The relationship between transformational leadership and cultural intelligence

A study of international school leaders

Emerson K. Keung
Hong Kong, China, and
Amanda J. Rockinson-Szapkiw
School of Education, Liberty University, Lynchburg, USA

Abstract

Purpose – The purpose of this study is to examine if there is a relationship between the factors of cultural intelligence and transformational leadership in international school leaders.

Design/methodology/approach – This correlational research study examined 193 international school leaders, who participated in a survey that included the Cultural Intelligence Scale and the Multifactor Leadership Questionnaire 5X. A standard multiple regression analysis was used to determine if the factors of cultural intelligence predict transformational leadership. The individual contribution of each factor to the model was examined.

Findings – The results indicate that there is a significant positive relationship between cultural intelligence and transformational leadership in international school leaders. Leaders who have a higher level of cultural intelligence exhibit a higher level of transformational leadership style, which suggests that individuals with high-cultural intelligence are able to lead and to manage more effectively in multicultural environments. Behavioral cultural intelligence and cognitive cultural intelligence were found to be the best predictors of transformational leadership.

Practical implication – The results provide insight into the selection, training, and professional development of international school leaders. Practical implications are provided for integrating cultural intelligence into higher education curriculum.

Originality/value – This paper makes a unique contribution to the nomological network of cultural intelligence by identifying which factors of cultural intelligence best predict transformational leadership in international school leaders, a population to which this model had not been previously applied.

Keywords Transformational leadership, Cultural intelligence, International schools,
Intercultural schools, Leaders

Paper type Research paper

Globalization is a reality facing educational institutions, businesses, and multinational organizations (Moon, 2010b; Ruby, 2005; van Woerkom and de Reuver, 2009). This phenomenon manifests itself as an increasing interconnectedness and interdependence of people, organizations, and countries across national borders (Meyer, 2007). The US educational school system will see minorities increase to the extent that minority and majority children will be equal by 2023 (United States Census Bureau, 2008). Singapore has intentionally arranged its educational system to ensure that Chinese, Eurasian, Indian, and Malayan students are all able to succeed educationally (Walker and Dimmock, 2005). Intercultural schools are a microcosm of the globalization occurring

www.mana

throughout the world. Due to their recent exponential growth, one configuration of intercultural schools that is of particular interest is international schools (Bunnell, 2008; Pearce, 2011; Walker *et al.*, 2007). According to ISC Research (2012) there are 6,286 international schools operating in 236 countries.

Previous research has demonstrated that transformational leadership is related to increased teacher commitment, student learning, and engagement (Leithwood and Jantzi, 2005; Silins and Mulford, 2002). Transformational leadership has also been consistently related to organizational and leadership effectiveness (Bass and Riggio, 2006; Wang *et al.*, 2011). A large number of studies have examined the effects and nature of transformational leadership within US schools; however, a search of the literature revealed that research on the effectiveness of transformational leadership in the international school setting is limited (Mancuso *et al.*, 2010). A better understanding of the nature of transformational leadership in the international school setting is important given the trend toward increasing globalization.

Culture is also a factor that needs to be considered when studying the effectiveness of international school leaders and their highly diverse multicultural contexts**.** Cultural intelligence is based on a multidimensional framework of intelligence. It is defined as "an individual's capability to function and manage effectively in culturally diverse settings [...] a multidimensional construct targeted at situations involving cross-cultural interactions arising from differences in race, ethnicity, and nationality" (Ang *et al.*, 2007, p. 336; see also Earley and Ang, 2003). As cultural intelligence has emerged in the business literature as an important factor underlying effective performance and leadership in multicultural settings (Alon and Higgins, 2005; Ang and Inkpen, 2008; Deng and Gibson, 2009), the present study examines the relationship between international school leaders' cultural intelligence and transformational leadership. The results provide insight into the selection, training, and professional development of international school leaders, and into the integration of cultural intelligence into higher education curriculum.

Leadership
Leadership has been conceptualized in various ways. In the past 70 years, over 65 different approaches to effective leadership have been developed (Fleishman *et al.*, 1991). Instructional leadership and transformational leadership are the two most influential models applied to educational leadership (Hallinger, 2003; Robinson *et al.*, 2008). Recent work by Robinson *et al.* (2008) has shown that instructional leadership has three to four times the impact on student outcomes compared to transformational leadership as transformational leadership centers around the relationship between leaders and followers as opposed to focussing on specific pedagogical work. Although instructional leadership has been shown to influence student achievement, transformational leadership is the most commonly used definition of effective leadership in recent empirical literature and has been shown to be the most effective form of leadership when studying overall organizational and leader effectiveness (Bass and Riggio, 2006; Northouse, 2010). Transformational leadership has been the focus of research that has been conducted on every continent and in almost every industrialized nation in the world (Bass and Riggio, 2006). The conceptualization of effective leadership as transformational leadership is deemed appropriate for studying international leaders in a variety of settings (Bass and Riggio, 2006; Mancuso *et al.*, 2010).

The transformational approach provides a broad set of personal attributes and practices that are typical of transformational leaders (Judge and Bono, 2000). Bass' (1985) transformational leadership model suggests that transformational leaders

exhibit five factors: idealized influence (attributed), idealized influence (behavior), inspirational motivation, intellectual stimulation, and individualized consideration (Bass and Bass, 2008; Bass and Riggio, 2006). This research suggests that transformational leadership is an effective leadership approach above and beyond transactional leadership (Bass and Riggio, 2006).

Idealized influence (attributed) reflects the degree to which followers view the leader as confident, powerful, and focussed on higher-order ideals and ethics (Antonakis *et al.*, 2003). Idealized influence (behavior) refers to the "charismatic actions of the leader that are centered on values, beliefs, and a sense of mission" (Antonakis *et al.*, 2003, p. 264). Inspirational motivation is the ways leaders inspire followers by envisioning an optimistic future, setting ambitious goals, and offering encouragement that the vision is achievable (Bass and Riggio, 2006). The ways that leaders challenge followers to think creatively, reframe difficult problems to find solutions, and encourage innovation is known as intellectual stimulation (Bass and Riggio, 2006). Individualized consideration is the ways in which leaders advise, support, and focus on the individual needs of followers to encourage their growth and development (Antonakis *et al.*, 2003).

Transformational leadership in the school setting
Transformational leadership has been linked to a number of individual and organizational outcomes within the public and private school settings in Australia, Hong Kong, UK, and the USA (Leithwood and Jantzi, 2005). At the individual level, transformational leadership is positively related to teacher commitment and job satisfaction (Bogler, 2001; Ross and Gray, 2006; Silins and Mulford, 2002). At the organizational level, transformational leadership is linked to school culture, organizational planning and learning, and strategies for change (Barnett and McCormick, 2004; Leithwood *et al.*, 2004; Silins *et al.*, 2002). Both individual-level variables such as teacher commitment and job satisfaction and organizational-level variables such as school culture, organizational planning and learning, and strategies for change have been shown to make a significant contribution to student learning (Leithwood and Jantzi, 2005). Transformational leadership has been shown to be positively related to the student outcome of school engagement (Leithwood *et al.*, 2003; Silins and Mulford, 2002).

There is a plethora of literature on effective educational leadership both within national systems and across several different countries (Day and Leithwood, 2007; Leithwood and Jantzi, 2005; Leithwood *et al.*, 1996; Moos and Johansson, 2009; Walker and Cheng, 2009). Research on international school leadership, however, is limited (Collard, 2007; Lee *et al.*, 2012; Walker and Cheng, 2009). In the international school setting, transformational style of leadership is linked to increased teacher retention (Mancuso *et al.*, 2010). The reduction of teacher turnover can improve both continuity and student learning (Odland and Ruzicka, 2009). Studies on transformational leadership in an international school setting are limited as evidenced by a review of the EBSCO database. Using the key words transformational leadership and international schools, only one result was rendered. Thus, the nature and cause of transformational leadership of international school leaders have not been studied and are not clearly understood (Leithwood and Jantzi, 2005). Further empirical support is needed in order to clarify not only the consequences, but the nature and causes of transformational school leadership in international schools.

International schools
It is important to clarify international schools as defined in this study as international schools have been defined in numerous ways and differ in phase, size, gender,

curriculum, etc. (Blandford and Shaw, 2001; Bunnell, 2006; Hayden and Thompson, 2011). International schools generally exist to meet the educational needs of culturally diverse and globally mobile student bodies (Hayden and Thompson, 2011; Macdonald, 2009). Students come from a variety of contexts, such as foreign embassies, multinational companies, military settlements, missionary/religious groups, and non-governmental organizations (Cambridge and Thompson, 2004; Murakami-Ramalho, 2008). In addition to expatriate families, students from wealthy local families are choosing to attend international schools (Brummitt, 2007; Brown and Lauder, 2009; Walker and Cheng, 2009).

International schools can be characterized by a number of the following traits. The student bodies and staff are culturally diverse (Hayden and Thompson, 2011; Walker and Cheng, 2009). There is a highly transient environment created by high student and staff turnover as compared to national school systems (Hayden and Thompson, 2011; Murakami-Ramalho and Benham, 2010). Multiple constituents are involved in the educational endeavor including parents, teachers, support staff, administration, board members, passport country educational departments, host country educational departments, and sponsoring organizations (multinational organizations, missionary/ religious groups) (Caffyn, 2010; Murakami-Ramalho and Benham, 2010). International schools are set in a local host culture which creates a cultural distance (Murakami-Ramalho and Benham, 2010; Walker and Chen, 2007). Another characteristic of an international school is multiple curricula being implemented at the same time. Schools may have two different streams: one following the national curriculum guidelines and another following the International Baccalaureate (IB)/Primary Years Program curriculum (Walker and Cheng, 2009). There are also a variety of accrediting bodies and organizations.

The focus in this study was International Schools Services (ISS) and American-sponsored overseas schools. ISS schools are designated as such by: being governed and managed by ISS, having a recruiting relationship with ISS, or being listed in the ISS directory (International Schools Services, 2011b). ISS schools endeavor to promote quality international education programs (International Schools Services, 2011a). American-sponsored overseas schools are not owned or operated by the US government. Schools that receive assistance and support via the Office of Overseas Schools, United States Department of State are denoted as "American-sponsored" overseas schools. These schools promote an American-style program (United States Department of State, 2011). These school affiliations were chosen for this study because they have the following characteristics: cultural diversity in the student body and staff (Roberts, 2010; Walker and Cheng, 2009), cultural distance between the international school and local host culture, multiple constituents involved in the educational endeavor (Caffyn, 2010), and a high student and staff turnover leading to a highly transient environment (Murakami-Ramalho and Benham, 2010).

International school leadership
Leadership in international schools is not limited to a single position or a single person (Walker and Riordan, 2010). International school leaders are defined as principals, vice principals, heads of departments, level coordinators, or similar positions that are formally designated by the school (Walker and Cheng, 2009). Much of the research in the area of international schools is qualitative and theoretical in nature. A common theme among this limited literature is the importance of utilizing appropriate skills and knowledge to lead diverse children and adults.

Walker and Cheng (2009) examined the reflective journals of ten primary school leaders in Hong Kong. Two major themes regarding leading international schools emerged. The first theme focussed on leading for student learning, and the second theme was leading international and intercultural teams (Walker and Cheng, 2009). Similarly, a case study explored how leaders can facilitate dynamic learning experiences in international schools (Murakami-Ramalho and Benham, 2010). The context for the study was an American international school. This school had demonstrated stability in the administrative team and the governing board and shown success in student achievement. Multiple layers of complexity emerged from the culturally diverse setting of the international school which revealed the necessity of leadership working together with all constituents to create an effective teaching and learning environment (Murakami-Ramalho and Benham, 2010). Walker and Riordan (2010) discussed how leaders can build collective capacity in intercultural schools. The importance of understanding culture for both leaders and staff was highlighted. Another conceptual paper on international school leadership posited that culturally diverse schools require leaders that are authentic and value ongoing leadership learning. The importance of cultural understanding as part of the leadership's ongoing learning was proposed (Walker and Chen, 2007). Research suggests that intercultural competency may underlie effective leadership in an international school setting (Hayden and Thompson, 2011; Walker and Chen, 2007, 2009).

Cultural intelligence

Cultural intelligence is based on a multidimensional framework of intelligence. It is defined as "an individual's capability to function and manage effectively in culturally diverse settings" (Ang *et al.*, 2007, p. 336). Cultural intelligence is conceptualized as four different intelligences residing within a person: metacognitive, cognitive, motivational, and behavioral (Earley and Ang, 2003; Sternberg and Detterman, 1986). Metacognitive cultural intelligence is the process that an individual uses to attain and to understand cultural knowledge. Cognitive cultural intelligence refers to an individual's knowledge about cultures and how they are similar and different (Ang *et al.*, 2006). Motivational cultural intelligence is "magnitude and direction of energy applied towards learning about and functioning in cross-cultural situations" (Ang *et al.*, 2006, p. 101). Behavioral cultural intelligence is the capability to enact appropriate verbal and non-verbal actions in a multicultural context (Ang *et al.*, 2006).

Outcomes of cultural intelligence

Cultural intelligence is a nascent construct with research primarily focussed on conceptual theorizing (Ang *et al.*, 2007; Sternberg and Grigorenko, 2006). Empirical research on this relatively new construct has been steadily growing. Research has identified a number of individual and interpersonal outcomes linked with cultural intelligence that are particularly germane to individuals who are functioning in situations characterized by cultural diversity. These outcomes include task performance, cultural judgment and decision making, multicultural team effectiveness, intercultural negotiation, organizational innovation, and cross-cultural adjustment (Ang *et al.*, 2007; Elenkov and Manev, 2009; Imai and Gelfand, 2010; Rockstuhl and Ng, 2008; Templer *et al.*, 2006). Because cultural intelligence enables individuals to understand diversity and interact in a culturally sensitive manner and cultural intelligence has been identified as a factor contributing to effective leadership in multicultural business contexts (Alon and Higgins, 2005; Ang and Inkpen, 2008), we hypothesize that all

four factors of cultural intelligence will contribute to effective leadership in the international school setting.

The aim of this study is to examine if cultural intelligence is a predictor of transformational leadership in international school leaders. Consequently, the research questions for the present study are:

- Is there is a relationship between cultural intelligence and transformational leadership in international school leaders?

- If so, what factor(s) of cultural intelligence best predicts transformational leadership in international school leaders?

Method

Participants and setting

The participants in this study were a volunteer sample of 193 international school leaders. International school leaders in this study were defined as individuals who are in leadership positions such as director, principal, vice principal, head of department, level coordinator, or similar position that is formally designated by the school (Walker and Cheng, 2009). A list of potential participants was created from the web sites of ISS and American-sponsored overseas schools.

An initial e-mail was sent to the director of each school on the list requesting their voluntary participation in the study. A total of 567 leaders were invited to participate in the study. A total of 233 leaders responded; the volunteer response rate was 41.1 percent. After duplicate responses and incomplete surveys were removed, 193 participants' data were used for analysis.

The international school leaders who completed the survey were based in 90 different countries. In total, 150 (77.7 percent) of the participants were male, and 40 (20.7 percent) were female. In all, 180 (93.3 percent) of the participants were Caucasian, 2 (1 percent) were Asian, 2 (1 percent) were Hispanic, and 1 (0.5 percent) was African-American. Eight (4.1 percent) participants chose "other" or did not respond. The majority of participants reported their nationality as American ($n = 112$; 58 percent). In all, 28 (14.5 percent) participants reported British, 21 (10.9 percent) reported Canadian, and 11 (5.7 percent) reported Australian. In all, 21 (10.8 percent) participants reported "other" or did not respond to the nationality question. The demographics of this study are consistent with the demographics of previous research on the international school leader population (Thearle, 1999; Hawley, 1995). For example, Thearle's (1999) research demonstrated that the majority (80 percent) of the school leadership population was male, and Hawley's (1995) investigation into the longevity of international school heads demonstrated a similar makeup in terms of nationality.

Instrumentation

The variable of transformational leadership was measured using the Multifactor Leadership Questionnaire (MLQ) 5X (Bass and Riggio, 2006), and the variable of cultural intelligence was measured using the Cultural Intelligence Scale (CQS; Ang *et al.*, 2007). The MLQ 5X is the most widely accepted instrument used to assess transformational leadership (Bass and Riggio, 2006). In addition to transformational leadership, the MLQ 5X also measures transactional and laissez-faire leadership or the full range of leadership model. The focus of this study was transformational leadership. The MLQ 5X measures the five factors of transformational leadership. Each statement describes a behavior

associated with a leadership style and asks the individual to assess the frequency of their use of that behavior. A five-point Likert scale is used in which 0 denotes "not at all" and a response of four means "frequently, if not always." The higher the score on the statement, the higher the level of transformational leadership. The minimum transformational leadership score is 0, and the maximum score is 20.

Reliabilities for the MLQ 5X range from 0.74 to 0.94 (Bass and Avolio, 2004). The Cronbach α coefficient for the present data set was 0.76, which indicated that the scale was internally reliable in the present study.

The CQS was developed by Ang *et al.* (2007) to measure cultural intelligence. It consists of 20 items to measure a four-factor model. The scale "includes four items for metacognitive cultural intelligence ($\alpha = 0.76$), six for cognitive cultural intelligence ($\alpha = 0.84$), five for motivational cultural intelligence ($\alpha = 0.76$), and five for behavioral cultural intelligence ($\alpha = 0.83$)" (Ang *et al.*, 2006, p. 110). Initial factor structure validity yielded a goodness-of-fit of 0.92. The CQS has also been cross validated across various samples, across time, and across countries (Ang *et al.*, 2007; Moon, 2010a; Ward *et al.*, 2009). The Cronbach α coefficient for the present data set for the entire scale was 0.93. The Cronbach α coefficients for metacognitive cultural intelligence ($\alpha = 0.89$), cognitive cultural intelligence ($\alpha = 0.89$), motivational cultural intelligence ($\alpha = 0.91$), and behavioral cultural intelligence ($\alpha = 0.91$) were all high for the data, indicating good reliability.

Each item on the instrument describes an individual's capability to be culturally intelligent in one of the four factors (metacognitive, cognitive, motivational, and behavioral cultural intelligence). Sample items include "I am conscious of the cultural knowledge I apply to cross cultural interactions" for metacognitive cultural intelligence, "I know the rules for expressing nonverbal behaviors in other cultures" for cognitive cultural intelligence, "I enjoy interacting with people from different cultures" for motivational cultural intelligence, and "I change my verbal behavior (e.g. accent, tone) when a cross cultural interaction requires it" for behavioral cultural intelligence (Ang *et al.*, 2007, p. 366). Individuals were asked to respond to each statement using a seven-point Likert scale, in which a response of one meant "strongly disagree" and seven meant "strongly agree." A higher score on the item indicated a higher level of cultural intelligence. A separate score is derived for each factor of cultural intelligence by summing the item scores and dividing by the number of items in the respective section. The minimum score for each factor is 1, and the maximum score is 7.

Procedures
The e-mail sent to identified participants requested that they complete an online survey. The online survey included an informed consent, questions regarding demographics, the MLQ 5X, and the CQS. The survey was made available to participants from the end of May 2011 to the middle of June 2011. Two further reminder e-mails were sent to schools that did not respond. This process was adapted from the process suggested by Dillman (2007).

Research design and analysis
This study used a multivariate correlational research design to examine the relationship between cultural intelligence and transformational leadership. This design was chosen because it is appropriate for non-experimental research in which variables such as cultural intelligence and transformational leadership exist naturally and are not deliberately controlled or manipulated (Tabachnick and Fidell, 2007). A standard multiple regression was used for data analysis. As we sought to

understand the relationship between sets of multiple predictor variables, the four factors of cultural intelligence, and the criterion variable, a multiple regression had several advantages, particularly limiting the probability of committing Type I errors (Hotelling, 1935; Levine, 1977). A standard regression was chosen as the construct of cultural intelligence is still forming, and the choice of stepwise or hierarchical multiple regression requires a strong theoretical foundation (Tabachnick and Fidell, 2007). An α of 0.05 was used to determine significance which is commonly used in educational research to determine whether or not to reject the null hypothesis. Both assumption testing and results of the analysis are reported in the results section.

Results

Descriptive statistics

The mean and standard deviation for transformational leadership are $M = 16.23$, SD = 1.77. Overall, the international school leaders had a high level of transformational leadership. Table I displays the descriptive statistics for the cultural intelligence factors under study. Examination of the means indicates that the participants overall had a high level of metacognitive and motivational cultural intelligence. The participants had moderately high cognitive and behavioral cultural intelligence.

Table II displays the correlations among the predictor variables (metacognitive cultural intelligence, cognitive cultural intelligence, motivational cultural intelligence, and behavioral cultural intelligence) and the criterion variable (transformational leadership). Significant, low to moderate correlations were found among all the variables.

Variables	M	SD
Metacognitive cultural intelligence	6.03	0.88
Cognitive cultural intelligence	5.00	1.10
Motivational cultural intelligence	6.25	0.88
Behavioral cultural intelligence	5.75	0.95

Table I. Summary of means and standard deviations of variables

Variables	Transformational leadership	Metacognitive cultural intelligence	Cognitive cultural intelligence	Motivational cultural intelligence	Behavioral cultural intelligence
Transformational leadership	–				
Metacognitive cultural intelligence	0.37**	–			
Cognitive cultural intelligence	0.35**	0.55**	–		
Motivational cultural intelligence	0.25**	0.62**	0.41**	–	
Behavioral cultural intelligence	0.38**	0.62**	0.47**	0.61**	–

Notes: *$p < 0.05$; **$p < 0.01$

Table II. Intercorrelations among variables

Preliminary assumption testing was conducted to examine extreme outliers, the normality, linearity, and homoscedasticity of the residuals and results were found satisfactory. Results of the standard multiple regression analysis indicated that the linear combination of metacognitive cultural intelligence, cognitive cultural intelligence, motivational cultural intelligence, and behavioral cultural intelligence significantly predicted transformational leadership style, $R^2 = 0.20$, Adjusted $R^2 = 0.18$, $F(4, 192) = 11.58$, $p < 0.01$. The multiple correlation coefficient of 0.45 explained that approximately 20 percent of the variance in transformational leadership can be accounted for by the linear combination of the four factors of cultural intelligence. R^2 is a measure of effect size and identifies how much variance in the criterion is explained by the predictor variable (Tabachnick and Fidell, 2007). While R^2 is statistically significant, its low value indicates a low practical significance.

Each predictor variable (metacognitive cultural intelligence, cognitive cultural intelligence, motivational cultural intelligence, behavioral cultural intelligence) was individually examined to determine how much it contributed to the prediction of the criterion variable. According to the results shown in Table III, behavioral cultural intelligence and cognitive cultural intelligence had α levels < 0.05. This indicates that there was a significant positive relationship between both behavioral cultural intelligence and cognitive cultural intelligence and transformational leadership and these variables most significantly contributed to the prediction of the criterion variable. The regression coefficients of metacognitive cultural intelligence and motivational cultural intelligence were not significant, $p = 0.07$ and $p = 0.37$, respectively. This suggests that they were not significant in predicting transformational leadership. Analyzing the β values that represent the unique contribution of each variable, behavioral cultural intelligence and cognitive cultural intelligence contributed 3 and 2 percent in shared variability with the criterion variable, respectively.

Discussion

The results of the study demonstrate that there is a significant positive relationship between cultural intelligence and transformational leadership in international school leaders. Leaders who have a higher level of cultural intelligence exhibit a higher level of transformational leadership style, which suggests high-cultural intelligence is related to the ability to lead and to manage more effectively in multicultural environments. These findings are consistent with Ang and Inkpen (2008), who ascertained that cultural intelligence is important to effective leadership in multicultural environments. Deng and Gibson (2009) also corroborated this conclusion in their qualitative study of 32 western expatriate managers and 19 local managers in China. Evidence was found that cultural intelligence is a key cross-cultural leadership competency for effective leaders (Deng and Gibson, 2009).

Variables	Zero-order r	Partial r	β	SE B	B	t	p
Metacognitive cultural intelligence	0.37**	0.13	0.18	0.19	0.35	1.84	0.07
Cognitive cultural intelligence	0.35**	0.16*	0.17*	0.13	0.28	2.18	0.03*
Motivational cultural intelligence	0.25**	−0.07	−0.08	0.18	−0.16	−0.90	0.37
Behavioral cultural intelligence	0.38**	0.19**	0.24**	0.17	0.45	2.64	0.01*

Table III.
Contributions of
predictor variables

Notes: $n = 193$. *$p < 0.05$; **$p < 0.01$

When cultural intelligence factors were individually examined, behavioral cultural intelligence and cognitive cultural intelligence were found to be the best predictors of transformational leadership in international school leaders. Previous research suggests a number of reasons why behavioral cultural intelligence and cognitive cultural intelligence were the strongest predictors of transformational leadership. Dagher (2010) established that the factors of behavioral and cognitive cultural intelligence have a positive relationship with more effective cultural adaptation. Leaders who have adapted to their multicultural environments may be able to lead in a more transformational style whereas an individual who is struggling to adapt may have to devote more cognitive resources to adaptation and fewer resources to transformational leadership.

In addition, behavioral and cognitive cultural intelligence are also positively related to increased innovation and multicultural team effectiveness (Elenkov and Manev, 2009; Gregory *et al.*, 2009). Behavioral cultural intelligence has been linked to increased intercultural negotiation effectiveness and task performance (Ang *et al.*, 2007; Imai and Gelfand, 2010). Cognitive cultural intelligence has a positive relationship with cultural judgment and decision making (Ang *et al.*, 2007). These cultural intelligence outcomes are also reflected in the five factors of transformational leadership, suggesting that leaders who encourage innovation and creativity and who are more effective in multicultural teams and intercultural negotiation, task performance, cultural judgment, and decision making would also exhibit more transformational leadership behaviors.

Theoretical implications

The nomological network of cultural intelligence can be described by four major relationships: distal factors, intermediate or intervening variables, other correlates, and situational factors (Ang and Van Dyne, 2008). As a relatively "young" construct in the field of cultural competence, empirical evidence and the subsequent expansion of the nomological network is particularly valuable (Gelfand *et al.*, 2008). The findings contribute to the nomological network of cultural intelligence by identifying which factors of cultural intelligence best predict transformational leadership.

This study also answers the challenge to view cultural intelligence as a multidimensional construct and to investigate what specific dimensions of cultural intelligence have relevance to different outcomes (Ang *et al.*, 2007). The majority of research on the construct of cultural intelligence has been in the area of conceptual theorizing. Empirical evidence is needed to support these papers (Ang *et al.*, 2007). The study also establishes the importance of cultural intelligence in international school leaders by linking the relatively new construct of cultural intelligence with the "classical" construct of transformational leadership. The literature base for transformational leadership is robust (Gardner *et al.*, 2010; Wang *et al.*, 2011); however, this study adds to the nomological network of transformational leadership by identifying behavioral and cognitive cultural intelligence as specific factors in predicting transformational leadership in international school leaders.

Practical implications

As cultural intelligence has been positively related to transformational leadership, it follows that cultural intelligence should be an important consideration in selecting international school leaders and in the training and professional development of international school leaders. Additionally, consideration should be given to integrating cultural intelligence into higher education curriculum. This study provides evidence

that interpersonal skills such as cultural intelligence should also be considered as important criteria in the selection of international school leaders (Templer *et al.*, 2006; van Woerkom and de Reuver, 2009). The inclusion of an assessment of cultural intelligence should be part of the application process in the hiring of school personnel. Ideally, selection of leaders would take into consideration technical competence, job knowledge, and interpersonal skills. However, if there is an absence of the interpersonal competence necessary for a cross-cultural assignment, leaders and those selecting leaders should be encouraged to know that the cultural intelligence component is trainable.

Cultural intelligence is based on state-like individual capabilities as opposed to trait-like individual differences like personality characteristics (Ang *et al.*, 2006). As a multidimensional construct, these four factors are malleable and able to be strengthened through a variety of training methods (Ang *et al.*, 2007; Earley and Peterson, 2004; Ng *et al.*, 2009; Rockstuhl *et al.*, 2010). To date, the primary focus of intercultural competence training has been in the area of cultural knowledge (Earley and Peterson, 2004). The emphasis on knowing different cultural systems, norms, and values corresponds to the cognitive factor of cultural intelligence. While valuable, this approach fails to recognize the importance of the other three factors of metacognitive, motivational, and behavioral cultural intelligence. Cultural intelligence emphasizes developing a broad framework of understanding, skills, and behaviors needed to engage a culturally diverse world rather than focussing on specific knowledge or behaviors for a particular country or culture (Earley and Ang, 2003; Livermore, 2010). Thus, findings of this study support the expansion of current training to focus on all four factors of cultural intelligence.

Metacognitive cultural intelligence can be increased by cognitive structure analysis that systematically examines tacit assumptions and beliefs about self, others, and the world (Tan and Chua, 2003). The use of reflective journaling to document cross-cultural experiences is helpful for enhancing awareness and reflection. Metacognitive cultural intelligence can also be developed by engaging in active planning before a cross-cultural encounter (Livermore, 2010).

Cognitive cultural intelligence can be addressed through the use of interventions that focus on the learning of culture-specific knowledge. The culture-specific assimilator model is one training intervention that can increase cognitive cultural intelligence (Earley and Peterson, 2004).

Motivational cultural intelligence can be enhanced through the development of self-efficacy. One method of building confidence is through initial mastery experiences. Individuals are encouraged to focus on several simple cultural experiences that are especially salient to them. For example, how to get on or off public transportation, purchase a cup of coffee, or buy a newspaper. Once these rituals are established, self-efficacy can provide the necessary motivation to accomplish even greater cultural challenges (Earley and Peterson, 2004). Another intervention for encouraging motivational cultural intelligence is calculating the personal and organizational cost of not being culturally intelligent (Livermore, 2010; Roberts, 2010).

The use of role play and simulations in dramaturgical exercises can be used to develop behavioral cultural intelligence (Griffer and Perlis, 2007; Tan and Chua, 2003). Individuals are encouraged to have a holistic focus toward learning the nuances of behavior and actions and utilizing cognitive, sensory, emotional, and physical processes (Earley and Peterson, 2004; Hill, 2006). Behavior modification that rewards target culture behaviors and sanctions culturally inappropriate behaviors can be used to increase behavioral cultural intelligence (Tan and Chua, 2003).

As society becomes more globally focussed, it is equally beneficial to integrate cultural intelligence training into higher education, specifically educational leadership curriculum. Cultural intelligence training is being applied in the domain of management education with Master of Business Administration students (Smith *et al.*, 2010). Cultural intelligence is also being integrated into the curriculum for education pre-service speech-language pathologists and educators (Griffer and Perlis, 2007; Westby, 2007). The findings of this present study that cultural intelligence is positively related to transformational leadership for international school leaders suggest the value of integrating cultural intelligence into higher education curriculum for educational leaders.

Limitations

A number of limitations were present in the study; however, measures to decrease the threats to validity were taken. In this study, data using these two instruments were collected using two online survey forms. Thus, the testing effect was a concern. Two versions of the survey were administered in order to assist with minimizing this limitation. The first version of the survey presented the CQS first, followed by the MLQ 5X. In the second version of the survey, the MLQ 5X was presented first, followed by the CQS. The first version was administered to half of the participants while the second version was administered to the other half of the participants.

Non-ignorable non-response is a concern with any survey research; therefore a number of measures were taken to increase the response rate. A maximum of three e-mails was sent to each school leader. These included an initial e-mail introducing the survey and two further reminder e-mails to schools that did not respond. E-mails were personalized with the respective institutions in the subject line and personally addressed to the director to show positive regard to respondents (Dillman, 2007). E-mails were further personalized by the use of a postscript commenting on either an event at the school, the mission or vision of the school, or the Director's Welcome or biographical information as appropriate. If a generic "info @ school address" was listed, further research of the school web site or a general internet search was undertaken to locate the personal e-mail address of the school director. The time zone for each school was noted in order to have the first and second e-mails arrive on a Thursday afternoon. The final e-mail was timed to arrive on a Saturday morning to vary the days for the recipients (Dillman, 2007).

The use of self-report assessments to measure the constructs of cultural intelligence and transformational leadership is another limitation. The use of a web-based survey may lead participants to be more candid in their self-disclosure of intercultural capabilities and leadership behaviors (Granello and Wheaton, 2004; Van Selm and Jankowski, 2006). However, there is still the limitation of using self-report scales as they rely on the fidelity of the participants. The online survey was administered during the last two weeks in May and the first week in June, which could also be viewed as a limitation. The majority of international schools were concluding the school year or were finished by the last e-mail invitation. While a number of the participants commented that the timing of the survey was not ideal, the response rate of over 40 percent is almost double the expected response rate for a survey of this nature (Shih and Fan, 2008). This study used surveys to gather data from participants, and participants who did not respond to the survey were not accounted for. Therefore, the limitation of non-ignorable non-response, specifically unit non-response, should be considered when making inferences from the results of this study (King *et al.*, 1998).

The thorough description of the sample and context of the study endeavored to address the external validity of the results. However, one final limitation is that the generalizability of the results is limited to international school leaders from ISS schools and American-sponsored overseas schools. The limitations denoted above suggest needed areas of research.

Directions for future research
Further research studies of both quantitative and qualitative paradigms on the constructs of cultural intelligence and transformational leadership in international school leaders would be helpful in broadening the research base and triangulating the data (Tabachnick and Fidell, 2007). This study could be replicated with different sample populations such as domestic school leaders in settings that are characterized by cultural diversity or other international school organizations such as Council of International Schools, European Council of International Schools, or IB schools to enhance the generalizability of the results. Research has indicated that factors such as employment and education abroad influence cultural intelligence (Crowne, 2008). It would be beneficial to investigate other factors that may impact cultural intelligence such as years of experience, gender, nationality, or leaders' classification as a Third Culture Kid (Pollock and Van Reken, 2001; Useem and Downie, 1976). Adding demographics into the regression model is highly recommended for future research with more heterogeneous groups.

Further, considering the recent development in the literature on instructional leadership (Robinson *et al.*, 2008), instructional leadership within the context of international school leadership needs to be investigated. The examination of the relationship between instructional leadership and cultural intelligence and the impact of this relationship on school goals is recommended to further understand both the nature and influence of instructional leadership in the international school setting. The limitation of the use of self-report assessments can be addressed through 360 reviews of international school leaders with objective feedback from multiple sources, including superiors, followers, parents, boards of directors, community members, etc. In addition to the use of the CQS and MLQ, interviews, observational methods, and artifact analysis could be used in gaining a deeper understanding of cultural intelligence and transformational leadership in international school leaders (Bass and Riggio, 2006). The additional use of an external measurement of success and effectiveness such as academic achievement scores could also be used in determining the effectiveness of school leaders.

Conclusion
This study examined if there is a relationship between cultural intelligence and transformational leadership in international school leaders. The results of the study demonstrated that a significant positive relationship exists between cultural intelligence factors and transformational leadership in international school leaders. Thus, cultural intelligence should be an important consideration in the selection, training, and professional development of international school leaders and in integrating cultural intelligence into higher education curriculum.

Historically, the field of educational leadership studies has suffered from a lack of longevity of research foci (Leithwood and Jantzi, 2005). Against this backdrop, the significant corpus of research in the domain of transformational school leadership that has accumulated over the last 20 years is impressive. What is needed is further

empirical support to clarify the nature, causes, and consequences of transformational school leadership (Leithwood and Jantzi, 2005).

Transformational leadership represented a seminal shift in the domain of leadership and transformed the field of leadership studies (Antonakis *et al.*, 2003; Bass, 1993; Hunt, 1999). The construct of cultural intelligence has the opportunity to transform the field of intercultural competency in the same way that transformational leadership did for leadership studies.

The domain of cultural competence suffers from jingle and jangle fallacy (Kelley, 1927) in which constructs are labeled similarly yet are different conceptually, and other constructs share comparable meanings but are labeled differently (Gelfand *et al.*, 2008). While a relatively new construct, cultural intelligence offers parsimony, theoretical synthesis and coherence, and theoretical precision; identifies missing cultural competencies; and connects research across disciplinary borders (Ang *et al.*, 2007; Gelfand *et al.*, 2008). Further empirical studies are needed in order to provide the domain of cultural intelligence as broad a foundation of research as transformational leadership now possesses. It is hoped that this research will encourage educational and general managers, educational and public administrators, managers of educational establishments, students, and academics researching in the field to consider the construct of cultural intelligence.

References

Alon, I. and Higgins, J.M. (2005), "Global leadership success through emotional and cultural intelligences", *Business Horizons*, Vol. 48 No. 6, pp. 501-512.

Ang, S. and Inkpen, A.C. (2008), "Cultural intelligence and offshore outsourcing success: a framework of firm-level intercultural capability", *Decision Sciences*, Vol. 39 No. 3, pp. 337-358.

Ang, S. and Van Dyne, L. (2008), "Conceptualization of cultural intelligence: definition, distinctiveness, and nomological network", in Ang, S. and Van Dyne, L. (Eds), *Handbook of Cultural Intelligence: Theory, Measurement and Applications*, M.E. Sharpe, Armonk, NY, pp. 3-15.

Ang, S., Van Dyne, L. and Koh, C. (2006), "Personality correlates of the four-factor model of cultural intelligence", *Group and Organization Management*, Vol. 31 No. 1, pp. 100-123.

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*, Vol. 3 No. 3, pp. 335-371.

Antonakis, J., Avolio, B.J. and Sivasubramaniam, N. (2003), "Context and leadership: an examination of the nine-factor full-range leadership theory using the Multifactor Leadership Questionnaire", *The Leadership Quarterly*, Vol. 14 No. 3, pp. 261-295.

Barnett, K. and McCormick, J. (2004), "Leadership and individual principal-teacher relationships in schools", *Educational Administration Quarterly*, Vol. 40 No. 3, pp. 406-434.

Bass, B. (1993), "A seminal shift: the impact of James Burn's leadership", *The Leadership Quarterly*, Vol. 4 No. 3, pp. 375-377.

Bass, B.M. (1985), *Leadership and Performance Beyond Expectations*, Free Press, New York, NY.

Bass, B.M. and Avolio, B.J. (2004), *Multifactor Leadership Questionnaire: Manual and Sampler Set*, Mind Garden, Menlo Park, CA.

Bass, B.M. and Bass, R. (2008), *The Bass Handbook of Leadership: Theory, Research and Managerial Applications*, 4th ed., Free Press, New York, NY.

Bass, B.M. and Riggio, R.E. (2006), *Transformational Leadership*, 2nd ed., Taylor and Francis, New York, NY.

Blandford, S. and Shaw, M. (2001), *Managing International Schools*, Routledge, London.

Bogler, R. (2001), "The influence of leadership style on teacher job satisfaction", *Educational Administration Quarterly*, Vol. 37 No. 5, pp. 662-683.

Brown, P. and Lauder, H. (2009), "Globalization, international education, and the formation of a transnational class?", *Yearbook of the National Society for the Study of Education*, Vol. 108 No. 2, pp. 130-147.

Brummitt, N. (2007), "International schools: exponential growth and future implications", *International Schools Journal*, Vol. 27 No. 1, pp. 35-40.

Bunnell, T. (2006), "The growing momentum and legitimacy behind an alliance for international education", *Journal of Research in International Education*, Vol. 5 No. 2, pp. 155-176.

Bunnell, T. (2008), "International education and the 'second phase': a framework for conceptualizing its nature and for the future assessment of its effectiveness", *Compare*, Vol. 38 No. 4, pp. 415-426.

Caffyn, R. (2010), "We are in Transylvania, and Transylvania is not England': location as a significant factor in international school micropolitics", *Educational Management Administration and Leadership*, Vol. 38 No. 3, pp. 321-340.

Cambridge, J. and Thompson, J.J. (2004), "Internationalism and globalization as contexts for international education", *Compare*, Vol. 34 No. 2, pp. 161-175.

Collard, J. (2007), "Constructing theory for leadership in intercultural contexts", *Journal of Educational Administration*, Vol. 45 No. 6, pp. 740-755.

Crowne, K.A. (2008), "What leads to cultural intelligence?", *Business Horizons*, Vol. 51 No. 5, pp. 391-399.

Dagher, G. (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*, Vol. 15 No. 1, pp. 137-143.

Day, C. and Leithwood, K. (2007), *Successful Principal Leadership in Times of Change: An International Perspective*, Springer, Dordrecht.

Deng, L. and Gibson, P. (2009), "Mapping and modeling the capacities that underlie effective cross-cultural leadership", *Cross Cultural Management*, Vol. 16 No. 4, pp. 347-366.

Dillman, D.A. (2007), *Mail and Internet Surveys: The Tailored Design Method*, John Wiley and Sons, Hoboken, NJ.

Earley, P.C. and Ang, S. (2003), *Cultural Intelligence: Individual Interactions Across Cultures*, Stanford University Press, Palo Alto, CA.

Earley, P.C. and Peterson, R.S. (2004), "The elusive cultural chameleon: cultural intelligence as a new approach to intercultural training for the global manager", *Academy of Management Learning and Education*, Vol. 3 No. 1, pp. 100-115.

Elenkov, D.S. and Manev, I.M. (2009), "Senior expatriate leadership's effects on innovation and the role of cultural intelligence", *Journal of World Business*, Vol. 44 No. 4, pp. 357-369.

Fleishman, E.A., Mumford, M.D., Zaccaro, S.J., Levin, K.Y., Korotkin, A.L. and Hein, M.B. (1991), "Taxonomic efforts in the description of leadership behavior: a synthesis and functional interpretation", *Leadership Quarterly*, Vol. 2 No. 4, pp. 245-287.

Gardner, W.L., Lowe, K.B., Moss, T.W., Mahoney, K.T. and Cogliser, C.C. (2010), "Scholarly leadership of the study of leadership: a review of the leadership quarterly's second decade, 2000-2009", *The Leadership Quarterly*, Vol. 21 No. 6, pp. 922-958.

Gelfand, M.J., Imai, L. and Fehr, R. (2008), "Thinking intelligently about cultural intelligence: the road ahead", in Ang, S. and Van Dyne, L. (Eds), *Handbook of Cultural Intelligence: Theory, Measurement and Applications*, M.E. Sharpe, Armonk, NY, pp. 375-388.

Granello, D.H. and Wheaton, J.E. (2004), "Online data collection: strategies for research", *Journal of Counseling and Development*, Vol. 82 No. 4, pp. 387-393.

Gregory, R., Prifling, M. and Beck, R. (2009), "The role of cultural intelligence for the emergence of negotiated culture in IT offshore outsourcing projects", *Information Technology and People*, Vol. 22 No. 3, pp. 223-241.

Griffer, M.R. and Perlis, S.M. (2007), "Developing cultural intelligence in preservice speech-language pathologists and educators", *Communication Disorders Quarterly*, Vol. 29 No. 1, pp. 28-35.

Hallinger, P. (2003), "Leading educational change: reflections on the practice of instructional and transformational leadership", *Cambridge Journal of Education*, Vol. 33 No. 3, pp. 329-351.

Hawley, D.B. (1995), "How long do international school heads survive? A research analysis (Part II)", *International Schools Journal*, Vol. 14 No. 2, pp. 23-36.

Hayden, M.C. and Thompson, J.J. (2011), "Teachers for the international school of the future", in Bates, R. (Ed.), *Schooling Internationally: Globalisation, Internationalisation and the Future for International Schools*, Routledge, London, pp. 83-100.

Hill, C. (2006), "Classroom dramas of cultural interactions and global issues", *International Journal of Learning*, Vol. 12 No. 10, pp. 75-79.

Hotelling, H. (1935), "The most predictable criterion", *Journal of Educational Psychology*, Vol. 26 No. 2, pp. 139-142.

Hunt, J.G. (1999), "Transformational/charismatic leadership's transformation of the field: a historical essay", *The Leadership Quarterly*, Vol. 10 No. 2, pp. 129-144.

Imai, L. and Gelfand, M.J. (2010), "The culturally intelligent negotiator: the impact of cultural intelligence (CQ) on negotiation sequences and outcomes", *Organizational Behavior and Human Decision Processes*, Vol. 112 No. 2, pp. 83-98.

International Schools Services (2012a), "About ISS schools", available at: www.iss.edu/school-services/managing-a-school/our-schools/ (accessed July 21, 2012).

International Schools Services (2012b), "Explore global schools", available at: www.iss.edu/schools/ (accessed July 21, 2012).

ISC Research (2012), "Market summary", available at: www.iscresearch.com/ (accessed July 21, 2012).

Judge, T.A. and Bono, J.E. (2000), "Five-factor model of personality and transformational leadership", *Journal of Applied Psychology*, Vol. 8 No. 5, pp. 751-765.

Kelley, T.L. (1927), *Interpretation of Educational Measurements*, World Book, New York, NY.

King, G., Honaker, J., Joseph, A. and Sheve, K. (1998), "Listwise deletion is evil: what to do about missing data in political science", working paper Harvard University Department of Government , Cambridge, MA.

Lee, M., Hallinger, P. and Walker, A. (2012), "Leadership challenges in international schools in the Asia Pacific region: evidence from programme implementation of the International Baccalaureate", *International Journal of Leadership in Education*, Vol. 15 No. 3, pp. 289-310.

Leithwood, K. and Jantzi, D. (2005), "A review of transformational school leadership research 1996-2005", *Leadership and Policy in Schools*, Vol. 4 No. 3, pp. 177-199.

Leithwood, K., Jantzi, D., Earl, L., Watson, N., Levin, B. and Fullan, M. (2004), "Strategic leadership for large-scale reform: the case of England's national literacy and numeracy strategies", *Journal of School Leadership and Management*, Vol. 24 No. 1, pp. 57-80.

Leithwood, K., Riedlinger, B., Bauer, S. and Jantzi, D. (2003), "Leadership program effects on student learning: the case of the Greater New Orleans school leadership center", *Journal of School Leadership*, Vol. 13 No. 6, pp. 707-738.

Leithwood, K., Tomlinson, D. and Genge, M. (1996), "Transformational school leadership", in Leithwood, K., Chapman, C., Corson, D., Hallinger, P. and Hart, A. (Eds), *International Handbook of Educational Leadership and Administration*, Kluwer Academic Publishers, Dordrecht, pp. 785-840.

Levine, M.S. (1977), *Canonical Analysis and Factor Comparison*, Sage, Beverly Hills, CA.

Livermore, D. (2010), *Leading with Cultural Intelligence: The New Secret to Success*, American Management Association, New York, NY.

MacDonald, J. (2009), "Balancing priorities and measuring success", *Journal of Research in International Education*, Vol. 8 No. 1, pp. 81-98.

Mancuso, S.V., Roberts, L. and White, G.P. (2010), "Teacher retention in international schools: the key role of school leadership", *Journal of Research in International Education*, Vol. 9 No. 3, pp. 306-323.

Meyer, J.W. (2007), "Globalization: theory and trends", *International Journal of Comparative Sociology*, Vol. 48 No. 4, pp. 261-273.

Moon, T. (2010a), "Emotional intelligence correlates of the four-factor model of cultural intelligence", *Journal of Managerial Psychology*, Vol. 25 No. 8, pp. 876-898.

Moon, T. (2010b), "Organizational cultural intelligence: dynamic capability perspective", *Group and Organization Management*, Vol. 35 No. 4, pp. 456-493.

Moos, L. and Johansson, O. (2009), "The international successful school principalship project: success sustained?", *Journal of Educational Administration*, Vol. 47 No. 6, pp. 765-780.

Murakami-Ramalho, E. (2008), "Domestic practices in foreign lands: lessons on leadership for diversity in American international schools", *Journal of Studies in International Education*, Vol. 12 No. 1, pp. 76-95.

Murakami-Ramalho, E. and Benham, M. (2010), "Around the fishing net: leadership dynamics for change in an American international school", *Educational Management Administration and Leadership*, Vol. 38 No. 5, pp. 625-643.

Ng, K.Y., 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*, Vol. 8 No. 4, pp. 511-526.

Northouse, P.G. (2010), *Leadership: Theory and Practice*, 5th ed., Sage, Thousand Oaks, CA.

Odland, G. and Ruzicka, M. (2009), "An investigation into teacher turnover in international schools", *Journal of Research in International Education*, Vol. 8 No. 1, pp. 5-29.

Pearce, R. (2011), "When borders overlap: composite identities in children in international schools", *Journal of Research in International Education*, Vol. 10 No. 2, pp. 154-173.

Pollock, D.C. and Van Reken, R.E. (2001), *Third Culture Kids: Growing Up Among Worlds*, Nicholas Brealey Publishing, Boston, MA.

Roberts, L.G. (2010), "Looking beneath the tip of the iceberg: cultural intelligence in international education", *International Schools Journal*, Vol. 30 No. 1, pp. 38-45.

Robinson, V.M.J., Lloyd, C.A. and Rowe, K.J. (2008), "The impact of leadership on student outcomes: an analysis of the differential effects of leadership types", *Educational Administration Quarterly*, Vol. 44 No. 5, pp. 635-674.

Rockstuhl, T. and Ng, K.Y. (2008), "The effects of cultural intelligence on interpersonal trust in multicultural teams", in Ang, S. and Van Dyne, L. (Eds), *Handbook of Cultural Intelligence: Theory, Measurement and Applications*, M.E. Sharpe, Armonk, NY, pp. 206-220.

Rockstuhl, T., Hong, Y.Y., Ng, K.Y., Ang, S. and Chiu, C.Y. (2010), "The culturally intelligent brain: from detecting to bridging cultural difference", *NeuroLeadership Institute*, Vol. 3, pp. 1-15.

Ross, J. and Gray, P. (2006), "Transformational leadership and teacher commitment to organizational values: the mediating effects of collective teacher efficacy", *School Effectiveness and School Improvement*, Vol. 17 No. 2, pp. 179-199.

Ruby, A. (2005), "Reshaping the university in an era of globalization", *Phi Delta Kappan*, Vol. 87 No. 3, pp. 233-236.

Shih, T. and Fan, X. (2008), "Comparing response rates from web and mail surveys: a meta-analysis", *Field Methods*, Vol. 20 No. 3, pp. 249-271.

Silins, H. and Mulford, B. (2002), "Schools as learning organizations: the case for system, teacher and student learning", *Journal of Educational Administration*, Vol. 40 No. 5, pp. 425-446.

Silins, H., Mulford, B. and Zarins, S. (2002), "Organizational learning and school change", *Educational Administration Quarterly*, Vol. 38 No. 5, pp. 613-642.

Smith, W.I., Shrestha, N.R. and Evans, C.L. (2010), "360° approach to assessing cross-cultural intelligence: use of film", *Journal of Instructional Pedagogies*, Vol. 3, pp. 1-9.

Sternberg, R.J. and Detterman, D.K. (1986), *What is Intelligence? Contemporary Viewpoints on its Nature and Definition*, Ablex, Norwood, NJ.

Sternberg, R.J. and Grigorenko, E.L. (2006), "Cultural intelligence and successful intelligence", *Group and Organization Management*, Vol. 31 No. 1, pp. 27-39.

Tabachnick, B.G. and Fidell, L.S. (2007), *Using Multivariate Statistics*, 5th ed., Allyn and Bacon, Boston, MA.

Tan, J.S. and Chua, R.Y. (2003), "Training and developing cultural intelligence", in Earley, P.C. and Ang, S. (Eds), *Cultural Intelligence: An Analysis of Individual Interactions Across Cultures*, Standford University Press, Palo Alto, CA, pp. 258-303.

Templer, K.J., Tay, C. and Chandrasekar, N.A. (2006), "Motivational cultural intelligence, realistic job preview, realistic living conditions preview, and cross-cultural adjustment", *Group and Organization Management*, Vol. 31 No. 1, pp. 154-173.

Thearle, C. (1999), "Women in senior management positions in international schools", *International Schools Journal*, Vol. 17 No. 2, pp. 38-47.

United States Census Bureau (2008), "An older and more diverse nation by midcentury", available at: www.census.gov/newsroom/releases/archives/population/cb08-123.html (accessed April 25, 2012).

United States Department of State (2011), "Worldwide fact sheet", available at: www.state.gov/m/a/os/1253.htm (accessed February 15, 2011).

Useem, R.H. and Downie, R.D. (1976), "Third culture kids", *Today's Education*, Vol. 65 No. 3, pp. 103-115.

Van Selm, M. and Jankowski, N.W. (2006), "Conducting online surveys", *Quality and Quantity*, Vol. 40 No. 3, pp. 435-456.

van Woerkom, M. and de Reuver, R.S.M. (2009), "Predicting excellent management performance in an intercultural context: a study of the influence of multicultural personality on transformational leadership and performance", *International Journal of Human Resource Management*, Vol. 20 No. 10, pp. 2013-2029.

Walker, A. and Chen, S. (2007), "Leader authenticity in intercultural school contexts", *Educational Management Administration and Leadership*, Vol. 35 No. 2, pp. 185-204.

Walker, A. and Cheng, Y.C. (2009), "Leading international primary schools: an integrative agenda for building understanding", *International Studies in Educational Administration*, Vol. 37 No. 1, pp. 43-59.

Walker, A. and Dimmock, C. (2005), "Leading the multi-ethnic school: research evidence on successful practice", *The Educational Forum*, Vol. 39 No. 3, pp. 291-304.

Walker, A. and Riordan, G. (2010), "Leading collective capacity in culturally diverse schools", *School Leadership and Management*, Vol. 30 No. 1, pp. 51-63.

Walker, A., Qian, H. and Chen, S. (2007), "Leadership and moral literacy in intercultural schools", *Journal of Educational Administration*, Vol. 45 No. 4, pp. 379-397.

Wang, G., Oh, I.-S., Courtright, S.H. and Colbert, A.E. (2011), "Transformational leadership and performance across criteria and levels: a meta-analytic review of 25 years of research", *Group and Organization Management*, Vol. 36 No. 2, pp. 223-270.

Ward, C., Fischer, R., Lam, F.S.Z. and Hall, L. (2009), "The convergent, discriminant, and incremental validity of scores on a self-report measure of cultural intelligence", *Educational and Psychological Measurement*, Vol. 69 No. 1, pp. 85-105.

Westby, C. (2007), "Being smart in a diverse world", *Communication Disorders Quarterly*, Vol. 29 No. 1, pp. 7-13.

About the authors

Emerson K. Keung has an EdD in Educational Leadership. He taught college and university students internationally for ten years before moving to Hong Kong, where his current research continues in the areas of cultural intelligence, educational leadership, and intercultural schools. Emerson K. Keung is the corresponding author and can be contacted at: ekkeung@gmail.com

Amanda J. Rockinson-Szapkiw currently serves as the Chair of Doctoral Research and Assistant Professor for Liberty University's School of Education doctoral program. Dr Szapkiw has an EdD in Distance Education, an MA in Counselling, and a BS in Elementary Education. She holds professional licenses in teaching and counseling. Her research has focussed on community in distance education, doctoral mentorship, and cultural and emotional intelligence in educational leaders.