

Can Business Schools Make Students Culturally Competent? Effects of Cross-Cultural Management Courses on Cultural Intelligence

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The rapid increase in courses dealing with cross-cultural management (CCM), brought about by economies' globalization and increased workforce mobility motivated us to examine the impact of cross-cultural management courses on cultural intelligence. Cultural intelligence (CQ) refers to individual's abilities and skills to effectively manage interactions in cross-cultural situations. It includes four dimensions: metacognitive, cognitive, motivational and behavioral. In two multinational longitudinal studies using matched samples and pre- postintervention measures, we assessed the effects of academic CCM courses on students' CQ. We found that after the courses, students' overall CQ was significantly higher than at Time 1. No effects on CQ were detected in the control group, where students worked in multicultural settings but did not take a CCM course. Cross-cultural management courses had stronger effects on metacognitive and cognitive CQ than on motivational and behavioral CQ. We found an interesting pattern regarding students' international experience: While international experience in Time 1 positively related to students' CQ, at Time 2, this relationship became nonsignificant (Study 1). These findings contribute to understanding the antecedents of cultural intelligence and how educational interventions affect it, with practical implications for designing and developing international management education and training programs.

The rapid increase of globalization processes in many aspects of social and work life in the last 2 decades of the 20th century resulted in record numbers of individuals who, on a daily basis, interact and work with individuals who have been socialized in significantly different cultures. This situation created an acute need to understand the role of national culture in management and organizational dynamics and has led to an urgent need for employees, managers, and indeed, organizations, to become cross-culturally competent.

Practitioners and academics alike broadly agree that for today's international managers, cross-cultural competence and skills are not only desirable, but rather necessary (Chao & Moon, 2005; Ng, Van Dyne, & Ang, 2009). Several studies demonstrated that cross-cultural experiences and cross-cultural competence are either direct predictors, or mediators of managerial performance while working overseas or when working extensively with culturally diverse populations (e.g., Earley & Peterson, 2004; Kim & Van Dyne, 2012).

The acute necessity of having cross-cultural management competencies in the workplace is vividly reflected in the Association to Advance Collegiate Schools of Business' (AACSB) accreditation process. In its recent publication, *Eligibility Procedures and Accreditation Standards* (July, 2009: 4), the AACSB stated: "Complex demands on management and accounting education mirror the demands on organizations and managers" and listed four main challenges. Two of these challenges are directly related to cross-cultural management education: "Differences in organizational and cultural values" and "cultural diversity among employees and customers" (AACSB, 2009: 4). Thus, the AACSB explicitly expects that as part of an accredited business university program these challenges should be addressed through programmatic elements in undergraduate and graduate business degree programs.

The importance of effective cross-cultural interactions has encouraged researchers to identify rel-

evant competencies in the disciplines of cross-cultural psychology (e.g., Smith & Bond, 1999); cross-cultural communication (e.g., Ting-Toomey, 1999); and, more recently, international management and HRM (e.g., Thomas & Fitzsimmons, 2008). Studies indicated that certain individual characteristics are positively related to effective cross-cultural interactions. For instance, Gelfand, Erez, and Aycan (2007) found that expatriate managers' effectiveness and adjustment were predicted by both stable factors, such as the personality traits of openness to experience, conscientiousness and self-monitoring, and more malleable factors, such as attitudes.

Although the number and variety of cross-cultural management courses offered by academia and industry grew dramatically, little systematic research exists on the effects of specific academic programs on students' cross-cultural competence. Our study aims to contribute to the debate on the effects of educational interventions on students' cultural competencies, namely, the effect of university management courses on four cultural intelligence (CQ) dimensions.

In the next sections we review the CQ concept and its four dimensions. We then describe several types of academic cross-cultural training approaches and the characteristics of university courses that aim to increase students' knowledge of cross-cultural issues in management. We present our study hypotheses while discussing the context and scope of the educational environment where our work took place.

LITERATURE REVIEW

Cultural Intelligence: Nature and Conceptualization

During the last 5 years, research on cross-cultural competencies has become more sophisticated as the concept of cultural intelligence (often known as CQ) gained increased interest among management researchers. Described by Earley and Ang in their 2003 book, as well as in Thomas and Inkson's (2004) book, cultural intelligence (CQ) is a construct that seeks to integrate several existing concepts and frameworks revolving on people's abilities and skills to effectively manage themselves and to interact with others in cross-cultural situations and environments. *Cultural intelligence* has been defined as individuals' capabilities to function and

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manage effectively in culturally diverse settings (Earley & Ang, 2003).

Recent developments contributed to both theoretical and empirical progress in this new area, as evidenced by a special issue of a leading journal dedicated to CQ (Earley & Ng, 2006) and by systematic empirical operationalization and validation of the CQ construct (e.g., Ang et al., 2007; Van Dyne, Ang, & Koh, 2008). The CQ is positioned as related to, but essentially different from more stable individual differences, such as personality traits. Thus, while certain personality characteristics (e.g., Openness to Experience from the Big Five model) predict CQ levels to some degree (e.g., Ang, Van Dyne, & Koh, 2006), CQ explains variance in cross-cultural competence above and beyond stable individual differences.

The concept originates in Sternberg and Detterman's (1986) multiple intelligences framework, which put forward the concept that there are different ways to conceptualize and assess intelligence, beyond the traditional exclusive focus on cognitive elements. Cultural intelligence is a specific form of intelligence focused on capabilities to grasp, reason, and behave effectively in culturally diverse situations (Ang et al., 2007). It is a multidimensional construct that follows Sternberg's (1986) framework, where he proposed different aspects of intelligence. Three of the four dimensions, metacognition, cognition, and motivation, are seen as mental capabilities residing in internal affective and cognitive systems, while the fourth dimension, behavioral capabilities, captures the overt action domain.

According to Earley and Ang (2003), cognitive CQ focuses on explicit knowledge of values, norms, and practices in different cultures, including knowledge of social, economic, and legal systems in various cultures. Individuals with high cognitive CQ are able to analyze and understand similarities and differences across cultural contexts. Therefore, they can form more accurate expectations and are less likely to make inaccurate interpretations of cultural interactions (Triandis, 1995). *Metacognitive CQ* focuses on higher order cognitive processes, those that individuals use to organize and comprehend cultural knowledge. Related capabilities include observing and revising mental models of cultural norms and behaviors. *Metacognitive CQ* helps individuals to be better aware of others' cultural preferences and intentions before and during intercultural interactions.

Motivational CQ reflects individuals' ability to initiate, maintain, and sustain learning and other functional behaviors in culturally unfamiliar or diverse situations. Individuals with higher motivational CQ are capable of coping better, affectively and cognitively, in demanding multicultural conditions. Those with high motivational CQ tend to be inherently interested in learning about and approaching new cultural phenomena, and they are likely to be more confident when they find themselves in culturally diverse situations.

The fourth dimension is *behavioral CQ*, which reflects individuals' ability to employ the appropriate verbal and nonverbal actions when interacting with people from different cultures. Such behavior includes actions related to tone, gestures, physical space, and touching rules, dress codes, and the practice of appropriate time management norms. Those with high behavioral CQ have a flexible enough repertoire of culturally diverse behaviors and are able to display and change them according to the cultural demands of the situation.

The four CQ dimensions are qualitatively different, and each contributes in its own fashion to culturally savvy and competent interactions. While the four CQ facets are considered as conceptually independent of each other, they tend to be moderately and positively correlated (e.g., Ang et al., 2007; Van Dyne et al., 2008). To sum, CQ is an aggregate multidimensional construct where the four dimensions represent different capabilities that combine to make up the overall construct.

Following the conceptual model developed by Earley and Ang (2003); Ang, Van Dyne, Koh, and Ng (2004) developed and validated the Cultural Intelligence scale (CQS) as a measure for the four-factor CQ construct. The final version of the CQS (Ang et al., 2007) was found to be valid and reliable across samples, time, countries (e.g., Singapore and the United States) and methods (self- and peer ratings). Furthermore, the results of their six studies, conducted across different cultural, educational, and work settings, demonstrated that systematic relationships exist between CQ dimensions and specific intercultural effectiveness outcomes (Van Dyne et al., 2008). They found that CQ has unique explanatory power in predicting several aspects of intercultural effectiveness (cultural judgment and decision making, interactional adjustment, mental well-being, and task performance) above and beyond general mental ability, emotional intelligence, and individual characteristics, such as personality, age, and sex.

These results are especially important in the context of our longitudinal studies here, where we examined the effects of university courses on the CQ of an international sample of university students. Since we argue that systematic training as well as exposure to cross-cultural and international experiences can enhance individuals' cultural competence, the CQS instrument, which assesses ability rather than stable inherent capacities, serves as a suitable variable for the purpose of this study (see also MacNab, 2012). We now outline and explain our main hypothesis, which deals with the expected effects of cross-cultural management education on CQ.

THEORETICAL BACKGROUND AND HYPOTHESES DEVELOPMENT

Affecting Cross-Cultural Competence Through Training and Education

Following global trends of increased workforce immigration and mobility, many private- and public-sector organizations and, especially, multinational corporations (MNCs) have responded to the growing need for a cross-culturally competent workforce by seeking to train their expatriate or sojourner personnel through specially designed training programs (Earley & Peterson, 2004). At the same time, business schools around the world responded to these needs by preparing their students with enhanced cross-cultural skills and competencies. This led to a proliferation of teaching and educational activities designed to equip students with the necessary cross-cultural competencies and, in many business school's programs, the rapid growth of cross-cultural management (CCM) courses and modules at both undergraduate and postgraduate levels.

Often, advanced CCM classes aim not only to increase students' knowledge of cross-cultural management topics, but also to help them become more effective in cross-cultural encounters, especially in their future international management careers (MacNab, 2012). It is important, therefore, to find out whether and to what degree CCM academic training achieves these aims. Our study tackles this challenge and, building on the argument that CQ is malleable to learning and experience, we propose that professionally designed cross-cultural management courses, delivered by business schools, increase students' cultural intelligence.

While several studies looked at training methods of expatriates and their relative effectiveness (e.g., see meta-analyses by Deshpande & Viswesvaran, 1992; Morris & Robie, 2001), very few published studies empirically examined the impact of academic interventions on students' cross-cultural skills and abilities. Among the few exceptions, Gannon and Poon (1997), for instance, examined the effectiveness of cross-cultural training on cultural awareness and whether integrative (including a lecture, video, and exercises), video-based, and experiential (role-play) methods had differing effects on MBA students' cultural awareness. Using a pretest-posttest experimental design, they found that all three training methods had significant positive effects on perceived cultural awareness; however, they did not find any significant differences among the three delivery methods. Their sample was mainly U.S. nationals, and the training sessions lasted 3 hr. The Intercultural Awareness Self-Report measure was developed by the authors for the purpose of their study, but it did not undergo extensive reliability and validity tests.

More recently, Sizoo, Serrie, and Shapero (2007) used a pretest-posttest design with a control group to examine the effects of a combination of in-class and at-home exercises on intercultural sensitivity (ICSI; Bhawuk & Brislin, 1992). Participants in the treatment group were undergraduate business students in a U.S. university who were tested on ICSI before and after taking a semester-long course, Culture and International Business, containing culture-focused activities. The control group, on the other hand, took Introduction to International Business, which did not have the culture-focused activities. The authors found that the treatment group's ICSI improved significantly after the course, but the control group's ICSI did not. Of three control groups included in the study, however, only one group was demographically and educationally comparable to the treatment group's profile. Also, the statistical analysis did not involve matched samples.

The most relevant study for our context was reported in a very recent paper by MacNab (2012), who was the first to assess the impact of management education on CQ, using a pre- and posttest design. While the sample was drawn from a multicultural university student population, over 60% of participants were Chinese. MacNab found that an 8 week long educational process, which was designed specifically to enhance students' CQ using experiential learning methods, increased partici-

pants' metacognitive, motivational, and behavioral CQ. The exact procedure is not clear, but the samples were not matched and no control group was used.

Thus far, only a limited number of published studies have tested the effects of management courses on students' cultural skills and competence. While the studies above suggest that both short-term educational interventions as well as semester-long courses have significant impact on students' cultural attitudes, we believe that it is important to replicate and extend these effects by using a culturally diverse population (i.e., not only U.S.-based students); by using a more rigorous design of matched samples; and by using a different criterion variable for cultural skills such as CQ. Echoing MacNab's (2012) call for giving CQ more attention in management education, we believe that using CQ as the criterion variable would allow the field to move from assessing courses' impacts on attitudes to assessing their impact on capabilities.

Although the number of empirical studies looking at the effects and correlates of CQ with a host of attitudinal and behavioral outcomes has been steadily increasing, MacNab's (2012) study was the only published empirical study we found that tested the effects of targeted educational interventions on learners' CQ. Thus, our study aims to fill two gaps in the field: one, which exists in the management education literature, where there is a need for rigorous longitudinal studies testing the effectiveness of cross-cultural management courses; and a second gap, which exists in the cultural intelligence research stream, where there is a need to examine how and whether CQ can be improved by academic management education interventions. We pursue these aims through specifying several hypotheses and conducting two separate studies to test them. In the following section, we present our hypotheses and their rationale. We then present Study 1, which was conducted in a single country location. After presenting the results for that, we describe Study 2, which took place in several locations and also included a control group. After presenting the results for Study 2, we integrate insights from both studies and discuss our findings and their implications.

Building on the works of Gannon and Poon (1997); MacNab (2012); and Sizoo et al. (2007); our first hypothesis deals with the effects of cross-cultural (or intercultural) management courses:

Hypothesis 1: Academic training, in the form of cross-cultural management courses,

affects CQ, so that students' CQ at Time 2 is higher than their CQ in Time 1.

While we hold that overall CCM academic training (in the form of university courses) increases students' cross-cultural competence as reflected by CQ scores, we believe that certain types of courses would affect certain elements of CQ more than others. We have analyzed the CCM courses in our two studies on the basis of cross-cultural training classifications arrived at by Tung (1981) and Gudykunst and Hammer (1983). For our purposes, the relevant dimension is the relative emphasis on intellectual versus experiential learning. Intellectual-centered learning is sometimes referred to as a traditional academic approach, where lectures and readings are used as the main means of learning or study. Experiential learning places more emphasis on emotional and behavioral elements through sending students to field visits, using simulations, interactive exercises, and case studies (e.g., Kolb & Kolb, 2005; Ng et al., 2009).

Although the CCM courses examined in our studies have attempted to include experiential elements as well, overall, both Study 1 and Study 2 programs were embedded in a traditional academic environment and delivered by cross-cultural management professors, leading to a predominantly intellectual style courses. At the same time, Study 1 and Study 2 courses differed in few minor ways. While the Study 1 course was shorter and more intensive, placing relatively more emphasis on aspects pertaining to several national cultures due to its more specific training goals, Study 2's courses had less nation-specific focus, using a more general, comparative approach to teaching CCM.

Following Earley and Peterson (2004), who suggested that the main impact of academic courses is on cognitive and meta-cognitive dimensions of CQ (referred to as "mental dimensions"), we believe that the impact of our educational training interventions will differ in magnitude across the four CQ dimensions. Moreover, Van Dyne et al. (2008; Study 3) report that during their tests of whether the CQS instrument is generalizable across time, they found that undergraduate students in Singapore, who completed the survey in two different times, reported higher scores on the cognitive and behavioral CQ dimensions 4 months later, in Time 2. Their explanation for these results was that students' increase in cognitive CQ was due to their

study of cultural values, and the change in behavioral CQ was due to students' participation in experiential role-playing exercises during the management course.¹ Altogether, this leads us to offer the next hypothesis:

Hypothesis 2: Intellectually oriented CCM courses more strongly affect the meta-cognitive and cognitive dimensions of CQ than the motivational and behavioral dimensions.

In addition to the effects of CCM education, we also examined the effects of a more distal cross-cultural factor on CQ: the experience of living abroad. Following others (e.g., Earley & Peterson, 2004; Shannon & Begley, 2008), we suggest that international experience (i.e., living in foreign countries) increases one's cultural knowledge, provides opportunities to develop self-efficacy to manage culturally diverse environments, and makes students feel more at ease in culturally diverse environments.

While several studies suggested that this indeed may be the case, not many studies actually examined the effects of living abroad on cultural competence. The majority that empirically examined these effects reported that international experiences of working and living in a foreign culture positively impact various aspects of expatriates' cross-cultural skills (e.g., Gudykunst & Ting-Toomey, 1988; Mendenhall & Oddou, 1985). Sizoo et al. (2007) found that years lived abroad predicted students' intercultural sensitivity. Piaskowska and Trojanowski (in press) found that executives' international experiences during their formative years (early 20s), was a significant predictor of effective decisions made by their teams on international business aspects several years later.

Finally, there have been a few recent studies that specifically examined the effects of international experience on CQ (see Ang, Van Dyne, & Tan, 2011² for a recent review). Our conclusion is similar to that of Ang et al. (2011), who note that there are substantial inconsistencies among studies. For example, a series of studies by Ang et al. (2007) reported contradictory results regarding the relationship between international experience and CQ scores. In two of their studies, they found that international experience of both U.S. and Singa-

pore undergraduates correlated with cognitive, metacognitive, and motivational CQ. In another study, they found that international managers' international experience (number of countries an expatriate worked in) correlated positively and significantly with all four dimensions of expats' CQ. However, a fourth study, conducted with midcareer foreign professionals, found that international experience (number of countries lived in) did not correlate with any CQ dimension (Ang et al., 2007).

We also observed that not only were the effects of international experience on CQ inconsistent, the operationalization of "international experience" differed from study to study: While some studies used "length of stay" to assess international experience (e.g., Tay, Westman, & Chia, 2008), others used "the total number of countries visited" to tap international experience (e.g., Crowne, 2008).

We reasoned that one of the possible explanations for the inconsistencies reported is using inadequate metrics for assessing international experience. For example, some of the studies operationalized international experience as number of countries lived in, without indicating any minimal length of stay as a qualifying criterion. Thus, some participants may report a country they lived in for a month in the summer as a place they lived in while others may consider that only longer periods of residence abroad merit mentioning.

We agree with Ang et al. (2011) that not all international experiences are equal and that the international experience needs to be substantial enough to bring about impact. Given our participants' age group and based on our familiarity with the sample, we reasoned that a substantial international experience should be operationalized as the number of countries where students lived for at least 6 months prior to taking the cross-cultural management courses. Given the all-round experiential nature of living abroad, we expected that all four CQ dimensions would be affected by this experience and that international experience would enhance CQ.

Hypothesis 3a: International experience is positively related to students' CQ at Time 1.

While we propose that CCM courses would increase all students' CQ, we reason that this learning experience may be especially important for those students with little or no international experience. That is, we suggest that CCM courses help minimize the gap between the more and less inter-

¹ We thank one of the anonymous reviewers who brought this study to our attention.

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nationally experienced students by providing the latter with knowledge and learning experiences that are comparable to those gained by students who did have the opportunity to acquire them through living abroad.

While some evidence from other training domains supports our reasoning (e.g., Ilkiw-Lavalle, Grenyer, & Graham, 2009, found that following a 2-day intensive aggression management training, staff with prior learning experience benefited less in knowledge acquisition than inexperienced staff), we did not find studies testing such differential effects in cross-cultural management education and learning literature. For our study, we proposed that the correlation between international experience and CQ would be stronger in Time 1 (prior to taking the CCM courses) than in Time 2 (measured after courses' completion) because CCM courses partially act as relative "equalizers" of differences in cultural intelligence between the more internationally experienced and the less experienced. In accordance with our reasoning in support of Hypothesis 2 above, we expect that these effects would be more pronounced for the two cognitive dimensions: cognitive and metacognitive CQ.

Hypothesis 3b: Following cross-cultural management courses, the relationship between students' international experience and CQ at Time 2 is weaker than this relationship at Time 1.

Our last hypothesis is an extension of Hypothesis 1 above but pertains only to Study 2, which included a control group in its design:

Hypothesis 4: Cross-cultural management courses affect CQ, so that students' CQ at Time 2 is higher than their CQ in Time 1. No such effect is expected in the control group, where students took part in an international business program and had cross-cultural field experiences but did not take a CCM course.

STUDY 1 METHOD

Sample and Data Collection Procedures

Study 1 was conducted in a single location at a large research university in Austria and is based on a relatively culturally homogenous sample, comprised of mainly Austrian students who have a moderate level of prior international experience.

The CCM course focuses on preparing mostly undergraduate students enrolled in an international management program to effectively cope with cultural challenges during their study abroad semester.

The aim of the Study Abroad program, which typically runs for 4 months (a full semester) is to (a) increase students' language knowledge, (b) prepare them for international job placements by increasing their intercultural competencies, and (c) enhance their intellectual capacity by exposing them to different study programs and teaching methods. The CCM course has been taught for several years in that program and is delivered as an intensive block period of 2 1/2 days. The content of these courses consists of about 60% academic based activities, such as lectures on cultural dimensions and definitions of culture, and about 40% experiential content, such as simulation games, interaction with nationals from the target culture, and cultural self-awareness exercises. Each course is divided into two parts: The first is comprised of a common general cultural element and the second of region-specific cultural elements corresponding to where the students in that group are going to study (e.g., North-East Asia).

The final sample consisted of 289 respondents who completed both Time 1 (in the first minutes of the course) and Time 2 (as the concluding activity of the course) surveys, which gives a response rate of 90%. The respondents in Study 1 consisted of 80% Austrian nationals with the remaining 20% being German (5.1%), Slovak (2.7%), Hungarian (1.8%), Italian (1.5%), Polish (1.5%) and Bosnian nationals (1.2%); 3% of the total sample was dual-nationals. Average age was (22.81 SD: 2.17), and 59% were females. The average number of countries that these students had lived in for 6 months or longer prior to taking the course is 1.94. The average number of languages the students reported speaking proficiently was 2.74 (SD: 0.95).

Measures

Cultural Intelligence

Ang et al.'s (2007) CQS questionnaire was used to measure students' cultural intelligence. The CQS is comprised of 20 items and uses a 7-point Likert-scale for response (7 corresponding to "Strongly Agree"). We chose this instrument since it gives a holistic measure of CQ as well as producing four distinct components, namely the metacognitive,

cognitive, motivational, and behavioral facets of CQ, which correspond to our conceptual interests. The following are sample items for each of these dimensions:

Metacognitive: "I am conscious of the cultural knowledge I apply to cross-cultural interactions."

Cognitive: "I know the cultural values and religious beliefs of other cultures."

Motivational: "I enjoy interacting with people from different cultures."

Behavioral: "I change my nonverbal behavior when a cross-cultural situation requires it."

Cultural intelligence was measured twice: first, at the beginning of the CCM course (Time 1); second, at the end of the CCM course, before the students go abroad (Time 2). Cronbach's alpha reliabilities of the each CQ dimension ranged between .75 and .82, which are similar in terms of the magnitude in various studies reported in Van Dyne et al. (2008).

International Experience

Students' international experience prior to the CCM course was measured by the number of countries in which students lived, worked, or were educated for at least 6 months.

Demographic Variables

Consistent with previous research linking cultural intelligence to demographic variables (e.g., Earley

& Ng, 2006), we asked each respondent to report their sex, age, and the number of languages they speak proficiently.

RESULTS STUDY 1

The means, standard deviations, correlations, and reliabilities are shown in Table 1. The magnitude of intercorrelations among the four CQ dimensions ranged from low to moderate, which is comparable to correlation magnitudes reported in recent studies using the CQS (e.g., Ang et al., 2007; Van Dyne et al., 2008).

Hypotheses testing results are presented in Tables 2 and 3. Our Hypothesis 1 posits that CCM training affects CQ in that students' CQ at Time 2 is higher than their CQ at Time 1. In order to test if there was an increase in students' CQ scores, we conducted a *t* test for the pretest and posttest scores of overall CQ. As shown in Table 2, the difference in mean overall CQ scores between Time 2 and Time 1 was positive and significant ($t = 4.33, p = .001, d = .28$); therefore, our Hypothesis 1 is supported. Our Hypothesis 2 posits that the CCM course affects more strongly the metacognitive and cognitive dimensions of CQ than the motivational and behavioral dimensions. The pre- and posttest paired sample *t* tests results indicated that the improvement 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 behavioral dimensions of CQ, however, did not improve. In fact, contrary to our expectations, motivational CQ in

TABLE 1
Means, Standard Deviations, Correlations, and Reliabilities: Study 1 ($N = 289$)

Variables	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12
1. Age	22.81	2.17	—											
2. Sex (1: male, 2: female)	1.41	0.50	-.19	—										
3. Language	2.74	0.95	.02	.11	—									
4. International experience	1.94	1.29	.17	.02	.25	—								
5. MC T1	4.72	0.95	.14	.03	.06	.18	(.78)							
6. COG T1	4.18	0.92	.10	-.01	.08	.20	.37	(.78)						
7. MOT T1	5.71	0.84	-.01	-.01	-.01	.20	.38	.43	(.80)					
8. BEH T1	4.81	1.03	.12	-.02	-.04	.14	.38	.28	.56	(.82)				
9. MC T2	5.11	0.88	-.01	.10	.03	.01	.38	.16	.20	.30	(.78)			
10. COG T2	4.56	0.85	.09	.00	.08	.02	.18	.39	.16	.06	.46	(.76)		
11. MOT T2	5.56	0.81	-.05	.10	.06	.13	.19	.25	.53	.25	.56	.35	(.75)	
12. BEH T2	4.93	0.95	.06	.04	.04	.02	.27	.07	.11	.35	.64	.31	.40	(.79)

Note. Correlations equal to or bigger than .12 are significant at $p < .05$; figures in bracket on main diagonal are Cronbach's alpha reliabilities. International experience = no. of countries lived in; Language = no. of languages proficiently spoken; MC = metacognitive CQ; COG = Cognitive CQ; MOT = Motivational CQ; BEH = Behavioral CQ; T1 = Time 1; T2 = Time 2.

TABLE 2
Average CQ Scores on Pre- and Posttests and Improvement: Study 1 ($N = 289$)

	Pretest (Time 1)	Posttest (Time 2)	Improvement: posttest–pretest	<i>t</i> value	Effect size: Cohen's <i>d</i>
Overall CQ	4.83	5.01	0.18	4.33***	.28
Metacognitive CQ	4.71	5.12	0.39	6.54***	.43
Cognitive CQ	4.18	4.55	0.37	6.53***	.43
Motivational CQ	5.74	5.56	–0.18	–3.64***	–.21
Behavioral CQ	4.83	4.93	0.10	1.58 <i>ns</i>	.11

Note. CQ: Cultural Intelligence.

*** $p < .001$, ** $p < .01$, * $p < .05$.

Time 2 has decreased ($t = -3.64, p = .001, d = -.21$), while behavioral CQ did not change significantly ($t = 1.58, ns$). This provides support for our Hypothesis 2, which states that the CCM course affects more strongly the metacognitive and cognitive dimensions than the motivational and behavioral dimensions of CQ.

Our Hypotheses 3a and 3b concern the relationship between international experience and CQ. We proposed in Hypothesis 3a that the international experience relates positively to the students' CQ at Time 1. In order to test this hypothesis, we ran hierarchical regression analyses of CQ scores at both Times 1 and 2 on international experience prior to the CCM course. In Step 1, we controlled for age, sex, and the number of languages that students speak fluently, then entered international experience in Step 2. Table 3 presents the results of hierarchical regression analyses on the international experience.

International experience was positively and significantly associated with metacognitive CQ ($\beta = .18, p < .01$), cognitive CQ ($\beta = .16, p < .01$), and motivational CQ ($\beta = .26, p < .001$) at Time 1, although its relationship with behavioral CQ at Time 1 was positive but not significant. Our Hypothesis 3a is, therefore, mostly supported.

Our Hypothesis 3b posits that the relationship between international experience and CQ becomes weaker at Time 2 than it was at Time 1. The regression results in Table 3, with Time 2 CQ scores as the predicted variable, show that except for motivational CQ, which decreased in strength but remained significant ($\beta = .15, p < .05$), international experience was not significantly associated with the other three facets of CQ. In order to determine the statistical significance of the differential association of international experience with CQ at Time 1 and Time 2, we applied Fisher's r to z transformation of correlation coefficients, then ran

TABLE 3
Hierarchical Regression of CQ Scores at Time 1 and Time 2: Study 1 ($N = 284$)

Predictors	Dependent variables							
	Metacognitive CQ		Cognitive CQ		Motivational CQ		Behavioral CQ	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Step 1								
Age	.15*	.04	.14*	.08	.04	–.03	.14*	.09
Sex (1: male, 2: female)	.03	.07	.04	.02	.06	.06	–.00	.04
Language	.02	.03	.03	.06	–.12	.03	–.05	.05
Step 2								
International experience	.18**	.04	.16**	.02	.26***	.15*	.09	.04
R^2	.07	.01	.06	.01	.07	.03	.03	.02
ΔR^2 from Step 1 to Step 2	.03**	.00	.02**	.00	.06***	.02*	.01	.00
<i>F</i>	4.86***	.58	4.15**	.90	5.28**	2.10	2.17	1.18

Note. International experience = no. of countries lived in; Language = no. of languages proficiently spoken. Coefficients are the standardized beta obtained from the final regression equation with all variables entered.

*** $p < .001$, ** $p < .01$, * $p < .05$.

α z test between Time 1 and Time 2 scores (Cohen & Cohen, 1983). Results show that the difference between Time 1 and Time 2 for metacognitive CQ ($z = 2.05, p = .02$) and cognitive CQ ($z = 2.40, p = .008$) were statistically significant. The differences for motivational and behavioral CQ, however, were not significant; therefore, our Hypothesis 3b is partially supported.

STUDY 2

We designed Study 2 to replicate findings from Study 1 in a different educational setting and to extend them under a more demanding context and design. A main limitation of Study 1 was the absence of a control group, which was not feasible given that the intensive CCM course was tailor-made for the student population involved in order to prepare them for their study abroad semester. While using a control group when assessing the impact of educational interventions is often difficult on both practical as well as ethical grounds, it is desirable, as it allows researchers to minimize the threat of "third variables" having an unknown impact on the outcome measures. For Study 2, we were able to utilize a design that included a treatment group (CCM) and a control group, thus allowing us to test Hypothesis 4.

In addition, due to the different nature of the students and programs in both studies, in many ways Study 2 represents a much tougher test of the impact of CCM courses on CQ. Treatment group participants in Study 2 were drawn from an elite Master's in International Management program, which has high candidate selectivity and is characterized by a multitude of nationalities and a requirement to master two foreign languages upon graduation. Moreover, since the CCM courses always take place in the second semester, by the time the second semester started (at which point we took our Time 1 CQ measure), students had already engaged in a full semester of international and cross-cultural experiences through studying in a foreign country or through working in culturally diverse classes. Compared to Study 1 CCM courses, those in Study 2 were somewhat more theoretically oriented, employed a comparative approach rather than region-specific, were set at a higher academic level, were longer in duration, and accounted for a larger amount of academic credits. We used the same measures and data collection procedures as in Study 1.

METHODS

Sample and Data Collection Procedures

Study 2 was conducted with postgraduate students who were enrolled in two business school master's programs. The treatment group was enrolled in the Masters in International Management (MIM) program, which is part of a global alliance for management education (referred to here as GAME), comprised of 28 leading business schools located in 27 countries. As part of the MIM program, students study in at least two countries. While most of the students still come from Europe, an increasing number comes from other continents. The core elements of the MIM include the course Global Strategy in the first semester, a CCM course in the second semester, and an internship at the end of the program. The CCM core courses are delivered during the second semester in all GAME schools. While the courses differ in their focus and coverage and are taught by different faculty, they share common themes and are positioned as advanced master's courses. Their content and format are reviewed on an annual basis by the GAME CCM Faculty Group, which is comprised of members from the alliance's business schools (see Appendix 1 for a list of core themes and approaches included in these CCM courses based on the Faculty Group's recommendation).

Data were collected by CCM course lecturers at two times: The Time 1 survey took place at the beginning of the CCM course (typically during the first day), and the Time 2 survey took place at the end of the course (or within 2 weeks of finishing the course). The duration of classes varied between 1 and 12 weeks, with the majority taking place over at least 8 weeks and accounting for 7–8 internationally standardized European Credit Transfer & Accumulation System (ECTS), which reflect the time and effort demanded from students taking a certain course.

Treatment group participants were 230 graduate students who took the CCM core course at six partner universities of the GAME network during the 2008–2009 academic year. The sample included students belonging to over 15 institutions, who studied the CCM course in large universities and business schools in one of the following countries: Ireland (12), Spain (42), Finland (13), U.K. (46), Poland (20), and Austria (17). The numbers in brackets indicate the subsamples of total usable, matching N of Time 1 and Time 2 data. Class sizes varied between 25 and 60 students, and the response rate

for Time 1 was 80%. Due to the longitudinal nature of the study design, as well as some students dropping out or missing classes, the total usable number of the matched sample was 150, representing over 65% of the total sample. The students in the treatment group were from 46 nationalities with the great majority (87.6%) being Europeans. The average age of the 150 students who participated in Study 2 was 23.7 ($SD: 2.25$), and 36% of the sample were male. The students had lived, on average, in about three countries for a period of at least 6 months in each ($M: 2.89$, $SD: 1.27$) before the start of their CCM course. The students spoke, on average, three languages at a proficient level ($M: 3.07$, $SD: 0.85$).

The control group consisted of 40 students (35 students completed both Time 1 and Time 2 questionnaires, resulting in an 87.5% response rate) enrolled in the Master of International Business Administration (MIBA) program with half coming from a major research university in Vienna, Austria, and half from a major research business school in St. Petersburg, Russia. This control group participated in an intensive 3-week summer school international marketing program worth 10 ECTS, which took place in St. Petersburg. After morning lectures from 8 a.m.–2 p.m., students worked intensively on a competitive project in culturally diverse teams consisting of 4–5 members for another 4 hr during the afternoons. Cross-cultural management issues were not included in the course curriculum. The survey at Time 1 was taken at the beginning of the course in September 2009; the Time 2 survey was taken at the end of the program 3 weeks later. Participants comprised nationalities with the majority (62.8%) being Europeans and the rest consisting of 12 Russian and 1 Chinese student. Their average age was 22.71 ($SD: 2.55$), and 40% of the sample were male. On average, the students had lived in about two countries for a period of at least 6 months in each ($M: 1.92$, $SD: 1.04$) before the start of their summer school course. On average, each student spoke three languages at a proficient level ($M: 3.03$, $SD: 0.92$).

RESULTS STUDY 2

Means, standard deviations, correlations, and reliabilities of the study variables are reported in Table 4. We report separately results for the control group and the treatment group. Cronbach's alpha reliabilities for each of the four CQ dimensions were satisfactory, ranging between .71 and .83,

which are similar to those reported in Van Dyne et al. (2008).

Hypothesis 4 posits that academic CCM courses affect CQ, so that students' CQ at Time 2 is higher than their CQ at Time 1. However, no such effect was expected in the control group, where students were exposed to international and cross-cultural field experiences but did not take a CCM course. Table 5 shows the results of pre- and posttest scores comparison of the treatment group and the control group. To assess practical impact, we also report effect sizes (using Cohen's d) for the treatment group's CQ improvement. The change in overall CQ scores from Time 1 to Time 2 (i.e., posttest score–pretest score) was positive and significant, indicating a medium effect size ($t = 4.55$, $p < .001$, Cohen's $d = .35$) for the treatment group, but it was not significant for the control group. The improvements in metacognitive CQ ($t = 4.39$, $p < .001$, Cohen's $d = .44$); cognitive CQ ($t = 3.01$, $p < .01$, Cohen's $d = .26$); and motivational CQ ($t = 2.92$, $p < .01$, Cohen's $d = .25$) were all positive and significant for the treatment group. The improvement in behavioral CQ for the treatment group was positive but not statistically significant. As shown in Table 5, no significant effect was found in any facets of CQ change in control group. Our Hypothesis 4 is therefore supported. The pattern of Study 2 results (see Table 5) partially supports Hypothesis 2, which predicted stronger changes for the two cognitive CQ facets than for motivational and behavioral CQ. Students' metacognitive CQ at Time 2 showed the strongest improvement; cognitive and motivational CQ showed similar improvement indicated by a medium effect size, while behavioral CQ did not improve significantly.

As for the relationship between international experience and CQ at Time 1 (H3a), the beta coefficients of multiple regression analyses are reported in Table 6. The beta coefficients of international experience in the equations were positive and significant for metacognitive, motivational, and behavioral CQ. It was only marginally significant ($p < .10$) for cognitive CQ. The results, therefore, generally support our hypothesis predicting a positive relationship between students' prior international experience and their Time 1 CQ scores, with the exception of cognitive CQ, where the relationship was in the right direction but only marginally significant.

Our Hypothesis H3b concerns decreased association of international experience and CQ measured at Time 2, compared to Time 1. As in Study 1,

TABLE 4
Means, Standard Deviations, Correlations, and Reliabilities: Study 2 (Treatment Group = 150; Control Group = 35)

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	M	SD
1. Age	23.7	2.25													22.71	2.55
2. Sex (1: male, 2: female)	1.64	0.48	-.19												1.59	0.50
3. Language	3.07	0.85	-.22	-.07											3.03	0.92
4. International experience	2.89	1.27	.06	-.13	.27										1.91	1.04
5. MC T1	5.20	0.80	.04	-.02	-.03	.20	.27								5.56	0.90
6. COG T1	4.20	1.03	-.04	-.04	-.24	.20	.37	(.83)							4.95	0.73
7. MOT T1	5.58	0.81	.12	-.06	.03	.10	.44	.45	(.75)						5.73	0.84
8. BEH T1	4.87	0.98	.03	.06	.10	.25	.42	.32	.40	(.77)					5.07	0.98
9. MC T2	5.54	0.76	.03	.08	-.06	.08	.29	.15	.20	.35	(.79)				5.33	0.96
10. COG T2	4.46	0.92	-.04	.05	.19	.09	.15	.35	.15	.40	.29	(.80)			4.86	0.72
11. MOT T2	5.77	0.75	.01	.03	.12	.21	.31	.20	.48	.25	.41	.19	(.76)		5.53	0.71
12. BEH T2	5.01	0.92	.14	.07	-.07	.11	.47	.19	.32	.45	.56	.27	.39	(.78)	4.90	1.00

Note. Treatment group figures are reported at lower left diagonal in boldface; correlations equal to or bigger than .19 are significant at $p < .05$. Control group figures are reported at the upper right diagonal; correlations equal to or bigger than .37 are significant at $p < .05$. Figures in bracket on main diagonal are Cronbach's alpha reliabilities. International experience = no. of countries lived in; Language = no. of languages proficiently spoken; CQ = cultural intelligence; MC = metacognitive CQ; COG = Cognitive CQ; MOT = Motivational CQ; BEH = Behavioral CQ; T1 = Time 1; T2 = Time 2.

TABLE 5
Average CQ Scores on Pre- and Posttests and Improvement for Treatment and Control Groups: Study 2

	Treatment Group (N = 150)			Effect size Cohen's d	Control Group (N = 35)		
	Pretest	Posttest	Improvement: posttest-pretest		Pretest	Posttest	Improvement: posttest-pretest
Overall CQ	4.96	5.20	0.24*** (t = 4.55)	0.35	5.30	5.16	-0.14 ns (t = -1.56)
Metacognitive CQ	5.20	5.54	0.34*** (t = 4.39)	0.44	5.56	5.35	-0.21 ns (t = -1.50)
Cognitive CQ	4.20	4.46	0.26** (t = 3.01)	0.26	4.95	4.86	-0.09 ns (t = -1.07)
Motivational CQ	5.58	5.77	0.19** (t = 2.92)	0.25	5.73	5.53	-0.20 ns (t = -1.61)
Behavioral CQ	4.87	5.01	0.14 ns (t = 1.58)	0.14	5.07	5.13	-0.17 ns (t = -1.13)

Note. CQ = Cultural intelligence. ***p < .001, **p < .01, *p < .05.

we tested this hypothesis using the same Fisher's *r* to *z* transformation followed by *z* test. Although the correlations between international experience and some of the CQ dimensions were stronger at Time 1 than at Time 2, these differences did not reach statistical significance: (metacognitive CQ: .20 at Time 1 vs .08 at Time 2; cognitive CQ: .20 at Time 1 vs .09 at Time 2; behavioral CQ .25 at Time 1 vs .11 at Time 2; see Table 4). Therefore, H3b was not supported in Study 2.

DISCUSSION

Our aim was to examine the effects of university CCM education on cultural intelligence. Our re-

sults strongly support our hypotheses, showing that CCM courses bring a significant increase in students' CQ following the course. Specifically, Hypothesis 1, which posited that CQ at the end of the CCM course would be higher compared to its level prior to the course, was supported in both studies. Hence, educational CCM intervention can be seen as a suitable instrument in preparing future international managers for the global workplace and can complement more experiential training designs that have been shown to positively affect CQ (i.e., MacNab, 2012; Sizoo et al., 2007).

Results from both our studies generally confirm Hypothesis 2. As expected, overall, CCM courses

TABLE 6
Hierarchical Regressions of CQ Scores at Time 1 and Time 2 for Treatment Group Only:
Study 2 (N = 150)

Dependent variable	Metacognitive CQ		Cognitive CQ		Motivational CQ		Behavioral CQ	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Step 1								
Age	-.02	-.01	.00	-.10	.01	-.00	.02	.10
Sex (1: male, 2: female)	-.01	.07	.02	.03	-.12	.06	.09	.08
Institution dummy 1	-.31*	-.13	-.09	-.29	-.65***	-.24	.02	-.27
Institution dummy 2	-.07	-.07	.12	-.04	-.00	-.02	.03	-.09
Institution dummy 3	-.11	-.16	-.06	-.21	-.16	-.28	.04	-.19
Institution dummy 4	-.08	-.24	.11	-.20	-.11	.00	-.17	-.23
Institution dummy 5	-.15	.01	.03	.13	-.04	.09	.00	-.05
Language	-.01	-.11	.21*	.08	.12	.04	.03	-.05
Step 2								
International experience	.23*	.13	.15 ⁺	.03	.21*	.24*	.25**	.15
R ²		.08 .06		.12* .12*	.28***	.16**	.11	.08
ΔR ² from Step 1 to Step 2		.04* .01		.02 .00	.03*	.04*	.05**	.02
F		1.41		2.17*	6.13***	2.84**	1.85	1.34
		0.99		2.08				

Note. International Experience = no. of countries lived in; Language = no. of languages proficiently spoken. Coefficients are the standardized beta obtained from the final regression equation with all variables entered.

***p < .001, **p < .01, *p < .05, ⁺p < .10.

had stronger effects on the two cognitive dimensions of CQ than on the motivational and behavioral dimensions. Specifically, we found that while metacognitive and cognitive CQ meaningfully increased following CCM courses in both studies, motivational CQ increased only in Study 2, while behavioral CQ was mostly unaffected by CCM courses. This pattern confirms our conceptual argument that intellectually oriented CCM courses would have more influence on the cognitive elements of CQ than the noncognitive elements. This pattern also corresponds to results reported by Van Dyne et al. (2008). In a study that focused on testing the reliability of the CQ scale over time, they reported that academic course content affected the cognitive CQ dimensions more, while experiential course content had stronger effects on CQ motivation and behavior. A related study by Brück (2007), which used a pre- and postdesign to evaluate the effects of short intensive intercultural training courses on students in a major Austrian university, found similar results, where in Time 2 students' largest gains were reported in the cognitive aspects; whereas changes on the behavioral and motivational aspects were much smaller.

At the same time, the relatively smaller effects found for motivational and behavioral CQ suggest that these two dimensions are less readily affected by class-based academic interventions. It is especially interesting to compare our findings with those of MacNab (2012). MacNab was strongly advocating an intensive experiential learning approach in management education as the best way to increase metacognitive, motivational, and behavioral CQ. He did not look at cognitive CQ, presumably because he did not see this dimension as responsive to experiential-learning type interventions. Our findings show that more traditional academic interventions can meaningfully affect metacognitive and, to a lesser degree, motivational CQ.

Both Studies 1 and 2 teach us interesting lessons about the conditions of time and exposure in international management education that are necessary and sufficient for impacting students' cultural competence. From Study 1 we learn that even short intensive CCM courses can effectively increase students' CQ. MacNab indicated that developing his experiential learning process took 8 weeks and acknowledged that "CQ education is a process that takes time . . . Given the richness of the approach, it might be challenging to offer this type of training in shorter periods of time" (2012: 80). Our

Study 1 addresses his call for future research on the time boundaries for effective CQ interventions. From Study 2 we learn that rich experiential multicultural exposure by itself does not suffice as a cross-cultural learning intervention, as evidenced by the control group students whose CQ did not change at all following the intensive 3 weeks of multicultural interactions. Indeed, this latter conclusion ties in with Sizoo et al.'s (2007) conclusion that cultural expertise does not increase by merely living abroad or by learning about the do's and don'ts of certain culture but requires specific cross-cultural skills training.

Taken together and building on prior studies on experiential learning, international experience, and cultural competencies (Gannon & Poon, 1997; MacNab, 2012; Ng et al., 2009; Yamazaki & Kayes, 2004), our findings suggest that motivational and, especially, behavioral CQ are more readily affected by extensive, purposefully designed experiential learning interventions or through an intensive direct experience with other cultures, gained by spending a meaningful amount of time abroad.

The results of testing Hypothesis 3, which postulated effects of prior international experience on CQ, loan further support to this line of reasoning. We found that extensive international experience (living abroad for at least 6 months) had positive and significant effects on all four CQ dimensions (with minor variations between the two studies). With these findings, we replicate and extend findings from a small number of prior studies that reported positive relationships between living abroad and cultural competence. These include Crowne (2008), who observed a similar effect examining U.S. university students' CQ, Kim and Van Dyne (2012), who suggest that prior intercultural contact and CQ represent important criteria for the development of international leadership skills, and a meta-analysis by Bhaskar-Shrinivas, Harrison, Shaffer, and Luk (2005), where authors found that expats' prior international experience significantly predicted their successful adjustment abroad.

We ventured deeper into discerning the impact of international experience, and in Hypothesis 3b, we postulated that the relationship between international experience and CQ would change after taking CCM courses. Our hypothesis that the impact of international experience on CQ diminishes following these courses was fully supported in Study 1, where these correlations ceased to be significant in Time 2. In Study 2, while the results'

trend was at the hypothesized direction for three of the four dimensions, the differences in magnitudes for international experience and CQ correlations between Time 1 and Time 2 were not statistically significant.

To explore further the findings in Hypothesis 3b, we examined whether there was a change in the variance of CQ scores in Time 2 compared to Time 1. In testing for differences in the standard deviations (*SD*) sizes for Time 1 versus Time 2, we found that in both studies the variance in students' CQ scores on all four dimensions were lower in Time 2 than in Time 1. In other words, in Time 2, students' cultural competence was relatively more homogenous than in Time 1, before they took the CCM course. Our interpretation of these results is that the CCM course brought about relatively larger gains in CQ for those students who were less culturally experienced to start with, resulting in smaller differences in CQ following the course.

Last, we discuss the differences in results between our two studies. Examining effect sizes, we see that the shorter and more intensive course of Study 1 resulted in a larger change in cognitive CQ (a large effect size of .43), than in Study 2 (moderate effect size of .26). We suggest that this is due to differences in educational level and international exposure between the two samples. Study 1 students were mostly undergraduates with limited prior international experience, studying in a much more homogenous cultural environment compared to Study 2 students, who were all graduates and had considerably more exposure to international and cross-cultural issues, having completed their first semester of the Masters of International Management program. Similarly to the rationale behind Hypothesis 3b, these more internationally experienced students had relatively less to gain from the CCM course.

A more pronounced difference between the studies was that motivational CQ decreased following the brief CCM course in Study 1 while significantly increasing following the CCM courses in Study 2. To understand the possible causes for this unexpected difference, we need to examine the different educational context of our two samples. Study 2 CCM students took part in a prestigious program with difficult entry criteria and were committed from the outset to a highly internationally diverse program requiring studies in several countries. On the other hand, Study 1 students took the CCM training course to prepare them for a term abroad following an undergraduate program that was

mostly nationally homogenous, conducted in their native language in their home country (Austria). For these students, the CCM training course served as a *realistic preview* of what to expect from their upcoming semester abroad. We believe that the detrimental effects on motivational CQ were due to students being confronted with a more realistic view of the challenges involved in living in a foreign place and coping with a foreign culture, and consequently, becoming more aware of the potential difficulties that their study abroad entailed. Also of interest, at Time 1, Study 1 students' motivational CQ was higher than the motivational CQ of the more internationally experienced student sample in Study 2 (5.74 vs. 5.56), while it was comparable to Study 2 students' motivational CQ at Time 2 (5.77).

Support to this logic comes from Gannon and Poon (1997), who reported similar results for an experiential learning group whose students showed significantly lower readiness to effectively interact with people from different cultural backgrounds following their training compared with the other two training groups. Participants indicated that the more realistic outlook of the potential for conflicts and misunderstandings in such interactions brought about this effect.

Practical Implications

It is important to note that the effects of CCM classes were not only statistically significant, but also had a meaningful practical significance as indicated by effect sizes. There are several ways to estimate the impact of our treatment. First, looking at the regression coefficients obtained for the CCM treatment, we see that they are mostly moderate to substantial (see Tables 3 and 6). Second, in looking at the paired samples *t* tests (Tables 2 and 5), we note that the effect size for the overall CQ and for the cognitive dimensions range from moderate to high or, put otherwise, students increased their cognitive/metacognitive CQ by 8–10% (Study 1) and 6–6.5% (Study 2) and their motivational CQ by 4.5% (Study 2). Last, our impact measures are comparable to those obtained in other studies that looked at the impact of various educational interventions (e.g., Hoover, Giambatista, Sorenson, & Bommer, 2010).

Especially encouraging is that in Study 2 the CCM courses increased not only students' cognitive dimensions, but also their motivational CQ. This is important because motivational CQ pre-

dicts externally rated interactional adjustment and self-reported well-being (Van Dyne et al., 2008). For business schools' career prospects, the implication is that a company recruiter would realize that including a well-designed and taught CCM course in the curriculum could increase the ability of graduates to cope better in culturally diverse situations.

Thus, one recommendation would be that business schools offer cross-cultural management classes to their students, as we can expect that CCM classes will benefit students at both undergraduate as well as graduate levels. One caveat may exist with regard to short intensive courses offered to internationally inexperienced students. We found that while this type of CCM training has markedly positive effects on the cognitive elements of CQ, it could decrease students' motivational CQ, at least for the short term. Our view builds on the extensive literature about realistic job previews (RJP). Research shows that, in general, RJP's relate to a host of positive outcomes, including higher job performance, and lower attrition from the recruitment process, initial expectations, and turnover (Phillips, 1998). We suggest that while in the short term students experience a drop in their efficacy for coping in a foreign culture, the course better prepares them for the actual experience abroad by giving them a more realistic preview of what to expect once they are abroad. It would be interesting to investigate the relative effects of brief CCM courses on students' postdeparture motivational CQ.

Of interest for educators and companies alike is the finding that CCM courses may act as "experience equalizers," allowing less internationally experienced students to "catch up" with their more experienced peers, thus minimizing the cultural competence gap between the two.

LIMITATIONS AND FUTURE RESEARCH

The two main limitations to note are related to the studies' design. First, CQ was measured using a self-report survey. This has the threat of participants' inflating (or, for that matter, deflating) their actual cultural intelligence through unrealistic estimates. Accuracy of such measures depends on the extent to which participants are able to accurately estimate their abilities. Some reassurance for the adequacy of the CQS can be drawn from the results of the rigorous multiple reliability testing it has undergone and from the findings that it has a good predictive validity for several externally as-

sessed behaviors that are important for cross-cultural success (Ang et al., 2007). Furthermore, applying multitrait multimethod techniques, Van Dyne, Ang and Koh (2008) concluded that self-rated CQs parallel observer-reported ones.

A second threat may be that students who took the CCM class may, consciously or unconsciously, report higher CQ scores at Time 2 due to their expectation that the course indeed increased it. We addressed this threat in several ways. First, the majority of Study 2 students completed the second survey several months after completing the first one, making it highly unlikely that they remembered what they wrote in Time 1. To reduce this threat further, we randomized items' order in Time 2 for all samples. Last, it would stand to reason that such effects would be found across all four CQ dimensions. However, our results indicate that the main CQ gains were in the two cognitive dimensions and that Time 2 motivational CQ even decreased in Study 2.

Notwithstanding the adequacy of CQ as a cultural competence measure, future studies should examine the effects of CCM learning on behavioral and performance outcome measures to evaluate whether the students are able to apply the knowledge and skills acquired in the courses (Kirkpatrick, 1998).

Following from our discussion on the different effects that academic- versus experiential learning-oriented educational interventions have on the various CQ dimensions, it would be worthwhile to see an investigation of educational interventions that systematically tease out the impact of various experiential learning methods both in-class (e.g., simulations, cases, multicultural team projects) as well as field-based (e.g., international study abroad tours and international internships) to determine what type of impact these interventions have on the various CQ dimensions.

CONCLUSIONS

In conclusion, our studies helped fill the gap in literature on the factors affecting cultural intelligence: Our studies show that CQ is indeed malleable to external interventions. Compared with past studies, our design was more rigorous, including not only a quasi-experimental design carried out in a naturalistic field setting, but also the utilization of a control group.

Also important, we found that academic training, through CCM courses, is effective in increas-

ing students' overall CQ. We found that academic CCM courses had pronounced effects on cognitive and metacognitive aspects of CQ, mixed effects on motivational CQ, and no significant effects on behavioral CQ. Our studies' findings also confirmed that international experience positively affects CQ and, to the best of our knowledge, ours is the first study to find that relevant educational experiences may act as substitute for some of the learning effects of actual experiences in international settings.

APPENDIX 1

List of Themes to Be Included in Core Cross-Cultural Management (CCM) Courses According to the GAME Faculty Group on CCM

Harmonizing Contents of the Core Course

The group agreed on the following contents which should be covered in each CCM core course offered by GAME. The core course should provide a cross-cultural perspective on the following issues:

- History on the various distinct ways of studying culture
- Cultural dimensions
- Decision making
- Communication
- Diversity management including teams
- Conflict management and negotiation
- Leadership

The learning objectives of the CCM Core Course are:

- A common body of knowledge on CCM
- Creating awareness of one's culture
- Fostering appreciation of diverse cultural backgrounds
- Increase competence in interacting with different cultures
- Building a global leadership competence

Teaching Philosophy and Methodology

The faculty group emphasizes *experiential learning*, including case studies, simulations and exercises. Also, the faculty group intends to foster state-of-the-art virtual learning by planning to introduce school-spanning virtual teams working on cases and assignments.

Inviting guest lecturers from companies rounds off theoretical input by the faculty and underlines the importance and practical implications of working in a multicultural and diverse environment.

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