfied nor unsatisfied (*M*: 2.64, *SD*: 0.55) with the study of CCM before the beginning of the course. Similarly, these students were somewhat indecisive in their commitment (*M*: 4.09, *SD*: 0.93) to the study of CCM. Satisfaction with (*M*: 3.06, *SD*: 0.52) and commitment to the study of CCM (*M*: 4.43, *SD*: 0.99) increased for those taking the CCM class. Students enrolled in an entrepreneurship course portrayed similar satisfaction (*M*: 2.61, *SD*: 0.51) and commitment (*M*: 4.04, *SD*: 0.89) levels to entrepreneurship studies to those of the CCM students to CCM studies at the beginning of the semester. However, entrepreneurship students did not significantly increase their satisfaction (*M*: 2.71, *SD*: 0.74) or commitment (*M*: 4.15, *SD*: 1.12) during the duration of the course.

Measurement Model Analysis

To assess the overall model fit, we ran a confirmatory factor analysis (CFA) with the relevant constructs (Satisfaction Time 1, Commitment Time 1, CQ Time 1, Satisfaction Time 2, Commitment Time 2, CQ Time 2). The overall measurement model at Time 1 ($\chi^2(74) = 132.89, p < 0.05, RMSEA = 0.076, CFI = 0.96$) as well as Time 2 ($\chi^2(74) = 149.91, p < 0.05, RMSEA = 0.079, CFI = 0.96$) showed good measurement fit.

Structural Model Analysis

Our first structural model presented the CQ variable at Time 1 as the independent and the two dependent variables Satisfaction and Commitment at Time 1 as well as the 7 control variables: age, gender, nationality, and international experiences (number of study-abroad trips, number of education abroad, number of countries visited, and number of countries lived). The model fit the data adequately

($\chi^2(152) = 309.82, p < 0.05, CFI = 0.92, RMSEA = 0.080$). The second structural model showed the CQ variable at Time 2, as the independent and the two dependent variables Satisfaction and Commitment at Time 2 as well as the 7 control variables. In contrast to the first model, we controlled additionally for students' level of satisfaction and commitment at Time 1. Similar to the first structural model, this model fit the data adequately ($\chi^2(439) = 773.42, p < 0.05, CFI = 0.94, RMSEA = 0.071$).

Hypotheses Tests

The results from the hypotheses tests are presented in Tables 2–5. Hypotheses 1a and 1b concern the relationship between students' CQ at the beginning of the course and their attitudes toward the study of CCM. We proposed in Hypothesis 1a that students' CQ will positively influence their satisfaction with the CCM course. Hypothesis 1b suggests that the same effect of students' CQ can be found with regard to their commitment to the study of CCM. The level of CQ at Time 1 was positively and significantly associated with satisfaction (standardized parameter estimate = 0.68, $p < 0.001$) and commitment (standardized parameter estimate = 0.64, $p < 0.001$). Hypotheses 1a and 1b are, therefore, supported.

Hypothesis 2 posits that participating in a CCM course affects CQ in that students' CQ at Time 2 is higher than their CQ at Time 1. This implies that CQ can be taught in one semester. To test if there was an increase in students' CQ scores, we conducted a paired *t* test for the pretest and posttest scores of CQ. To assess practical impact, we also report effect sizes (using Cohen's *d*) for the treatment group's CQ improvement. Eisenberg et al. (2013) also used this method in their study concerning CQ improvement in the classroom. As shown in Table 3, the difference in the mean CQ score between Time 1 and Time 2 was positive and significant, indicating a moderate to high effect size ($t = 8.92, p < 0.001, d = 0.58$) supporting Hypothesis 2. However, no such effect was expected in the control group where students were not exposed to CCM material. The pretest and posttest paired-sample *t* tests results for the control group indicated that there was no significant improvement in CQ ($t = 1.11, p > 0.05, d = 0.09$). To confirm that the improvement of the treatment group was not subject to a higher initial level of CQ, we compared the two groups' CQ at the beginning and at the end of the course. Results from the *t*-test analysis revealed that there was no significant difference between the students enrolled in the CCM

TABLE 1
Means, Standard Deviations, and Correlations (Treatment and Control Group)

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	M	SD
1. Commitment (T1)	4.09	0.93		0.49***	0.29***	0.64***	0.44***	0.18*	0.02	0.13	0.00	-0.02	-0.08	0.11	-0.09	4.04	0.89
2. Satisfaction (T1)	2.64	0.55	0.51***		0.15	0.45***	0.47***	0.07	0.10	0.05	0.00	0.05	-0.01	0.04	-0.02	2.61	0.51
3. CQ (T1)	3.76	0.76	0.33***	0.24***		0.26*	0.18*	0.61***	-0.03	0.41***	0.27**	0.34***	0.00	0.22*	0.08	3.54	0.82
4. Commitment (T2)	4.43	0.99	0.61***	0.44***	0.38***		0.69***	0.29***	0.11	0.17	0.10	0.10	0.03	0.17	-0.07	4.15	1.12
5. Satisfaction (T2)	3.06	0.54	0.25**	0.27***	0.12	0.56***		0.20*	0.02	0.14	0.07	0.06	0.08	0.14	-0.04	2.71	0.74
6. CQ (T2)	4.18	0.69	0.30***	0.29***	0.68***	0.42***	0.31***		0.06	0.34***	0.27**	0.30***	0.07	0.28***	0.07	3.61	0.79
7. Gender	0.70	0.46	-0.11	-0.03	-0.12	-0.10	0.12	-0.10		0.07	0.09	0.11	0.27**	0.03	0.03	0.51	0.50
8. Study Abroad	0.43	0.50	0.22**	-0.03	0.37***	0.10	0.00	0.27***	-0.08		0.69***	0.41***	0.06	0.37***	0.16	0.20	0.40
9. Education Abroad	1.51	0.72	0.19*	-0.07	0.33***	0.17*	0.01	0.24**	-0.02	0.64***		0.54***	0.09	0.39***	0.53***	1.26	0.59
10. Countries Visited	5.60	4.59	0.09	0.01	0.22**	0.04	0.19*	0.17*	0.00	0.39***	0.42***		-0.01	0.14	0.50***	5.40	5.81
11. Age	25.91	3.23	-0.05	-0.03	0.07	0.04	0.08	0.05	0.16*	-0.03	0.11	0.04		0.10	0.17	22.78	1.90
12. Nationality	0.11	0.31	0.01	0.01	0.28***	0.13	0.00	0.24**	-0.11	0.14	0.29***	0.05	0.23**		0.29***	0.16	0.36
13. Countries Lived	1.11	0.36	0.01	-0.06	0.26***	0.12	0.14	0.18*	-0.04	0.10	0.37***	0.19*	0.31***	0.50***		1.11	0.50

Notes. Treatment group figures are reported at the lower left diagonal. Control group figures are reported at the shaded upper right diagonal. Treatment Group: N = 152, Control Group: N = 129.

Gender: 0 = Female, 1 = Male; Study Abroad: 0 = No, 1 = Yes; Nationality: 0 = U.S., 1 = Non-U.S.

*p < 0.05, **p < 0.01, ***p < 0.001.

TABLE 2
Relationships Between CQ, Satisfaction, and Commitment at Time 1

Relations	Standardized parameter estimates	Standard error	R ²
Satisfaction Time 1			0.35
Satisfaction T1 ← CQ T1	0.68***	0.14	
Satisfaction T1 ← Gender	0.02	0.19	
Satisfaction T1 ← Study Abroad	-0.20	0.25	
Satisfaction T1 ← Education Abroad	-0.09	0.17	
Satisfaction T1 ← Countries Visited	-0.01	0.02	
Satisfaction T1 ← Age	-0.02	0.03	
Satisfaction T1 ← Nationality	-0.03	0.34	
Satisfaction T1 ← Countries Lived	-0.18	0.31	
Commitment Time 1			0.37
Commitment T1 ← CQ T1	0.64***	0.13	
Commitment T1 ← Gender	-0.07	0.18	
Commitment T1 ← Study Abroad	-0.09	0.23	
Commitment T1 ← Education Abroad	0.15	0.16	
Commitment T1 ← Countries Visited	-0.05	0.02	
Commitment T1 ← Age	-0.05	0.03	
Commitment T1 ← Nationality	-0.18	0.32	
Commitment T1 ← Countries Lived	-0.12	0.28	

Notes. N = 152.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

class and the entrepreneurship students ($t = 1.84$, $p > 0.05$) at the beginning of the course. However, the groups differed significantly at the end of the course, such that the treatment group's CQ was significantly higher than the control group's CQ ($t = 5.63$, $p < 0.05$).

Hypotheses 3a and 3b concern the relationship between students' CQ at the end of the course and their attitudes toward the study of CCM. SCCT suggests that the students' interests reflect the interaction among self-efficacy beliefs and positive outcome expectations. A CCM course that is designed to recognize differences in others, and to understand why those differences exist, will slowly increase a student's self-efficacy. The students' confidence in their ability to understand these situations will improve, resulting in an expectation of a positive outcome at the end of the course. We proposed in Hypothesis 3a that students' CQ will positively influence their satisfaction with CCM studies. Hypothesis 3b suggests that the same effect of students' CQ can be found with regard to their commitment to the study of CCM. After controlling for the initial satisfaction with and commitment to the study of CCM, the level of CQ at Time 2 was positively and significantly associated with satisfaction (standardized parameter estimate = 0.59, $p < 0.001$) and commitment (standardized parameter estimate = 0.51, $p < 0.001$),

supporting Hypotheses 3a and 3b (see Table 4). To refine these results, we conducted a paired t test for the pretest and posttest scores of students' satisfaction and commitment to the study of CCM. As shown in Table 3, the difference in the mean satisfaction ($t = 8.53$, $p < 0.001$) and commitment ($t = 4.91$, $p < 0.001$) scores between Time 1 and Time 2 was positive and significant. This means that students' satisfaction with commitment to CCM significantly increased over the semester in the CCM class. Contrarily, the satisfaction ($t = 1.76$, $p > 0.05$) and commitment ($t = 1.45$, $p > 0.05$) to entrepreneurship did not increase over the semester.

Hypotheses 4a and 4b posit that the magnitude of CQ improvement during the semester positively impacts students' attitudes toward the study of CCM. We proposed in Hypothesis 4a that students' CQ development during the semester will positively influence their satisfaction with CCM studies. Hypothesis 4b suggests that the same effect of students' CQ can be found on commitment. To test these hypotheses, we utilized CQ difference scores which are the result of the difference between the pre- and post-CQ measures assessed in Time 1 and Time 2 (Rosenblatt et al., 2013). After controlling for the initial satisfaction with and commitment to the study of CCM, the change in CQ was positively and significantly associated with satisfaction (standardized parameter estimate = 0.28, $p < 0.001$) and positively

TABLE 3
Average CQ, Satisfaction, and Commitment Scores on Pre- and Posttests and Improvement

	Pretest (T1)	Posttest (T2)	Improvement: Posttest-pretest	Effect size Cohen's <i>d</i>
Treatment Group				
Cultural Intelligence	3.76	4.18	0.42*** (<i>t</i> = 8.92)	0.58
Satisfaction	2.67	3.11	0.44*** (<i>t</i> = 8.53)	
Commitment	4.14	4.54	0.39*** (<i>t</i> = 4.91)	
Control Group				
Cultural Intelligence	3.54	3.61	0.07 (<i>t</i> = 1.11)	0.09
Satisfaction	2.61	2.71	0.10 (<i>t</i> = 1.76)	
Commitment	4.04	4.15	0.09 (<i>t</i> = 1.45)	

Notes. Treatment Group: *N* = 152, Control Group: *N* = 129

* *p* ≤ 0.05, ***p* ≤ 0.01, ****p* ≤ 0.001.

but not significantly related to commitment (standardized parameter estimate = 0.10, *p* > 0.05), supporting Hypotheses 4a but not 4b (see Table 5). The controls ensured that the actual effect of change was measured regardless of students' initial levels of commitment or satisfaction. This means that students that increased their CQ during the semester were more satisfied than the students that did not improve their CQ. Although positive, no significant impact of the change in CQ could be established for commitment to CCM.

Treatment of Common Method Bias (CMB)

We tested if common method effects biased our results. Using LISREL 8.8, we estimated full measurement models for Time 1 and Time 2, respectively, which included the latent constructs of CQ, satisfaction with the study of CCM, and commitment to the study of CCM. Next, we added a fourth latent factor, a "method factor," to our measurement models at Time 1 and Time 2 with all of the items loading on their latent constructs as well as on the method factor. The method factor was not permitted to correlate with any substantive construct. If the addition of the method factor improves the model fit, CMB may be present (Williams, Cote, & Buckley, 1989). Results revealed that the model including the method factor provided a better fit to the data (Time 1: $\chi^2(60) = 71.28$, *p* < 0.05, RMSEA = 0.035; Time 2: $\chi^2(60) = 90.29$, *p* < 0.05, RMSEA = 0.058) than the original measurement models (Time 1: $\chi^2(74) = 132.89$, *p* < 0.05, RMSEA = 0.076; Time 2: $\chi^2(74) = 149.91$, *p* < 0.05, RMSEA = 0.079). Moreover, the differences between the models (T1: $\Delta\chi^2(14) = 61.61$, *p* < 0.001; T1: $\Delta\chi^2(14) = 59.62$, *p* < 0.001) was significant, thus suggesting the existence of CMB. To determine the

extent of CMB, we calculated the average variance explained by the method factor. Results revealed that the method factor explained 18% of the variance in the data in Time 1 and 24% in Time 2. These results were below the 25% acceptable threshold established by Williams et al. (1989). In conclusion, although present, there is evidence that CMB was not pervasive enough to greatly threaten our hypotheses testing. Therefore, we believe that the relationships observed represent substantive rather than artificial effects. Last, below we present a more in-depth discussion of the results.

DISCUSSION

The aim of our study was to examine the effects of cross-cultural management education (based on cultural intelligence) on students' satisfaction and commitment to the study of CCM. We found that students high in CQ are more satisfied and committed to CCM than those who are not (Hypotheses 1a and Hypothesis 1b). Furthermore, satisfaction was stronger for students that increased their CQ over the period of the course (Hypothesis 4a). The stronger support for satisfaction than commitment (Hypothesis 4b) may be explained by the fact that commitment is a more long-term attachment than satisfaction (Porter et al., 1974), and might not develop as strongly during one semester. These results are of particular importance due to their impact on students' future actions and occupational choices.

In addition, our results show that CCM courses can significantly increase a student's CQ over the course of one semester (Hypothesis 2). By including the effect sizes in our analysis, we demonstrate that this increase is significant and meaningful. In

TABLE 4
Relationships Between CQ, Satisfaction, and Commitment at Time 2

Relations	Standardized parameter estimates	Standard error	R ²
Satisfaction Time 2			0.39
Satisfaction T2 ← CQ T2	0.59***		0.13
Satisfaction T2 ← Satisfaction T1	0.10	0.10	
Satisfaction T2 ← Gender	0.09	0.17	
Satisfaction T2 ← Study Abroad	-0.20	0.22	
Satisfaction T2 ← Education Abroad	-0.06	0.15	
Satisfaction T2 ← Countries Visited	0.13	0.02	
Satisfaction T2 ← Age	-0.02	0.03	
Satisfaction T2 ← Nationality	-0.16	0.30	
Satisfaction T2 ← Countries Lived	0.11	0.27	
Commitment Time 2			
Commitment T2 ← CQ T2	0.51***	0.10	0.63
Commitment T2 ← Commitment T1	0.48***	0.09	
Commitment T2 ← Gender	0.02	0.14	
Commitment T2 ← Study Abroad	-0.17	0.18	
Commitment T2 ← Education Abroad	0.04	0.13	
Commitment T2 ← Countries Visited	-0.11	0.02	
Commitment T2 ← Age	0.02	0.02	
Commitment T2 ← Nationality	0.00	0.25	
Commitment T2 ← Countries Lived	0.02	0.22	

Notes. $N = 152$.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

contrast to the treatment group, no such effect could be established for the control group, which was not exposed to CCM training. Moreover, we compared both groups' CQ levels at the beginning and at the end of the course. Results revealed that there was no significant difference between the treatment and control group at the beginning of the course, yet there was at the end of the course. This further supported our claim that students can increase their CQ by taking part in a CCM course. Thus, it seems probable that CCM education constitutes a suitable tool for improving students' level of CQ. These findings provide additional support to the outcomes of Eisenberg et al. (2013) and MacNab (2012), who found that CQ can be significantly increased through academic as well as experiential learning.

Not surprising, we found that students' CQ level after taking the course was also positively related to students' satisfaction and commitment with CCM (Hypotheses 3a and 3b). Also of interest, students' commitment and satisfaction levels were significantly higher at the end of the course than at the beginning. These findings highlight the significance of CQ education in the classroom on the development of positive attitudes and interests in CCM classes.

As discussed above, the process of nurturing future global managers begins in the classroom (Ang et al., 2006); therefore, the results presented here are of

particular importance to educators due to the growing pressure of globalization, workforce mobility, and international assignments (Eisenberg et al., 2013; Joy & Poonamallee, 2013). The findings confirm our hypotheses that successful CQ training may result in culturally competent students who are both satisfied and committed to their future international roles. Thus, we present and confirm the important role business schools can play in educating their students in the area of cultural competencies.

Practical Implications

Our study has three important practical implications. First, we show that CQ is positively related to the development of attitudinal outcomes in students. Students high in CQ are more satisfied with and committed to the study of CCM. This commitment and satisfaction may relate to career choices and the willingness to take on the challenges of a globalized workforce (Lent et al., 2010). By being aware students' need for cultural competencies, universities have the chance to better prepare them for their global roles and to help supply firms' with culturally adept employees. Last, by offering cultural training, universities can inspire students to choose an international career path and help form their career choices.

TABLE 5
Relationships Between CQ Change, Satisfaction, and Commitment at Time 2

Relations	Standardized parameter estimates	Standard error	R ²
Satisfaction Time 2			
Satisfaction T2 ← CQ Change	0.28***	0.26	0.10
Satisfaction T2 ← Satisfaction T1	0.36***	0.17	
Satisfaction T2 ← Gender	0.06	0.18	
Satisfaction T2 ← Study Abroad	-0.02	0.22	
Satisfaction T2 ← Education Abroad	0.01	0.16	
Satisfaction T2 ← Countries Visited	0.18*	0.02	
Satisfaction T2 ← Age	0.01	0.03	
Satisfaction T2 ← Nationality	-0.09	0.30	
Satisfaction T2 ← Countries Lived	0.18	0.28	
Commitment Time 2			0.50
Commitment T2 ← CQ Change	0.10	0.14	0.50
Commitment T2 ← Commitment T1	0.70***	0.10	
Commitment T2 ← Gender	-0.01	0.15	
Commitment T2 ← Study Abroad	-0.06	0.19	
Commitment T2 ← Education Abroad	0.03	0.14	
Commitment T2 ← Countries Visited	-0.04	0.02	
Commitment T2 ← Age	0.05	0.02	
Commitment T2 ← Nationality	0.10	0.26	
Commitment T2 ← Countries Lived	0.06	0.24	

Notes. $N = 152$.

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Second, students that take a CCM course can increase their level of CQ, supporting past research that shows CQ is similar yet different than IQ, which is considered nonmalleable. Given the positive relationship between CQ and various performance or attitudinal outcomes for global managers, this finding helps further justify CQ training inside (and outside) the classroom.

Third, we show that the level of CQ at the beginning of the course may not be the main predictor of students' satisfaction with and commitment to the study of CCM. Our findings suggest that a positive change in CQ may be at least as important of a driver in these important attitudinal outcomes as the initial level of CQ. This means that even if educators (or employers) start with a cadre of people that are low in CQ, we shouldn't give up on them. Given proper CCM training, they may turn out to be the most satisfied and committed group of all. Thus, CCM classes may benefit even the least internationally experienced students (or employees).

Limitations and Future Research

This study has a number of limitations which present opportunities for future research. We will focus on the most prominent ones here. Although the

majority of our findings support the proposed model, they cannot be unambiguously interpreted.

First, the generalizability of the study may be limited because the sample is primarily U.S. students attending a university in the southern U.S. part of the United States. Although the students had some international exposure and prior experience, the setting may have impacted our results. If anything, this sample may be considered relatively low in CQ and provide a boundary condition in CQ studies. Future studies should extend the subject pool to other countries that have not already been sampled.

Second, the use of self-reports might have created a distortion of results for two reasons. Thomas et al. (2008) suggest self-reports might not be adequate to capture CQ and recommended using distinct procedures to assess the subcomponents instead of an overall CQ measure (e.g., observation, tracing techniques, and knowledge-specific techniques). In addition, using self-reports for all study variables might have resulted in CMB (Conway & Lance, 2010; Podsakoff et al., 2003). Although present, the potential risk of inflated relationships (CMB) between variables was limited due to the study design and use of reliable measurement constructs. Post-hoc tests that included a method factor suggest that CMB is not a pervasive problem. Nevertheless, future research should incorporate multiple measurement methods

that capture both self- and other-perspectives (such as behavioral observations).

Third, future research may address the potential issue of data collected at two points in time. It may be valuable to collect three or more measures during the time of the course to be able to enhance the analysis method by incorporating a repeated measure design. Although a quasi-experimental design with both pre- and posttests is considered robust in the organizational behavior literature, there is a clear movement toward longitudinal studies.

Fourth, while the *R*-squared in the treatment group was 0.39 and 0.63 for satisfaction and commitment, respectively, there is still a large amount of variance to be explained, and future work should attempt to better understand it. However, the threat of omitted variable bias was limited because there was a positive and significant relationship between students' CQ and academic satisfaction and commitment prior to taking the course for the treatment group only.

Last, future research may investigate the impact of CQ and CQ improvement on students' performance variables at the end of the course. Ideally, these dependent variables (DVs) would be more proximate than overall grade since there are many variables that affect the grade (and performance in general). Moreover, subsequent studies might examine the influence of CQ on career choices or career success. For instance, do students that increase their CQ change specializations or even majors within the business school? Do they select jobs with multinationals?

CONCLUSIONS

In conclusion, our study helped extend the CQ literature by enhancing our understanding of more potential outcomes of students' CQ. Thus, we were able to add the element of *why* CQ training in the classroom matters.

Also important, we found that students' level of CQ is positively related to the satisfaction with and commitment to CCM studies prior to the course. Furthermore, since CCM courses are effective in increasing students' overall CQ during the period of a semester, the positive attitudes (satisfaction and commitment) toward CCM were increased at the end of the course. We suggest that understanding the relationship between students' CQ and their attitudes toward CCM studies is particularly important when nurturing future global managers who

are willing to take on the challenges of a dynamic and complex international environment.

Last, we hope to further the excellent discussion established recently at the *Academy of Management Learning and Education* in 2013 by providing an extension to the *theoretical base* for how CQ can have important impacts on attitudinal outcomes. Survey scales and CQ instruction techniques are available upon request.

APPENDIX I

Treatment Applied to CCM Students

The treatment applied to the CCM students was based on a two-part system. The first utilized the textbook, *International Management Behavior: Leading With a Global Mindset* by Henry Lane, Martha Maznevski, Joseph DiStefano, and Joerg Dietz (Lane, Maznevski, DiStefano, & Dietz, 2009). This was the only textbook used throughout the semester. The book is intended to help develop the knowledge, perspective, and skills that global managers need to function effectively in different cultural environments and to work effectively with people from other cultures. The goal is to develop cultural intelligence and global leadership competencies to enable the creation of value in international settings. The book consists of 7 primary chapters with 9 case studies:

- The Global Manager
- Intercultural Effectiveness in International Management
- The MBI Model for High Performance
- Managing Global Teams and Networks
- Executing Global Strategy
- Selecting and Developing Global Managers
- Managing Change in Global Organizations

Classes met on Tuesdays and Thursdays for 75 minutes. The Tuesday content was based on a PowerPoint presentation-style format led by the professor. The content was a single chapter of the book. During the first half of the semester, the primary purpose of the Tuesday session was to increase the student's knowledge (cognition) component of CQ. We would focus on understanding the terminology of CCM (i.e., Hofstede and GLOBE) and what the literature on the topic had found. In the second half of the semester, the Tuesday section would use cases to dig deeper into a specific CCM problem. Students would reflect on their thinking (metacognition) using the knowledge (cognition) they learned in the first half of the semester and role-play to arrive at some form of decision (behavior). The Thursday section encompassed international business current events. The professor would present between 4–6 video clips (around 4–5 min each) from sources such as the *Financial Times* and the *Wall Street Journal*. After each clip, a discussion would ensue. We would analyze the possible causes, effects, and reactions of the events in class. We sought to understand the *why*, *how*, and *who* was involved in a particular event. Students became very motivated to practice what they had been learning (and not just from the CCM class), and often saw the Thursday sections to be more satisfying (evident from a nearly perfect attendance record, even without any attendance policy). The purpose of the Thursday section was to

use all four components of CQ, with an emphasis on the motivational component.

APPENDIX II

Scale Validation: Academic Satisfaction and Academic Commitment

In the first step of our scale validation, we presented the adapted scale items to students. We asked them to read the items, evaluate

their adequacy, and compare them to the definitions of academic satisfaction and commitment. The content adequacy analysis resulted in the elimination of two satisfaction items and three commitment items. The original and adapted scales are presented below.

Second, to assess whether the academic satisfaction and commitment scales represent two distinct constructs, we conducted an explanatory factor analysis (EFA) with the four satisfaction and six commitment items. We did a principal axis factor analysis with Promax oblique rotation because (1) we were concerned about the underlying factor structure rather than locating the fewest items that explain the most variance in a construct, (2)

APPENDIX TABLE 1
Comparison of Adapted and Original Scales

Adapted Academic Satisfaction scale		Original Job Satisfaction scale
1	X	Most days I am enthusiastic about my work.
2	I feel fairly well satisfied with my IB class.	I feel fairly well satisfied with my present job.
3	I find real enjoyment in my IB class.	I find real enjoyment in my work.
4	I am often bored with my IB classes (R).	I am often bored with my job (R).
5	I like my IB class better than the average student does.	I like my job better than the average worker does.
6	X	I am satisfied with my job for the time being.
Adapted Academic Commitment scale		Original Job Commitment scale
1	I am willing to put in a great deal of effort beyond that normally expected.	I am willing to put in a great deal of effort beyond that normally expected to help this organization be successful.
2	I talk about my IB class to my friends as a great subject to learn.	I talk up this organization to my friends as a great organization to work for.
3	X	I would accept almost any types of job assignment to keep working for this organization.
4	X	I find that my values and the organization's values are very similar.
5	I am proud to tell others that I am studying IB.	I am proud to tell others that I am part of this organization.
6	X	This organization really inspires the very best in me in the way of job performance.
7	I am extremely glad that I chose IB over other electives.	I am extremely glad that I chose this organization to work for over others I was considering at the time I joined.
8	I really care about IB.	I really care about the fate of this organization.
9	For me, this is the best of all possible subjects for which to study.	For me, this is the best of all possible organizations for which to work.

APPENDIX TABLE 2
Results From EFA (Pattern Matrix)

	Scale items	Factor 1	Factor 2
Academic Commitment			
1	I am willing to put in a great deal of effort beyond that normally expected.	0.687	-0.070
2	I talk about my IB class to my friends as a great subject to learn.	0.512	0.272
3	I am proud to tell others that I am studying IB.	0.680	0.175
4	I am extremely glad that I chose IB over other electives.	0.633	0.193
5	I really care about IB.	0.887	-0.171
6	For me, this is the best of all possible subjects for which to study.	0.548	0.116
Academic Satisfaction			
7	I am often bored with my IB classes (R).	0.071	0.658
8	I feel fairly well satisfied with my IB class.	-0.062	0.693
9	I like my class better than the average student does.	0.163	0.504
10	I find real enjoyment in my IB class.	-0.017	0.765

the scales of satisfaction and commitment are assumed to be reflective, and (3) the factors that underlie the data are correlated. Multiple criteria were used for determining the number of factors to retain (Ford, MacCallum, & Tait, 1986). The break in the scree plot, the percentage of variance explained, and the number of extracted eigenvalues greater than one suggested a 2-factor solution. Also, we were able to retain all 10 items because the factor loadings exceeded the threshold of 0.50 and did not cross-load (Hair, Tatham, Anderson, & Black, 2006). Factor 1 contained six items representing academic commitment, whereas Factor 2 was composed of four items demonstrating academic satisfaction (see Table 2).

Third, we assessed the discriminant validity of the academic satisfaction and commitment scales following the procedure outlined by Anderson and Gerbing (1988). We estimated a model that forced the correlation of the satisfaction and commitment factors to 1.00 and compared it, via a Chi-Square Difference test, to the measurement model in which the correlation was estimated. If the Chi-Square value for the measurement model is significantly less than when the correlation is set to 1.00, discriminant validity is demonstrated. The Chi-Square difference test revealed that the models were significantly different ($\Delta\chi^2(1) = 85.79, p < 0.05$) and the 2-factor solution fit the data significantly better, rejecting that the constraint of a perfect correlation was an appropriate exemplification of the relationship among the two factors.

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