Cultural Intelligence's Impact on Cross-Cultural Problem-Solving Performance

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Introduction

In today's world of increasing globalization, there is a growing need to understand how to effectively interact with individuals from diverse cultural backgrounds. Relatively recently, Earley and Ang (2003) developed a construct they labeled "cultural intelligence" (CQ), which they defined as a person's ability to effectively function in culturally diverse situations. Since then, CQ has been found to be associated with a wide range of outcomes, including cultural adaptation (Lin, Chen, & Song, 2012), cultural judgment, decision making, and task performance (Ang et al., 2007) and has also been related to general interaction and work adjustment of foreign workers (Dagher, 2010).

Sachsenmaier (2013) concluded that

> compared to the United States and China, Europe's educated circles remain monocultural by training. Ironically, it is now a "Middle Kingdom" mentality putting constraints on European economic, political and intellectual life. Widespread cultural ignorance no longer fits into a shifting world in which Chinese and other non-Western countries are themselves going global. (para. 12)

This leads us to recognize the need for universities to do much more to prepare students for a global society by adding cultural and globalization-related adjustments to curricula, including methods of analysis and connections with multiple disciplines. However, there is little research to suggest that cultural intelligence can actually impact a student's ability to do analysis of situations in which cultural differences play a significant role. The objective of this study is to address this gap in the literature by examining the relationship between students' level of cultural intelligence and the degree to which they are able to use this ability to analyze a business situation, identify culturally-related problems, and develop culturally appropriate solutions to those problems. Such research also has potential importance for business and other institutions that recognize the importance of multicultural interpersonal skills and wish to improve their ability to hire and/or develop these skills in their employees.

Cultural Intelligence

Training to increase knowledge alone may not be sufficient to assure the ability to adjust to cross-cultural situations, with Morris and Robie (2001) in their meta-analysis on the impact of cultural training on expatriate performance and adjustment having found weaker than expected results. Tarique and Caligiuri (2009) found that while cultural training increased knowledge, there was not a significant impact on cross-cultural adjustment. Knowledge of a

culture alone does not appear, in and of itself, to result in the increased cross-cultural performance and adjustment. Such findings prompted researchers to develop and work with a relatively new construct, which has been labeled "cultural intelligence."

Earley and Ang (2003) conceived cultural intelligence (CQ) to be an individual's capability to function effectively in culturally diverse settings. This "intelligence construct" is consistent with Schmidt and Hunter's (2000) definition of general intelligence, which they saw as "the ability to grasp and reason correctly with abstractions (concepts) and solve problems" (p. 3). The construct was also developed to fit the more global approach to intelligence, as suggested by theories of practical and multiple intelligences (Sternberg & Detterman, 1986; Sternberg & Wagner, 1986). Cultural intelligence is seen not only as one of these "multiple intelligences," it is also seen as conceptually and measurably distinct from others, such as general or analytical intelligence (IQ), emotional intelligence (EQ), and social intelligence (SI) (Ang & Van Dyne, 2008; Elenkov & Pimentel, 2008; Kim, Kirkman, & Chen, 2008). However, Crowne (2009) proposed that cultural intelligence may be seen as different from, but potentially related to, emotional intelligence, with both emotional intelligence and cultural intelligence possibly being subsets of social intelligence. A distinguishing characteristic of cultural intelligence is its application and adaptability to multiple cultural settings, while an individual's emotional intelligence may not apply in another cultural setting (Thomas, 2006). CQ is therefore a "culture-free construct," meaning that it is not culture specific (Ng & Earley, 2006; Thomas, 2006). In addition, CQ is also distinguished from a personality trait, as it represents adjustments a person can make to be effective across cultures, while a personality trait describes what a person will normally do across time and situation (Ang et al., 2007).

As conceived by Earley and Ang (2003) and developed by Van Dyne, Ang, and Koh (2008), the factors that make up the construct of the broad measure of cultural intelligence (Total Cultural Intelligence or TCQ) include metacognitive CQ, cognitive CQ, motivational CQ, and behavioral CQ. Metacognitive CQ refers to the conscious awareness that an individual has regarding cultural interactions. Cognitive CQ is seen to reflect the individual's knowledge of a particular group's values, beliefs, and norms. Motivational CQ reflects the capability to direct energy and focus to learning about cultural differences. Finally, behavioral CQ reflects the capability to choose appropriate verbal and physical actions when interacting with people of different cultures. These four dimensions of cultural intelligence are considered by Van Dyne, Ang, and Koh (2008) to be separate and statistically discrete, with all four of these dimensions having been found in studies to have importance with regards to performance (Ang & Van Dyne, 2008).

There are a number of antecedents of cultural intelligence that have been identified and/or proposed. These include international travel, work experience, study abroad, and perceived self-efficacy (Crowne, 2008; MacNab & Worthley, 2011), the personal characteristics of openness to experience, risk orientation and need for control (Engle & Nehrt, 2012), language skills, living in diverse cultural settings, cross-cultural work experience (Triandis, 2008), parental and educational experiences (Shannon & Begley, 2008), language and multicultural experiences (Engle, Dimitriadi, & Sadrieh, 2012; Shaffer & Miller, 2008), and personality (Ang & Van Dyne, 2008; Shaffer & Miller, 2008).

With respect to the potential impact of CQ on addressing culturally specific problems, it would seem that each of the four cultural intelligence dimensions may play a significant role. For example, research has suggested that one or more of the cultural intelligence

dimensions have an impact on the development of problem-solving cross-cultural negotiation skills (Engle, Elahee, & Tatoglu, 2013), cross-cultural adaptation (Dagher, 2010), cultural well-being and peer perceptions of suitability for overseas work (Peng, Van Dyne, & Oh, 2015; Ward & Fischer, 2008), the likelihood of accepting a job in a foreign country (Engle, Dimitriadi, & Sadrieh, 2012), task performance (Ang et al., 2007), trust within teams (Rockstuhl & Ng, 2008), group performance (Huber & Lewis, 2010), global leadership skills (Ng, Van Dyne, & Ang, 2009), and expatriate performance (Lee & Sukoco, 2010).

The above findings, especially those by Dagher (2010) regarding the positive relationship of CQ and cultural adaptation, in which the motivational and behavioral dimensions have a significant positive impact on general adjustment, interaction adjustment and work adjustment, and the work of Ward and Fischer (2008) that found motivational CQ to have a significant positive impact on general cultural adjustment, lead us to suggest the following hypotheses:

> *H1: Metacognitive CQ will have a significant positive impact on the subject's ability to appropriately address a culturally-related case problem.*
> *H2: Cognitive CQ will have a significant positive impact on the subject's ability to appropriately address a culturally-related case problem.*
> *H3: Motivational CQ will have a significant positive impact on the subject's ability to appropriately address a culturally-related case problem.*
> *H4: Behavioral CQ will have a significant positive impact on the subject's ability to appropriately address a culturally-related case problem.*

Methodology

The sample for this study consisted of a convenience sample of 210 mostly upper-class university students from one U.S. university. Subjects were from a wide cross-section of majors from the schools of business, communications, arts and sciences, and health sciences and had an average age of 20.9 years and an average of 3.5 years of university education (see Table 1).

Table 1 *Study Subjects*

	Number	Mean	Std. Dev.
Women	101	-	-
Men	109	-	-
Total Subjects	210	-	-
Age	-	20.9	2.40
Education*	-	3.5	1.21

*Education = number of years of university

The instrument used in this study to measure the CQ factors was a 20-item instrument developed and extensively tested for reliability and validity by Van Dyne et al. (2008). Their results indicated a robust instrument with a high degree of validity and reliability, including a convergence validity of observed CQ and self-report CQ in which they were found to have an acceptably high correlation. Their self-report instrument was used in this study. Additional research (Shannon & Begley, 2008) confirmed this instrument to have "strong psychometric characteristics with a stable factor structure" (p. 51). Confirmatory

factor analysis of the four CQ factors was also conducted for this study (maximum likelihood, varimax rotation), which also confirmed all four CQ factors with a Chi-square of 801.19 (180 *df*), CFI of 0.94. and RMSEA of 0.081. In addition, internal reliability was conducted with these data in which all Cronbach alpha scores were found acceptable at or above .700 (see Table 4), as suggested by Hair et al. (2006).

All surveys were administered in a classroom setting and participation was voluntary. There was a 98% participation rate with 240 surveys collected. From these surveys, those completed by subjects who were not U.S. citizens were eliminated, as were surveys that were not fully completed, resulting in 210 usable surveys. Survey questions used a seven-point Likert scale with "1 = strongly disagree" and "7 = strongly agree." An example of the questions used is "I know the legal and economic systems of other countries." This survey was administered approximately two weeks before administration of the case study phase in order to minimize potential "connection bias," which might have occurred if the two parts were administered together. No mention was made of the case study and the CQ instrument being connected until after the case study phase was completed.

The classroom use of case studies that offer complex problem situations has been frequently used in a range of learning environments to develop and potentially reflect the level of critical thinking abilities of the student as related to specific areas and disciplines (Bannon 2014; Evans, 2016; Garvin, 2007). As suggested by Bean (2011), writing is not only a method of developing critical thinking but also has the potential to evaluate the degree of critical thinking and problem solving in the classroom. This study used a written analysis as the medium for evaluation of the specific problem solving domain addressed. This study assessed the subjects' knowledge and abilities in cultural intelligence based on their ability to effectively develop an appropriate strategy to address a complex cross-cultural problem situation as described in a case study.

The case used in this study was adapted from one published by Deresky (2006) and was approximately three pages in length. The case described in some depth the negotiation process and interaction between managers from two non-U.S. countries, who represented national cultures distinctly different from the Unites States. It was written in such a way that a number of cultural and non-cultural potential problems were suggested. The case used in the study was first evaluated by three international business professors to see if the case and questions would be considered suitable to evaluate cross-cultural awareness and decision making. Minor revisions were made and then given to three current international business managers to check the suitability and interpretation of the professors. All six reviewers agreed that cultural-related problems were the primary source of the related case problems. Finally, a class of 20 university students was administered the case as a pilot test to assure that it would be understood and to once again check to see if a range of analyses and solutions were identified, and to check the time allotment that students would comfortably need to complete the exercise (approximately 75 minutes).

The following directions were given for the case analysis: "Please read the case carefully and answer the following questions. You may need to read the case multiple times to answer these questions. Please write clearly." There were four specific questions that the subjects were asked to answer:

1. List the problems or issues in this case that you believe to be potentially important in identifying what went wrong, as well as what will need to be addressed to remedy the situation.
2. Of the problems or issues listed in Question 1, which **ONE** problem/issue do you see as the most important to be addressed.
3. What are the "case facts" (evidence in the case itself) that led you to see this as the single most important problem or issue. Give as many facts as necessary to explain your choice.
4. List at least five steps you would suggest are needed to correct this "most important" problem and/or assure it does not happen again.

These questions were used in order to both allow for comparison of student responses, and at the same time, guide their analysis and response to areas where the use of cultural intelligence may be evaluated. Students were administered the case and allowed 90 minutes to complete the case analysis and answer the questions in a "Blue Book."

Two international business faculty members (both previous industry expatriates) and one very experienced current expatriate business manager scored the cases. Definitions of "culture" and appropriate responses were discussed based on pilot tests conducted. The twenty original cases were independently scored (4-point scale) by all three individuals, with an inter-rater reliability scores of 85%, 95% and 95%.

The following criteria for the scale were used for the scoring of the cases:

4 – Appropriately sees culture/cultural differences as the major problem and gives adequate support for this view in the "why" and appropriately addresses cultural issues in the "how."

3 – Appropriately lists culture/differences as one of the possible problems, but not as the major problem, but does address to some appropriate degree cultural issues in the "how."

2 – Appropriately lists culture/differences as one of the possible problems, but does **not** address, or address appropriately, these cultural issues in the "how": If listed as a major problem is not able to support this position with case facts or does not appropriately address any cultural issues in the "how."

1 – Does not use cultural issues in an appropriate manner, or has very little or no references to appropriate cultural issues as playing a role.

All 210 cases were scored independently by one professor and the expatriate manager. Those cases where scores differed were then done by the second professor, and the score of agreement was the one used.

Results
As seen in Table 2, the mean scores for the four factors ranged from a low of 3.53 for cognitive CQ to a high of 4.97 for motivational CQ while the average case score was 2.02. Table 3 displays the range of the case score with 40% of the subjects not seeing cultural issues as having importance in the case and 60% see varying degrees of importance. Within this latter group, only 28% saw culture as playing some degree of a role in the problems and also

included some appropriate culturally-related strategies when identifying steps to address the primary problem.

Table 2 *Descriptive Statistics*

	Mean	Std. Dev.	Number
Metacognitive	4.80	.909	210
Cognitive	3.53	.834	210
Motivational	4.97	1.02	210
Behavioral	4.35	.985	210
Case Result	2.02	1.06	210

Table 3 *Case Scores*

Score	Frequency	Percentage
1 - poor	84	40%
2	68	32%
3	26	13%
4 - excellent	32	15%

Table 4 displays the correlations of the research and control variables, as well as Cronbach alphas for the questions used to measure the four CQ dimensions. Of the control variables, both age and education had a significant correlation with the case result, although the four CQ factors each had somewhat stronger significant correlations with each of the CQ factors.

Table 4 *Correlations*

	Alpha	Age	Gen	Edu	Meta	Cog	Mot	Behave	Case Result
Age	-	1							
Gender	-	.038	1						
Education	-	**.404**	.114	1					
Metacognitive	.801	.177	-.086	.094	1				
Cognitive	.782	.087	.056	.131	**.428**	1			
Motivational	.793	.098	-.020	.057	**.321**	**.308**	1		
Behavioral	.860	.017	-.069	.111	**.570**	**.456**	**.451**	1	
Case Result	-	**.175**	.037	**.224**	**.282**	**.289**	**.339**	**.339**	1

Bold = p<.05

As can be seen in Table 5, in the hierarchical regression model with just the control variables (Model 1), 4.5 percent of the variance is explained primarily by education, which is the only significant variable among the controls. Model 2, which includes all variables, demonstrates the significantly greater impact of the CQ factors, explaining an additional 16.2% of the variance, bringing the overall R^2 to .234. Of the four CQ dimensions in this model, motivational and behavioral CQ were significant, thus supporting hypotheses H3 and H4, which suggested that motivational CQ and behavioral CQ would have significant positive impacts on the case scores.

Table 5 *Multiple Regressions (Std. Beta)*

	Model 1	Model 2
Age	.101	.077
Gender	.012	.032
Education	.182**	.141*
Metacognitive		.070
Cognitive		.102
Motivational		.205**
Behavioral		.136*
Case Result	DV	DV
F-Score	4.27	7.79
R^2	.059	.234
Adj. R^2	.045	.207
Δ Adj. R^2	-	.162

DV = dependent variable   *p<.05; **p<.01

H1 and H2, which stated that metacognitive and cognitive CQ would have the same impact, were not supported. Collinearity statistics using Variance Inflationary Factor (VIF) were run, with none having a VIF score of greater than 1.7. Levine et al. (2005) conservatively suggested that VIF scores below 5.0 would suggest that collinearity between variables should not be a problem when interpreting the regression results.

Discussion
The objective of this study was to examine the relationship between a student's level of cultural intelligence and his or her ability to use that knowledge to analyze a business situation and identify culturally-related problems as well as develop appropriate solutions to those problems. These results suggest that motivational cultural intelligence and behavioral cultural intelligence do significantly enhance this ability, as do the number of years of university education. These results reinforce the previous findings of positive impacts of motivational (the drive and effort exerted to improve cultural intelligence) and behavioral cultural intelligence (the ability to appropriately adjust one's cultural behavior) on a range of performance behaviors, including cultural adaption (Ward & Fischer, 2008), team performance (Huber & Lewis, 2010), and expatriate performance (Lee & Sukoco, 2010), and extend our knowledge of the impact on these performance outcomes to include the ability to successfully complete a culturally oriented case study analysis. For business managers and educators, the case for the importance of cultural intelligence as a predictor of performance continues to be reinforced with the results of this study.

This research supports and builds on findings that show motivational and behavioral CQ to be important in cultural adaptation (Dagher, 2010; Ward & Fischer, 2008). It can be assumed that cultural adaptation ability would need to include varying degrees of cross-cultural problem-solving ability. However, it is interesting to note that in this study metacognitive and cognitive intelligence were not significant predictors of the case analysis results. Both of these CQ dimensions have been found to be significant when using team measures of CQ (Flaherty, 2008; Rocksthul & Ng, 2008), and metacognitive CQ was also found to be significant for individual performance in negotiations behavior (Engle, Elahee, &

Tatoglu, 2013). Thus, it was thought that they both also have a role to play in cross-cultural problem solving. Metacognitive CQ as defined and measured in this study refers primarily to the awareness the subject has regarding the presence of cultural issues, while cognitive CQ may be seen as specific cultural knowledge. Given that 40% of the subjects in this study were apparently not aware of the cultural interactions causing significant problems in the case, and another 32% did not develop a solution addressing cultural issues, it is possible that these weaknesses reflect a lack of metacognitive and cognitive CQ and/or a level of metacognitive CQ that was not at a threshold necessary to suggest culture as a source of the case problem.

The finding indicating the importance of the level of university education is potentially important as it may not only reflect the development of cultural intelligence but also the development of critical thinking, which is a key focus of many universities, including the university used in the study. In today's business landscape, the skills that are described by the phrase *critical thinking* are crucial to employee success (Tallent & Barnes, 2015). Among those who speak to this need, the Association of American Colleges and Universities (2015) offered this description of critical thinking in its General Education Maps and Markers Design Principles: "demonstrable, portable proficiencies aligned to widely valued areas of twenty-first century knowledge and skills, including the development of sustainable problem solving skills through problem centered work on significant issues relevant to their interests and aims" (p. 3). Increasingly global interaction, as well as our massive access to various kinds of information, presents increasingly complex problems, and researchers have noted that success in solving these problems requires critical thinking (Page & Mukherjee, 2007).

Critical thinking's relationship to skills and behaviors has a long history of discussion (Brell, 1990; Ennis, 1996; Facione, 2000; Moore, 2011), especially as it relates to problem solving (Snyder & Snyder, 2008). Beyer (1995) suggested that critical thinking involves a number of elements that assist with effective problem solving, including the individual's personal dispositions, such as open-mindedness, skepticism, reasoning, and clarity; the application of carefully chosen criteria with which to make a decision or recommendation; construction of supporting arguments; examination of logical relationships between various data used; the ability to examine things from different points of view; and the ability to ask questions, identify assumptions and make judgements. We are suggesting that for a complex problem, such as the case addressed in this study, to be effectively solved, an individual will need not only to demonstrate a significant level of cultural intelligence, but also a corresponding level of critical thinking skills and disposition. Murensky (2000) found emotional intelligence to be independent of critical thinking, suggesting the same might be true with cultural intelligence. Future research should examine the potential relationship between cultural intelligence and critical thinking skills and how these two constructs interact.

Hammerich and Lewis (2013) argued the importance of the ability of employees to work with people with cultural differences and that this ability is increasingly valued by the corporate world. Many of our university students will be entering a globalized world of business, and as pointed out by Sachsenmaier (2013), universities need to do much more to prepare students for a global society by adding globalization to curricula—including methods of analysis and connections with multiple disciplines. Given that the subjects in this study had 3.5 years of university education and that the average case result score was barely

above 2.02 (on a scale of 1–4), this study would support his observation. All educators need to do more to facilitate the growth of a student's cultural intelligence, as the need for cultural intelligence extends beyond business organizations to politics, the arts, and any function that requires teamwork within what have become our multicultural societies.

The importance of cultural intelligence in today's competitive global environment suggests the need for business organizations to have a clear and active role in addressing this critical ability. This can be done—not only by managers and human resource departments assessing potential new employees, but also by training and development departments—using techniques suggested by Ang and Van Dyne (2008) or Livermore (2010) or case study techniques as suggested in this research.

The primary limitation of this research study is the difficulty in generalizing beyond its sample population, as only one university was used. Also, there was no incentive given to complete the exercise, which required a rather extensive time commitment, so full effort may not have been given by study participants, as they might have seen little or no direct personal value resulting from the effort. While the study variables did capture a little over 20% of the variance in case performance, this still leaves a lot of variance unexplained. Future research should extend the number of variables examined, including such things as personality, characteristics of international experience and perhaps grade point average and courses taken. While these students were 20.9 years of age and about to transition to their careers, we can only make assumptions as to the difference between this sample and one of older and more experienced, working adults. This study administered only one case analysis for evaluation and does not address the potential variance in students' use of writing to reflect their ability to identify appropriate problems and develop appropriate strategies. Multiple cases addressing a wider range of cultural situations and administered during multiple time periods would significantly strengthen the generalizability of the results. Finally, especially with multiple fields of study, such as used in this study, it would also be of interest to control for the impact of the degree of experience a student has doing case study analysis. Future research needs to address these limitations.

References

Association of American Colleges and Universities. (2015). *General education maps and markers: Designing meaningful pathways to student achievement*. Washington, DC: Author.

Ang, S., Van Dyne, L., Koh, C., Ng, K.Y., Templer, K. J., Tay, C., and Chandrasekar, N. A. (2007). Cultural intelligence: Its measurement and effects on cultural judgment and decision making, cultural adaptation and task performance. *Management and Organization Review, 3*, 335–371.

Ang, S., and Van Dyne, L. (2008). *Handbook of cultural intelligence: Theory, measurements, and applications*. London, United Kingdom: Sharpe.

Bannon, S. (2014). Case studies in introductory courses. *Journal of Business Case Studies, 10*(3), 293–302.

Bean, John C. (2011). *Engaging Ideas: The professor's guide to integrating writing, critical thinking, and active learning in the classroom* (2nd ed.). San Francisco, CA: Jossey-Bass.

Beyer, B. K. (1995). *Critical thinking*. Bloomington, IN: Phi Delta Kappa Educational Foundation.

Brell, Carl. (1990). Critical thinking as transfer: The reconstructive integration of otherwise discrete interpretations of experience. *Educational Theory, 40*(1), 65–82.

Garvin, D. A. (2007). Teaching executives and teaching MBAs: Reflections on the case method. *Academy of Management Learning & Education, 6(3),* 364–374.

Crowne, K. A. (2008). What leads to cultural intelligence? *Business Horizons, 51*, 391–399.

Crowne, K. (2009). The relationships between social intelligence, emotional intelligence and cultural intelligence. *Organization Management Journal, 6*, 148–163.

Dagher, G. K. (2010). The relation between motivational and behavioral cultural intelligence and the three dimensions of cross-cultural adjustment among Arabs working in the USA. *The Business Review, Cambridge,15*, 137–143.

Deresky, H. (2006). Martinez Construction company in Germany. In *International management* (5th Ed.) (pp. 174–176). Upper Saddle River, NJ: Pearson Prentice Hall.

Earley, P. C., and Ang, S. (2003). *Cultural intelligence: Individual interactions across cultures.* Stanford, CA: Stanford Business Books.

Elenkov, D., and Pimentel, R. (2008). Social intelligence, emotional intelligence, and cultural intelligence: An integrative perspective. In S. Ang & L. Van Dynes (Eds.), *Handbook of cultural intelligence: Theory, measurements, and applications* (pp. 289–305). London, United Kingdom: Sharpe.

Engle, R., Dimitriadi, N., and Sadrieh, F. (2012). Cultural intelligence: Antecedents and propensity to accept a foreign-based job assignment. *Journal of Applied Management and Entrepreneurship, 17*(2), 63–79.

Engle, R., Elahee, M., and Tatoglu, E. (2013) Antecedents of problem-solving cross-cultural negotiation style: Some preliminary evidence. *Journal of Applied Management and Entrepreneurship, 18*(2), 83–102.

Engle, R. L., and Nehrt, C. C. (2012). Antecedents of cultural intelligence: The role of risk, control, and openness in France and the United States. *Journal of Management Policy & Practice, 13*, 35–47.

Ennis, R. (1996). Critical thinking dispositions: Their nature and assessability. *Informal Logic, 18*(2&3), 165–182.

Evans, C. (2016). Re-thinking case-based assessments in business management education. *The International Journal of Management Education, 14*(2), 161–166.

Facione, P. (2000). The disposition toward critical thinking: Its character, measurement, and relationship to critical thinking skill. *Informal Logic, 20*(1), 61–84.

Hair, J., Black, W., Babin, B., Anderson, R., and Tatham, R. (2006). *Multivariate data analysis* (6th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.

Hammerich, K., and Lewis, R. (2013). *Fish can't see water: How national cultures can make or break your corporate strategy*. New York, NY: Wiley.

Huber, G., and Lewis, K. (2010). Cross-cultural understanding: Implications for group cognition and performance. *Academy of Management Review, 35*(1), 6–26.

Kim, K., Kirkman, B., and Chen, G. (2008). Cultural intelligence and international assignment effectiveness. In S. Ang & L. Van Dynes (Eds.), *Handbook of cultural intelligence: Theory, measurements, and applications* (pp. 71–90). London, United Kingdom: Sharpe.

Lee, L., and Sukoco, B. (2009). The effects of cultural intelligence on expatriate performance: The moderating effects of international experience. *International Journal of Human Resource Management, 21*(7), 936–981.

Levine, D., Stephan, D., Krehbiel, T., and Berenson, M. (2005). *Statistics for managers*. Upper Saddle River, NJ: Prentice Hall.

Lin, Y.-C., Chen, A. S.-Y., and Song, Y.-C. (2012). Does your intelligence help to survive in a foreign jungle? The effects of cultural intelligence and emotional intelligence on cross-cultural adjustment. *International Journal of Intercultural Relations, 36*, 541–552.

Livermore, D. (2010). *Leading with cultural intelligence*. New York, NY: AMACOM.

MacNab, B., and Worthley, R. (2011). Individual characteristics as predictors of cultural intelligence development: The relevance of self-efficacy. *International Journal of Intercultural Relations*. doi.10.1016/j.ijintrel.2010.12.coi

Moore, T. J. (2011). Critical thinking and disciplinary thinking: A continuing debate. *Higher Education Research & Development, 30*(3), 261–274.

Morris, M., and Robie, C. (2001). A meta-analysis of the effect of cross-cultural training on expatriate performance and adjustment. *International Journal of Training and Development, 5*(2), 112.

Murensky, C. L. (2000). The relationships between emotional intelligence, personality, critical thinking ability and organizational leadership performance at upper levels of management. *Dissertation Abstracts International: Section B: The Sciences and Engineering, 61*(2-B), 1121.

Ng, K.-Y., and Earley, P.C. (2006). Culture + intelligence: Old constructs, new frontiers. *Group & Organization Management, 31*, 4–19.

Ng, K., Van Dyne, L., and Ang, S. (2009). From experience to experiential learning: Cultural intelligence as a learning capability for global leader development. *Academy of Management Learning and Education, 8*(4), 511–526.

Page, D., and Mukherjee, A. (2007). Promoting critical-thinking skills by using negotiating exercises. *Journal of Education for Business, 82*(5), 251–257.

Peng, A., Van Dyne, L., and Oh, K. (2015). The Influence of motivational cultural intelligence on cultural effectiveness based on study abroad: The moderating role of participant's cultural Identity. *Journal of Management Education, 39*(5) 572–596.

Rockstuhl, T., and Ng, K. (2008). The effects of cultural intelligence on interpersonal trust in multicultural teams. In S. Ang & L. Van Dyne (Eds.), *Handbook of cultural intelligence: Theory, measurements, and applications* (pp. 206–220). London: Sharpe.

Sachsenmaier, D. (2013, June). Countries globalized, but education lagging. *YaleGlobal Online*. Retrieved from http://yaleglobal.yale.edu/content/countries-globalized-education-lagging

Schmidt, F., and Hunter, J. (2000). Select on intelligence. In E. A. Locke (Ed.), *The blackwell handbook of organizational principles* (pp. 3–14). Oxford, United Kingdom: Blackwell.

Shaffer, M., and Miller, G. (2008). Cultural intelligence: A key success factor for expatriates. In S. Ang & L. Van Dyne (Eds.), *Handbook of cultural intelligence: Theory, measurements, and applications* (pp. 107–125). London: Sharpe.

Shannon, L., and Begley, T. (1986). Antecedents of the four-factor model of cultural intelligence. In S. Ang & L. Van Dynes (Eds.), *Handbook of cultural intelligence: Theory, measurements, and applications*, (pp. 41–55). London: Sharpe.

Snyder, L., and Snyder, M. (2008). Teaching critical thinking and problem solving skills. *Delta Pi Epsilon Journal, 50*(2), 90–99.

Sternberg, R., and Detterman, D. (1986). *What is intelligence? Contemporary viewpoints on its nature and definition.* Norwood, NJ: Ablex.

Sternberg, R., and Wagner, J. (2006). The theory of multiple intelligences: some issues and answers. In Sternberg, R., and Wagner, J. (Eds.), *Practical intelligence*, (pp. 163–182) New York: Cambridge University Press.

Tallent, R., and Barnes, J. (2015). Think bubbles and Socrates: Teaching critical thinking to millennials in public relations classes. *Universal Journal of Research, 3*(7), 435–441.

Tarique, I. and Caligiuri, P. (2009). The role of cross-cultural absorptive capacity in the effectiveness of in-country cross-cultural training. *International Journal of Training and Development, 13*(3), 148.

Thomas, D. (2006). Domain development of cultural intelligence: The importance of mindfulness. *Group and Organization Management, 31*, 78–99.

Triandis, H. (2008). Cultural intelligence. In S. Ang & L. Van Dynes (Eds.), *Handbook of cultural intelligence: Theory, measurements, and applications* (pp. xi-xiii). London, United Kingdom: Sharpe.

Van Dyne, L., Ang, S., and Koh, C. (2008). Development and validation of the CQS. In S. Ang & L. Van Dyne (Eds.), *Handbook of cultural intelligence: Theory, measurements, and applications* (pp. 16–38). London, United Kingdom: Sharpe.

Ward, C., and Fischer, R. (2008). Personality, cultural intelligence and cross-cultural adaption. In S. Ang & L. Van Dyne (Eds.), *Handbook of cultural intelligence: Theory, measurements, and applications* (pp. 159–173). London, United Kingdom: Sharpe.