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## The relationship of leadership and student achievement across societal cultures

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### Abstract

School leaders are aware that their effectiveness is often defined by student performance as measured by test scores. Of particular interest in the global arena are the results of the TIMSS and PISA international assessments that rank student performance by country. While researchers and educators seek to account for the high achievement on these assessments, many turn to the characteristics and behaviors of school leaders to explain the difference in rankings. However, to view effective school leadership behaviors and characteristics from a global perspective poses some challenges, as societal culture influences the leadership process. As way to investigate leadership by societal cultures across the globe, the investigators of this study turned to The Global Leadership and Organizational Behavior Effectiveness (GLOBE) research survey, in which a research team described a large number of characteristics and behaviors, or universal leadership dimensions, to assess the different ways in which various societal clusters viewed leadership. The investigators of this study explore the relationship of global leadership using the GLOBE cultural leadership dimensions and student achievement as measured by TIMMS and PISA within cultural clusters. Findings indicated that four universal leadership dimensions, including charismatic/values based leadership, participative leadership, autonomous leadership, and self-protective leadership, were identified through ANOVA to be significant in predicting student achievement, which led the researchers to conclude that administering the GLOBE Survey to school leaders is necessary to determine the importance and value of the leadership dimensions relative to educational leaders across all cultures.

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## 1. Introduction

School leadership and student achievement are now global issues (Zhao, 2010). One only has to study student achievement measures as put forth by the Programme for International Student Assessment (PISA) and Trends in International Mathematics and Science Study (TIMSS), launched in 1995 and 1997 respectively, to determine that the world's eyes are on international comparisons of student performance across the globe. In a major large-scale cross-cultural research program, Global Leadership and Organizational Behavior Effectiveness (GLOBE) researchers studied inter-relationships of leadership, organizations, and societal culture, using data from 62 countries of the world. Recognizing that leadership and student achievement have gone global, the investigators of this study were motivated to explore the relationship between leadership behaviors and characteristics and student achievement from an international perspective.

In the world of education, what is known about global student achievement and school leadership? First, two international testing programs provide reliable data on mathematics, science, and reading achievement of students that can be used to compare student performance by participating countries. For example, one international testing program, PISA, assesses skills and knowledge of 15-year-old students to determine how equipped students are “for full participation in society” (<http://www.oecd.org/pisa/aboutpisa/>). From the assessment data collected from both PISA and TIMSS over the last decade, educators find extreme variances in student readiness for global engagement. The concept of globalization advanced in Friedman's book, *The World is Flat: A Brief History of the Twenty-First Century* (2007), posited: “The playing field has been leveled” (p. 7). However, the playing field in education is not level, as evidenced by the global problem of disparity in student achievement.

As far as school leadership effectiveness across the globe, very little is known about the school leader's role in student achievement from a culturally contextual perspective. Much of what is known about leadership effectiveness emanates from leadership studies in business and industry. Researchers House and his colleagues (2007) and Kouzes and Posner (2007) have advocated that universal truths about leadership transcend to leaders in schools and other disciplines across societal cultures. The GLOBE studies produced views and perspectives of what universally constitutes good and bad leadership. Most societal clusters, for example, accept that leaders will demonstrate integrity and interpersonal abilities. However, the GLOBE researchers also found that leadership occurs in situational contexts and within cultures, and culturally contingent differences were found to influence conceptualizations of leadership.

Therefore, the investigators of this study were challenged to identify a way to approach an exploratory study on global school leadership and student achievement. The GLOBE research yielded a means by which to begin, as House and colleagues (2007) identified six universal leadership dimensions as a gateway to assess different ways in which various cultural clusters view leadership. Facing one of major challenges of cross-cultural research, that of research methods, the researchers made the decision to explore the relationship between global achievement and leadership dimensions, using TIMSS and PISA data to represent the student achievement variable and GLOBE's six universal leadership dimensions.

In this paper, the authors first present a brief background of the literature on cross-cultural leadership research and global student achievement. Then, the authors present methods and findings from this study, followed by a brief discussion. While the investigators recognize limitations imposed by the variables of the study, this paper serves as a precedent to a preliminary exploration of the relationship between global school leadership and student achievement.

## 2. Cross-cultural Leadership Research and Global Student Achievement

Since World War II there has been a dramatic increase in globalization throughout the world. Globalization has created a need for leaders with greater understanding of cultural differences and increased competencies in cross cultural communication and practice. Culture is defined as the commonly shared beliefs, values, and norms of a group of people. In the past 30 years, many studies have focused on identifying various dimensions of culture. The best known is the work of Hofstede (1980, 1991, 2001), who identified five major dimensions: power distance, uncertainty avoidance, individualism–collectivism, masculinity–femininity, and long-term–short-term orientation.

Expanding on Hofstede’s work, House and his colleagues (2004) delineated additional dimensions of culture such as in-group collectivism, institutional collectivism, future orientation, assertiveness, performance orientation, and humane orientation. After many years in development, the work of Dorfman, House, and more than 150 colleagues (The Globe Foundation, 2006) around the world resulted in the Global Leadership and Organizational Behavior Effectiveness Project (GLOBE Project). The Globe researchers described leader effectiveness as contextually embedded in the values and norms of people within a society, identifying 35 leader characteristics that are described as “culturally contingent.” From the study of over 17,000 business and financial leaders in 62 countries, the GLOBE Project also yielded 21 universally desirable and undesirable characteristics of effective leaders across all cultures, which they grouped into six universal leadership dimensions. Given that the GLOBE research team described universal characteristics and behaviors that account for a leader’s effectiveness, or lack thereof, across all cultures, the researchers of this study decided to use these universal leader dimensions to study their relationship with student achievement.

As part of the GLOBE research team, House and Javidan (2004) identified the six dimensions as: charismatic/value-based, team-oriented, participative, humane-oriented, autonomous, and self-protective leadership. As universal dimensions, these six dimensions provide a common ground to study perceptions of leadership across cultures.

- Charismatic/value-based leadership refers to the capacity to inspire, to motivate based on strongly held core values. The behaviors are those of a visionary, inspirational leader, one who is trustworthy and performance-oriented.
- Team-oriented leadership includes the capacity for team building and encouraging a common purpose among team members. The behaviors are those of a collaborative, nonmalevolent leader, one who is integrative and diplomatic.
- Participative leadership refers to the capacity to involve others in decision-making. The behaviors are those of a nonautocratic leader, one who seeks to make and implement decisions with others.
- Humane-oriented leadership involves the capacity to be compassionate and generous. The behaviors are those of a supportive leader, one who is modest and sensitive to others.
- Autonomous leadership reflects the capacity to lead individually and independently. The behaviors are those of an autocratic leader.
- Self-protective leadership encompasses being self-centered, status conscious, and procedural. The behaviors are those of a face-saving leader, one who will ensure his or her own security, or from a group-protective style, one who will ensure the safety of the group.

One of the criticisms of the GLOBE research is that they conceptualized leadership based on perceptions of leadership from 17,300 middle managers in the food processing, financial services, and telecommunications services industries (Northouse, 2013). The six dimensions were framed from perceptions and implicit beliefs that

individuals have about leaders, not specifically about what leaders do. GLOBE data were not collected from leaders in educational organizations. However, the research team's justification for using the GLOBE leader dimensions is the argument that these dimensions represent universal principles, or behaviors and characteristics, that were perceived culturally as "leadership." Even though data were collected from those in mid-management in business industries and not the educational industry, the findings provide a common metric to study leadership across societal cultures.

The idea that these dimensions might also be related to how school leadership is viewed is the assumption of this study, with some basis on which to make the assumption. From an Anglo cultural perspective, Richardson and Lane (1996) polled 1,225 teachers from four states in the United States and asked: "What are the characteristics of principals that make them leaders?"

The findings of Richardson and Lane's (1996) survey indicated correlation between traits that are valued in both business and education. This study also reflects the findings of Kouzes and Posner (2007) who describe leaders, across different industries, professions, and countries, with similar behaviors and practices. Many researchers (Lord & Maher, 1991; Northouse, 2013; Yukl, 1999) have emphasized that leadership occurs in context and under conditions of the expectations of followers and organizational culture, but they also cite universality of some behaviors and characteristics across cultural contexts. It makes sense that education would be reflected within cultures, which would pose little difference in leadership as perceived by those in other institutions.

Given that the GLOBE research team reported empirical evidence of universal leadership dimensions as a way to understand how leadership is perceived across societal cultures, the researchers of this study decided to frame this exploratory study of the relationship of leadership and student achievement around one overarching question: Does the way a global society views leadership have a relationship with student achievement?

### 3. Methods

This study was designed as an exploratory study to determine the relationship between universal leadership dimensions and student achievement from a global perspective. The researchers sought to determine whether universal leadership dimensions identified in the GLOBE research were associated with student achievement as measured by international student achievement scores from PISA and TIMSS data.

The data used to represent the variables for this descriptive study were from the GLOBE research, the TIMSS database, and the PISA database. To study the association between leadership and student achievement, the researchers first identified the six universal culturally-endorsed leadership dimensions reported in the GLOBE research by societal culture. These six dimensions do not describe outstanding leadership, but rather describe the views of how cultures distinguish effective leadership. The dimensions are: charismatic/value-based, team-oriented, participative, humane-oriented, autonomous, and self-protective leadership. The societal cultures, including the countries that constitute the cluster, in the GLOBE studies were:

- Anglo: Australia, Canada, England, Ireland, New Zealand, South Africa (White sample), United States
- Germanic: Austria, Germany, the Netherlands, Switzerland (German speaking)
- Latin Europe: France, Switzerland (French speaking), Israel, Italy, Portugal, Spain
- Eastern Europe: Albania, Georgia, Greece, Hungary, Kazakhstan, Poland, Russia, Slovenia
- Southeast Asia: India, Indonesia, Iran, Malaysia, Philippines, Thailand
- Middle East: Egypt, Kuwait, Morocco, Qatar, Turkey

- Confucian Asia: China, Hong Kong, Japan, Singapore, Taiwan, South Korea
- Sub-Saharan Africa: Namibia, Nigeria, South Africa (Black sample), Zambia, Zimbabwe
- Latin America: Argentina, Bolivia, Brazil, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Mexico, Venezuela;
- Nordic Europe: Denmark, Finland, Sweden.

The researchers excluded countries where both TIMSS and PISA scores were not reported. The non-examined countries in each societal cluster did not participate in international testing. The researchers excluded the Sub-Saharan Africa cultural cluster, as there were no countries in this cluster that participated in international testing.

To perform the correlational study, first, countries were grouped into three clusters based on their rankings of the value of each universal leadership dimension. For example, on the *charismatic/value-based dimension*, if a country ranked that dimension as 1, 2 or 3, they were in the first group (LOW) and if they ranked it 8, 9 or 10 they were in the last group (HIGH). The rest of the countries (ranks of 4 through 7) comprised the middle group. Thus, the first group of countries are those that most value a dimension and the last group of countries are those that least value that dimension. The following table represents the value rankings of the 6 leadership style dimensions by cultural cluster:

Table 1: Grouping of Culturally Endorsed Leadership Dimensions

Leadership Dimension	Societal Clusters that Value Dimension the Most (1)	Societal Clusters that Value Dimension Moderately (2)	Societal Clusters that Value Dimension the Least (3)
Charismatic/value-based	Anglo; Germanic; Nordic Europe	Latin Europe; Southeast Asia; Confucian Asian; Latin American	Eastern Europe; Middle East
Team-oriented	Southeast Asia; Confucian Asia; Latin America	Latin Europe; Eastern Europe; Nordic Europe	Anglo; Germanic; Middle East
Participative leadership	Anglo; Germanic; Nordic Europe	Latin Europe; Eastern Europe; Latin America	Southeast Asia; Middle East; Confucian Asian
Humane-oriented leadership	Anglo; Southeast Asia	Germanic; Latin Europe; Middle East; Confucian Asia; Latin America	Eastern Europe; Nordic Europe
Self-protective leadership	Southeast Asia; Middle East; Confucian Asia	Latin Europe; Eastern Europe; Latin America	Anglo; Germanic; Nordic Europe
Autonomous leadership	Germanic; Eastern Europe; Confucian Asia	Anglo; Southeast Asia; Nordic Europe	Latin Europe; Middle East; Latin America

### *.1 Analysis*

The relationship between the leadership dimensions and student achievement was analyzed in two ways. First, correlations between the leadership style rankings and the average achievement scores were established.

Second, the researchers conducted an ANOVA to study the relationship of leadership dimensions and student achievement. These groupings were then used to represent a fixed factor in an ANOVA analysis of each of the achievement variables. The achievement variable was the average reported value of the PISA and TIMSS scores available for each country. Due to the fact that average scores were used and the number of students in each country used to form the averages was not available and thus not weighted to account for the variable, this analysis should be considered exploratory.

### *3.2 Results*

It should be observed that, with the correlations between cultural leadership dimension scores and international standardized achievement scores, higher scores represent less value of that style so negative correlations indicate higher achievement scores are associated with higher value rankings. The data suggest that the charismatic/value-based orientation score has a significant negative correlation with the PISA–Reading score. Likewise the data suggest that the autonomous leadership orientation score has a significant negative correlation with all three international achievement measures. However, the data suggest that the protective leadership score has a significant positive correlation with the PISA–Reading score.

These initial correlation results prompted the researchers to calculate ANOVAs to further investigate relationships and/or predictors of international student achievement data with the leadership dimensions as defined in GLOBE studies.

#### *3.2.1 Mean Achievement Scores by Leadership Dimension.*

The leadership dimension scores were recoded into High (8-10), Medium (4-7) and Low (1-3). Mean scores on the achievement measures for each of these groups were calculated, and correlations were established as follows:

- ANOVAs for Charismatic/values based Leadership Style demonstrated a significant difference between groups on the TIMSS and PISA-Reading.
- ANOVAs for Participative Oriented Leadership Style showed a significant difference between groups on both PISA-Reading and PISA-Math.
- ANOVAs for Autonomous Oriented Leadership Style showed significant difference between groups on TIMSS, PISA-Reading, and PISA-Math.
- ANOVAs for Self-or Group-Protective Oriented Leadership Style showed a significant difference between groups on PISA-Reading and PISA-Math.
- See Table 2 for a summary of significant findings.

Table 2: Summary of Significant Findings

Leadership Orientation	Correlations Leadership Orientation / PISA- Reading / PISA-Math	ANOVA Leadership Orientation / TIMSS /PISA- Reading / PISA-Math
Charismatic/ value-based	Negative Correlation with PISA- Reading scores	Significant difference between groups on TIMSS and PISA-Reading
Team		
Participative	Positive Correlation with PISA- Reading	Significant difference between groups on both PISA-Reading and PISA-Math
Humane		
Autonomous	Negative correlation with PISA- Reading, PISA-Math, and TIMSS	Significant difference between groups on TIMSS, PISA-Reading and PISA-Math
Self- Group Protective		Significant difference between groups on PISA-Reading and PISA-Math

#### 4. Discussion

As an exploratory study, the researchers observed several interesting relationships in the ways that cultural clusters conceptualize leadership and student achievement within the clusters. ANOVAs established that four of the leadership approaches were found to be significant in predicting student achievement. For example, the findings indicated that charismatic/value, participative, autonomous, and self-protective styles of leadership predict student achievement, while humane and team styles were not found to be related to student achievement. Even though, across all 62 countries of the GLOBE study, all cultures see all six dimensions as substantially contributing to leadership, those that approach leadership with a higher regard of a charismatic/value-based conceptualization and an autonomous conceptualization seem to generate higher student achievement. Initial findings indicated that societal clusters who exceedingly value participative and self or group protective approaches to leadership have little or negative impact on student achievement.

In considering the relationship of leadership and variance in student performance, results suggest that charismatic/value-based conceptualization of leadership, for example, inspires student achievement. For example, at the level of the ten societal clusters, the Anglo cluster most positively associated charismatic /value-based leadership with leader effectiveness, whereas the Middle East cluster least associated charismatic /value-based orientation with outstanding leadership. In observing average scale scores from the 2009 administration of PISA to students in countries within these two cultural clusters, Middle Eastern countries who participated in PISA reported average scale scores of 407, compared to the average scale score of 504 in the Anglo cultural cluster. One of the characteristics of the charismatic/value-based leadership approach is a strong performance orientation; therefore, it is not surprising that leading with values and a results-orientation style contributes to positive outcomes. If results matter in leadership, then the laser-focus on generating positive results is to be expected.



In another interesting observation, the Confucian Asia cluster, which basically holds a self-protective, team oriented, and humane oriented style of leadership in high regard, had the highest scale scores on the PISA, but two of the predominant ways they conceptualize leadership, team and humane, were not found to be related to student performance. Furthermore, the protective approach to leadership, which was related to student performance scores, seemed to suggest a negative correlation. The more a cultural cluster conceptualizes leadership from a protective perspective, the lower the achievement. However, the achievement scores from the Confucian Asia cluster are among the highest in the world. These findings may suggest that students within the Confucian Asia cluster are self-motivated to achieve, and presence or absence of leadership style is inconsequential.

The autonomous approach to leadership, held in highest regard in the Germanic, Eastern European, and Confucian Asia clusters, was also related to positive outcomes of higher student achievement. Again, the suggestion that approaching leadership from an independent perspective is related to higher student achievement. The relationships of achievement and leadership seem to suggest that high achievement is a product of a cultural disposition to be self-motivated and independent, securing one's own position in the culture by working hard to achieve.

While these generalizations stimulate some discussion about how leaders and culture influence educational improvement, the fact remains that leadership and achievement are situational. How a culture approaches leadership certainly conveys values and beliefs about life, and education is largely a human enterprise, influenced by those values and beliefs. In a broad sense, the authors of this study discovered that how a cultural cluster views leadership matters in student achievement.

In brief, the correlations generate more questions about how school leadership is viewed within cultures as compared to leadership in business and industry. By studying leadership characteristics of principals/headmasters, researchers may provide a useful portrayal of how educators around the world conceptualize leadership. More importantly, they may learn more about the leadership process and how it is influenced by culture and how it influences effectiveness of schools. By exploring the relationship of school leader behaviors and student achievement, researchers place a spotlight on school leaders and how they view their leadership as contributory to student academic performance.

## **5. Summary and Conclusions**

With a desire to conduct and coordinate research that spans diverse cultural environments and school leaders within those environments, the researchers recognize that cross-cultural research is challenging and complex. Studying leadership in cultural context, both from a linguistic and methodological design perspective, presents problems. By administering the GLOBE instrument to school leaders, researchers could, first of all, establish the importance and value of leadership dimensions within cultural clusters, as reported by school leaders. By identifying the broad dimensions that are universal and the broad dimensions that are culturally contingent, researchers can generate an approach to understanding cross cultural school leadership. Data from such studies generate the possibility of understanding the diverse ways in which school leadership is perceived by educators from different regions of the world. The leadership dimensions also, by representing a broad range of leader behaviors, offer a passageway into the flat world and understanding the cultural context of leadership, as researchers seek to discover variances of school leader behaviors and influence of situational effects.



## 6. Dissemination

In reviewing the literature, it is apparent that the study of school leadership effectiveness from a global perspective poses many challenges (Zhao, 2010). Language barriers, accessibility to school leaders, and the need for large-scale coordination of researchers to undertake such a project led the investigators of this study to the Global Leadership and Organizational Behavior Effectiveness (GLOBE) research. The researchers are seeking research partners from around the globe to collaborate in collecting data for the next steps in this international project.

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