The Relationship between Leadership and Multiple Intelligences with the 21st Century's Higher Education Faculty

Stefanie D. Wilson
University of Hawaii-West Oahu

Bahaudin G. Mujtaba
Nova Southeastern University

Based upon extensive studies by researchers on human intelligences known as multiple intelligences, this study involves the quest to further Howard Gardner's research as it applies to faculty members in higher education. This quantitative research study discovered and identified the degree of relationships between the domains of multiple intelligences: (a) interpersonal, (b) intrapersonal, and (c) linguistic intelligences, and (d) leadership and demographic characteristics such as, (a) age, (b) gender and (c) ethnicity among higher education faculty. Using a survey instrument, primary data was collected from a sample of 205 faculty members in the United States. Furthermore, the researchers examined and analyzed certain aspects of the field of leadership, and the impact Gardner's multiple intelligences may or may not have on leadership selection, training and development based on the results obtained. Implications and suggestions for future research are discussed.

INTRODUCTION

Identifying future leaders is an important yet a complex task for all organizations. Research findings from the *Developing Leaders for the 2010 Report* indicated that only "thirty four (34%) percent of the U.S. companies report being effective at identifying future leaders, and recent research studies conducted by Manchester Consulting indicated that four in ten senior leaders fail within the first eighteen months on the job" (Ellis, 2003, p. 58).

Ineffective leadership at the helm has major consequences for the vitality of a business and has proven to be very costly (Tyrell & Swain, 2000). Developmental Dimensions research shows that it costs at least $1 million to employ a new executive for a year (Ellis, 2003). Statistics gleaned from the *100 People Report Participant* indicated that in 2001 it cost companies millions of dollars to replace managers and hourly staff. The figures from the *100 People Report Participant* indicated that in 2001 it cost companies more than $454 million to replace managers and $4 million to replenish hourly staff (Lebhar-Friedman, 2003).

The specific problem statements for this research study centered on identifying, retaining, and developing future leaders for modern institutions and organizations. Possible causes of organizations being ineffective at identifying, retaining, or developing future leaders are the current recruiting and leadership-training tools used for selecting leaders who are not competent, or the poor implementation of effective development programs for leaders (Fiedler, 2001; Freeman, Inc., 1999). The theory of multiple

intelligences has significant implications for leader effectiveness, leader selection and training/development. Mitigating overlooked talent, eliminating unfilled or poorly filled niches present within organizations and in our society, and guiding the leaders with the right skill sets for the right role are challenges addressed by the theory of multiple intelligences (Gardner, 1993).

Leadership effectiveness has always been and will continue to be paramount to the success of organizations (Wilson and Mujtaba, 2008; Robbins, 2001). To compete, leaders of organizations must have global sensitivity, cultural fluency, technological literacy, entrepreneurial flair, and a plethora of effective leadership skills, talents and abilities (Crainer & Dearlove, 1999). Each work environment and situation may require unique leadership expectations ranging from, but not limited to, transmitting knowledge, creating an environment that influences the behaviors of human beings or fostering innovative operational solutions to realize the organization's vision (Shahnasarian, 1996). While leadership challenges will continue to heighten due to internal and external organizational pressures, the shortage of executive talent is seen to be the foremost challenge organizations will face within the next few decades (Crainer & Dearlove, 1999).

Contemporary and recent studies have suggested that intelligence contributes to effective leadership (Riggio, Murphy & Prozzolo, 2002). Since the 1920s and 1930s, leadership theorists have indicated that "multiple forms of intelligence possessed by effective leaders are the types of characteristics that may make leaders effective in a range of leadership situations, because they involve abilities to adapt to a variety of social and interpersonal situations" (Riggio et al., p. 3). Steinberg's Triarchic Theory of Intelligence and Howard Gardner's Multiple Intelligence Theory are two well-known frameworks for multiple intelligences (Riggio et al.).

Leadership theorists such as Fiedler, Bass, Chemers, and Winter include multiple intelligences into their leadership theories (Riggio et al., 2002). Armstrong (1999) suggested that multiple domains of intellectual abilities have a unique skill and occupational channel. However, Gardner (1999) believed that structural roles are matched to domains of multiple intelligences.

This study was based on the theoretical framework of Gardner's (1999) original seven domains of multiple intelligences, including various human intelligences such as musical intelligence to intrapersonal intelligence, the intelligence involved in understanding oneself. In addition to Gardner's original list of seven domains of multiple intelligences, three additional domains of intelligences such as naturalistic, spiritual, and existential were discussed as possible candidates for inclusion. Although contemplated, Gardner (1999) had not expanded the original list of seven domains of multiple intelligences, and thus this study focused on three of Gardner's original list of seven domains of multiple intelligences. This study closely examined interpersonal, intrapersonal, and linguistic domains of multiple intelligences of leaders, as Gardner (1999) indicated that these three domains of multiple intelligences are demonstrated by, and are crucial to, leaders.

Gardner (1993) believed that persons may have different intelligence profiles with which they are born, and certainly, they end up with different profiles. "Where individuals differ is in the strengths of these intelligences, the so-called profile of intelligences, and the ways in which such intelligences are invoked and combined to carry out different task, solve problems, and progress in various domains" (Gardner, 1991, p. 12). Gardner (1993) stated, although a person may not be gifted in any intelligence, due to their ability to demonstrate a combination or mix of skills, they may be able to effectively fill some niche quite well.

Gardner (1993) suggested human beings have evolved to exhibit several intelligences that work in concert and not in isolation in a particular cultural setting or community. Armstrong (1999) believed that it is rare for an individual to achieve high levels of competence for more than five multiple intelligences, although an individual might strongly identify with various multiple intelligences, which are uniquely expressed in that person's life. Gardner (1999) argued that although leaders have different strengths and weaknesses they exhibit several multiple intelligences. Gardner believes that leaders demonstrate a generous degree of linguistic intelligence, interpersonal intelligence, and intrapersonal intelligence (p. 128). In other words, Gardner postulated that promising leaders have the gift of 'followership',

demonstrate a strong sense of self, display effective communication skills, and have an eloquent way of helping others understand their life situations.

RESEARCH METHODOLOGY

This research study utilized a quantitative, non-experimental, descriptive correlational method that collected "data on predetermined instruments that yield statistical data" (Creswell, 1994, p. 18). Since the research study utilized a survey, summarized data through statistical analysis, and explored possible correlations, it was deemed appropriate to utilize a quantitative method in this research study. Several types of quantitative research methods include, and are not limited to, (a) descriptive, (b) correlational, (c) developmental, (d) observational study, and (e) experimental or (f) quasi-experimental methodologies (Creswell, 1994; Leedy & Ormrod, 2001). The primary and distinct advantage of using a correlational method over the causal–comparative or experimental methods "is that it permits the relationships [to be analyzed] among a large number of variables in a single study" (Gall et al., 1996, p. 414). The correlational research method accomplished the research study goals, since the quantitative methods utilized in this research study relied on postpositivist knowledge claims, and utilized a survey instrument as an inquiry tool to discover the degree of relationships between the domains of multiple intelligences: (a) intrapersonal, (b) interpersonal, and (c) linguistic intelligence, and (d) leadership and demographic characteristics such as, (a) age, (b) gender, and (c) ethnicity among a population of 287 XYZ faculty within the United States (Creswell, 1994). Creswell (1994) stated "it is also the best approach to use to test a theory or explanation" (p. 22).

This quantitative, non-experimental, descriptive correlational research method discovered the degree of relationships between the domains of multiple intelligences: (a) intrapersonal, (b) interpersonal, and (c) linguistic intelligence, and (d) leadership and demographic characteristics such as, (a) age, (b) gender and (c) ethnicity among a population of 287 XYZ faculty members within the United States. This correlational method involved collecting data on several variables: (a) intrapersonal intelligence, (b) interpersonal intelligence, (c) linguistic intelligence, (d) leadership, (e) age, (f) gender, and (g) ethnicity and computing a chi-square (Gall et al., 1996). This quantitative, non-experimental, descriptive correlation study approach described the relationships among variables, predicting a criterion variable, and/or testing a model of the interrelationship among variables (Locke, Silverman & Spirduso, 1998). This study design also provided a credible approach to clearly understanding the relationship between the data collected (Bickman & Rogs, 1997).

The intact instrument selected for this study called the Multiple Intelligences Checklist developed by Kline and Saunders (1998) was adapted from the domains of multiple intelligences work of Howard Gardner. The checklist is an appraisal of an individual's multiple intelligences and included 77 multiple intelligence characteristics. "We all possess multiple intelligences. The relative strength varies from person to person, partly because of the different ways we have all developed as a result of our learning experiences" (Kline & Saunders, p. 175). Kline and Saunders (1998) developed this "checklist which provides a simple and easy appraisal of an individual's multiple intelligences" (p. 152).

Analyses of Data

This research study examined data from a sample and generalized to a population so that inferences could be made about domains of multiple intelligences of leaders. This study discovered the degree of relationships between the domains of multiple intelligences and leadership and demographic characteristics. For this study, a chi-square test determined the statistical significance and whether the null hypothesis could be rejected (Gall et al., 2003). This study examined four null hypotheses and focused on testing if there were relationships among seven variables: (a) intrapersonal intelligence, (b) interpersonal intelligence, (c) linguistic intelligence, (d) leadership, (e) age, (f) gender, and (g) ethnicity.

The researchers examined and analyzed primary data to discover and infer about domains of multiple intelligences of leaders using the data results from the Multiple Intelligences (MI) Checklist, and demographic questions administered via mail or personally to XYZ faculty. The MI Checklist was an

instrument used to appraise multiple intelliegences of XYZ faculty and included 77 multiple intelligence characteristics. Also, the respondents were asked six demographic questions about their leadership or non-leadership status, years of teaching experience, gender, age, profession, and ethnicity.

The MI Checklist used as the survey instrument contained 77 lines of words, divided into 11 groups of seven lines each. The respondents were asked to check the box provided for each line of words or statement (S#) that described them. Respondents checked as many boxes as they felt the corresponding line of words described them. The respondents repeated the process until the survey was completed. For reporting purposes, each checked box corresponding to the line of words or each statement selected by the survey participants, related to specific multiple intelligences and were grouped accordingly.

XYZ corporate headquarters, located in the Southwest United States of America, employs over 24,000 employees, 17,000 faculty, and 390 leaders throughout North America, South America, Europe, and Asia. The target population for this study included a population of 287 XYZ faculty who are leaders, defined as persons who manage or supervise an individual or staff of people within an existing organization, or non-leaders, defined as persons who do not supervise or manage an individual or staff of people within an existing organization (Hesselbein et al., 1996). A total of 205 or 71% of the 287 XYZ faculty population targeted for the study responded to the survey. A 71% response rate is an excellent response rate, as 30% is considered an acceptable response rate for mail surveys.

The researchers used the 77 MI Checklist and several demographic questions that addressed four hypotheses. Data were analyzed for each statement selected by the study participants using quantitative data analysis and chi square value results upon which the researchers derived conclusions. Each survey statement was analyzed and grouped into seven domains of multiple intelligences: Visual/Spatial Intelligence, Bodily/Kinesthetic Intelligence, Interpersonal Intelligence, Intrapersonal Intelligence, Musical Intelligence, Linguistic Intelligence, and Logical/Mathematical Intelligence.

Hypotheses Results

Three chi-square tests were developed for each null hypothesis to examine the relationship between each of the domains of multiple intelligences with the criterion variable. There were 11 statements for each of the domains, thus it was possible for a respondent to check all statements relating to a domain that described them. The total number of statements checked that related to a domain were calculated, and the top domains, or three most prominent domains for the respondent were identified. The following sections present the hypotheses that the researchers analyzed and the outcome of each.

Null Hypothesis 1: There is no statistically significant relationship between intrapersonal, interpersonal, and linguistic domains of multiple intelligences and leader's current leadership position.

If the participants managed or supervised one or more individuals within an existing organization, they were classified for the purposes of this study as leaders. A total of 126 respondents were classified as leaders. If the participants do not manage or supervise one or more individuals within an existing organization, they were classified for the purposes of this study as non-leaders. A total of 79 respondents were classified as non-leaders.

Tables 1, 2, and 3 include survey participant responses to the aforementioned statements depicting interpersonal, intrapersonal, and linguistic intelligence characteristics, as well as leader or non-leader status. Leaders for this study are individuals who manage one or more individuals and non-leaders are those individuals who do not manage any individuals. Tables 1, 2, and 3 depict chi-square values of .059, .133, and .382, respectively. None of these was statistically significant. Thus, no significant differences were found between intrapersonal, interpersonal, and linguistic domains of multiple intelligences and the leader's current leadership position. Null Hypothesis 1 was not rejected.

TABLE 1
INTERPERSONAL INTELLIGENCE OF LEADERS AND NON-LEADERS

LEADER	Leader	Non-Leader	Chi-Square Value	P Value
In TOP Domain	(85) 68%	(52) 66%		
NOT in Top Domain	(41) 33%	(27) 34%		
Base (n=205)	(126)	(79)	.059	.809

TABLE 2
INTRAPERSONAL INTELLIGENCE OF LEADERS AND NON-LEADERS

LEADER	Leader	Non-Leader	Chi-Square Value	P Value
In TOP Domain	(100) 79%	(61) 77%		
NOT in Top Domain	(26) 21%	(18) 23%		
Base (n=205)	(126)	(79)	.133	.715

TABLE 3
LINGUISTIC INTELLIGENCE OF LEADERS AND NON-LEADERS

LEADER	Leader	Non-Leader	Chi-Square Value	P Value
In TOP Domain	(63) 50%	(36) 46%		
NOT in Top Domain	(63) 50%	(43) 54%		
Base (n=205)	(126)	(79)	.382	.537

Null Hypothesis 2: There is no statistically significant relationship between intrapersonal, interpersonal, and linguistic domains of multiple intelligences and gender.

Tables 4, 5 and 6 include survey participant responses to the statements depicting interpersonal, intrapersonal, and linguistic intelligence characteristics by gender. None of the values was statistically significant. Thus, no significant differences were found between intrapersonal, interpersonal, and linguistic domains of multiple intelligences by gender. Null Hypothesis 2 was not rejected.

TABLE 4
INTERPERSONAL INTELLIGENCE BY GENDER

GENDER	Female	Male	Chi-Square Value	P Value
In TOP Domain	(79) 68%	(58) 65%		
NOT in Top Domain	(37) 32%	(31) 35%		
Base (n=205)	(116)	(89)	.196	.658

TABLE 5
INTRAPERSONAL INTELLIGENCE BY GENDER

GENDER	Female	Male	Chi-Square Value	P Value
In TOP Domain	(93) 80%	(68) 76%		
NOT in Top Domain	(23) 20%	(21) 24%		
Base (n=205)	(116)	(89)	.424	.515

TABLE 6
LINGUISTIC INTELLIGENCE OF BY GENDER

GENDER	Female	Male	Chi-Square Value	P Value
In TOP Domain	(62) 53%	(37) 42%		
NOT in Top Domain	(54) 47%	(52) 58%		
Base (n=205)	(116)	(89)	2.844	.092

Null Hypothesis 3: There is no statistically significant relationship between intrapersonal, interpersonal, and linguistic domains of multiple intelligences and ethnicity.

A total of 132 categorized themselves as White, 43 classified themselves as Asian, and 29 classified themselves in other ethnic categories. Tables 7, 8 and 9 include survey participant responses to the aforementioned statements depicting interpersonal, intrapersonal, and linguistic intelligence characteristics by ethnicity. Tables 7, 8 and 9 depict chi-square values of 2.545, .282, and 2.673, respectively and none of these values was statistically significant. Thus, no significant differences were found between intrapersonal, interpersonal, and linguistic domains of multiple intelligences by ethnicity. Null Hypothesis 3 could not be rejected.

TABLE 7
INTERPERSONAL INTELLIGENCE BY ETHNICITY

ETHNICITY	White	Asian	All Others	Chi-Square Value	P Value
In TOP Domain	(89) 67%	(25) 58%	(22) 76%		
NOT in Top Domain	(43) 33%	(18) 42%	(7) 24%		
Base (n=205)	(132)	(43)	(29)	2.545	.280

TABLE 8
INTRAPERSONAL INTELLIGENCE BY ETHNICITY

ETHNICITY	White	Asian	All Others	Chi-Square Value	P Value
In TOP Domain	(105) 80%	(33) 77%	(22) 76%		
NOT in Top Domain	(27) 21%	(10) 23%	(7) 24%		
Base (n=205)	(132)	(43)	(29)	.282	.868

TABLE 9
LINGUISTIC INTELLIGENCE BY ETHNICITY

ETHNICITY	White	Asian	All Others	Chi-Square Value	P Value
In TOP Domain	(67) 51%	(22) 51%	(10) 35%		
NOT in Top Domain	(65) 49%	(21) 49%	(19) 65%		
Base (n=205)	(132)	(43)	(29)	2.673	.263

Null Hypothesis 4: There is no statistically significant relationship between intrapersonal, interpersonal, and linguistic domains of multiple intelligences and age.

Tables 10, 11 and 12 include survey participant responses to the aforementioned statements depicting interpersonal, intrapersonal, and linguistic intelligence characteristics by age. Tables 10, 11 and 12 depict chi-square values of .713, 9.282, and .935, respectively. A statistically significant chi-square value was found for intrapersonal intelligence and age. Thus, there is a relationship between these two variables. There was no statistically significant relationship between interpersonal intelligence or linguistic intelligence and age. Null Hypothesis 4 was rejected on one domain but not on the other two.

TABLE 10
INTERPERSONAL INTELLIGENCE BY AGE

AGE	< 40	41-50	51-60	60+	Chi-Square Value	P Value
In TOP Domain	(28) 72%	(37) 65%	(54) 65%	(18) 69%		
NOT in Top Domain	(11) 28%	(20) 35%	(29) 35%	(8) 31%		
Base (n=205)	(39)	(57)	(83)	(26)	.713	.870

TABLE 11
INTRAPERSONAL INTELLIGENCE BY AGE

AGE	< 40	41-50	51-60	60+	Chi-Square Value	P Value
In TOP Domain	(29) 74%	(47) 83%	(70) 84%	(15) 58%		
NOT in Top Domain	(10) 27%	(10) 18%	(13) 16%	(11) 42%		
Base (n=205)	(39)	(57)	(83)	(26)	9.282	.026

TABLE 12
LINGUISTIC INTELLIGENCE BY AGE

AGE	< 40	41-50	51-60	60+	Chi-Square Value	P Value
In TOP Domain	(20)	(28)	(37)	(14)		
	51%	49%	45%	54%		
NOT in Top	(19)	(29)	(46)	(12)		
Domain	49%	51%	55%	46%		
Base (n=205)	(39)	(57)	(83)	(26)	.935	.817

Tables 13, 14, and 15 below depict the age, gender, ethnicity, and current profession of XYZ faculty who self-reported to have (a) interpersonal, (b) intrapersonal, or (c) linguistic domains of multiple intelligences as their top domain, meaning their most prominent domain. The highest proportion of responses among XYZ faculty perceived to have interpersonal, intrapersonal, or linguistic domains were female, white, between the ages of 51 to 60 years, and currently work full-time in a professional capacity. For this study, professional capacities include architects, computer analysts, counselors, economists, editors, educators, elementary teachers, engineers, lawyers, librarians, nurses, psychologists, school principals, scientists, secondary teachers, sociologists, and university teachers.

TABLE 13
INTERPERSONAL INTELLIGENCE, AGE, GENDER, ETHNICITY, & PROFESSION OF LEADERS AND NON-LEADERS

Interpersonal (as Top Domain)	(Count)	(Percentage)
AGE		
< 40	28	20
41 – 50	37	27
51 – 60	54	39
61+	18	13
GENDER		
Male	58	42
Female	79	58
ETHNICITY		
White	89	65
Asian	25	18
All Others	22	16
PROFESSION		
Professional	78	57
Technical	1	1
Executive, Administrative, Managerial	32	23
Sales	2	2
Other	23	17
Total Respondents	(137)	

IMPLICATIONS

This study examined four null hypotheses and focused on testing if there were relationships among seven variables: (a) intrapersonal intelligence, (b) interpersonal intelligence, (c) linguistic intelligence, (d) leadership, (e) age, (f) gender, and (g) ethnicity. The researchers examined and analyzed the data results from the Multiple Intelligences (MI) Checklist and demographic questions, administered via mail or personally to XYZ faculty. The MI Checklist, an instrument used to appraise multiple intelligences of XYZ faculty, included 77 multiple intelligence characteristics, and the six demographic questions pertained to leadership or non-leadership status, years of teaching experience, gender, age, profession, and ethnicity.

The data results indicated no statistically significant relationship found between intrapersonal, interpersonal, and linguistic domains of multiple intelligences and leader's current position, thus Null Hypothesis 1 was not rejected. Null Hypothesis 2, also could not rejected, as the results indicated no statistically significant relationships between intrapersonal, interpersonal, and linguistic domains of multiple intelligences and gender. Also, Null Hypothesis 3 could not be rejected, as there was no statistically significant relationship between intrapersonal, interpersonal, and linguistic domains of multiple intelligences and ethnicity. For Null Hypothesis 4, the data results indicated a statistically significant relationship between intrapersonal intelligence and age, and no statistically significant relationship was found between interpersonal intelligence or linguistic intelligence and age. Thus, Null Hypothesis 4 was rejected on one domain but not on the other two domains.

TABLE 14
INTRAPERSONAL INTELLIGENCE, AGE, GENDER, ETHNICITY, & PROFESSION OF LEADERS AND NON-LEADERS

Intrapersonal (as Top Domain)	(Count)	(Percentage)
AGE		
< 40	29	18
41 – 50	47	29
51 – 60	70	44
61+	15	9
GENDER		
Male	68	42
Female	93	58
ETHNICITY		
White	105	65
Asian	33	21
All Others	22	14
PROFESSION		
Professional	92	57
Technical	1	1
Executive, Administrative, Managerial	35	22
Sales	3	2
Other	29	18
Total Respondents	(161)	

TABLE 15
LINGUISTIC INTELLIGENCE, AGE, GENDER, ETHNICITY, & PROFESSION OF LEADERS AND NON-LEADERS

Linguistic (as Top Domain)	(Count)	(Percentage)
AGE		
< 40	20	20
41 – 50	28	28
51 – 60	37	37
61+	14	14
GENDER		
Male	37	37
Female	62	63
ETHNICITY		
White	67	68
Asian	22	22
All Others	10	10
PROFESSION		
Professional	58	59
Technical	0	0
Executive, Administrative, Managerial	21	21
Sales	0	0
Other	20	20
Total Respondents	(99)	

There are several implications that are evident from the data results of this study. They are as follows: First, successful organizations of the future must be poised to understand and demonstrate its core competencies and leadership capabilities of its diverse workforce as essential for its survival to remain as a competitive force in our dynamic, global society. To maximize organizational effectiveness, organizations and their employees will be required more than ever to understand and apply domains of multiple intelligences characteristics of leadership as described by Gardner as crucial to leaders. In addition to creating new products and services and enhancing knowledge intensive competences, organizations must focus on implementing viable processes to understand, select, train, and develop leadership talent. Leadership as a role of management designated for the select few is no longer effective. Leadership, more than ever before, has become a role for employees of all levels and roles within learning organizations. Thus, organizations must be aware of the leading and learning requirements for organizational success to become a reality.

Second, it is imperative for organizations and its employees to understand the benefits and apply the various domains of multiple intelligences in their organizational settings. This is necessary to meet the unique training needs required for each employee, to maximize the skills of each employee, and enhance organizational productivity. Knowledge of the domains of multiple intelligences that are present or lacking by organizations or its employees can foster a dialogue that assist with understanding: (1) current approaches to learning, including handling ideas and situations, (2) how new information is learned and styles favored by individuals, and (3) viable alternatives to emphasize preferred learning styles or problem solving techniques. Knowledge of the domains of multiple intelligences, present or lacking by its

employees, can also be linked to determine the best training and delivery methods to meet the needs of the individuals and the organization.

Third, although Gardner's multiple intelligences theory has been applied to the field of education, multiple intelligences should be extended into the larger arena of business and other fields. Although research on multiple intelligence and leadership is still relatively new, there are important implications to understanding the true relationship between multiple intelligences and leadership effectiveness. As the relationship between multiple intelligence and leadership is better understood, this may lead to viable approaches to enhance the selection, training, and development of organizational leaders in education, business and other fields.

Future research should continue to explore the breadth and variety of multiple-intelligence constructs, specifically as it pertains to the relationship between leadership and the varying methods through which leaders can use domains of multiple intelligences to inform their thinking, their decision making, their human resource selection choices, and the educational development of their own organizations. The limitations of this study as constructed focused on the utilization of results in an academic environment, at the higher education level. However, future research should be reproduced with other organizations in other fields such as business, sports, and government to include diverse cultures and populations and determine if the results are generalizable. Furthermore, a combination of research approaches, such as scenario-based and performance-based, in addition to using a self-reporting instrument to assess multiple intelligences should be considered for further research.

The unpredicted relationships found in this study also provide an impetus for future research. The relationship between intrapersonal intelligences and age for example should be explored further. Experts agree that "As we age, our intelligences simply become internalized. We continue to think differently from one another, indeed, differences in modes or mental representation are likely to increase throughout active life" (Gardner, 1999, p. 112). This critical issue as stated by Gardner represents in many ways the opportunities for leader development in organizations, governments, and non-profit agencies as the lack of continual change, continual newness, continual thinking defeats the potential of leaders to continually refresh their understanding of leadership in its relationship to organizational performance. Intelligence in its varying forms can significantly reframe organizational performance, organizational strategy, and organizational development. Thus, leaders can empower themselves and others through their focus on intelligence as a criterion for effective decision making.

Additionally, the results of this study suggest that XYZ faculty that are female, white, between the ages of 51 to 60 and currently working full-time in a professional capacity, demonstrate unique learning, problem solving, and decision making skills characterized by leaders more so than other XYZ faculty of a different gender, ethnicity, age, or profession. The data results from this study agree with current literature view, and indicate that men and women prioritize intelligences differently. Further study to examine the relationship between the domains of multiple intelligences and gender differences, specifically as it pertains to leadership selection, training, and development should be pursued, and it calls into question a challenge for women faculty to continue demonstrating their intelligences in those roles traditionally reserved for men. Lastly, further research needs to be conducted that explores the efficacy of multiple intelligences required for different level of leaders within organizations.

SUGGESTIONS AND RECOMENDATIONS

There are further suggestions that can be drawn from this study regarding the domains of multiple intelligences. First, this study confirmed that XYZ faculty classified as leaders embody the domains of multiple intelligences Gardner (1999) suggested are crucial to leaders. These domains of multiple intelligences are interpersonal intelligence, intrapersonal intelligence, and linguistic intelligence. The results indicated that 50% or more of XYZ faculty classified as leaders, self-reported to have interpersonal, intrapersonal, and linguistic intelligences as their top domain. The top domains are those most prominent intelligence statements selected by the respondents, as they believed characterized them.

Second, this study solidified the prevailing view that multiple intelligences are present and unique for every individual. The data results for this study indicate that leaders and non-leaders embody similar yet different human intelligences. This study revealed that 50% or more of XYZ faculty classified as leaders embodied as their top domains, intrapersonal, interpersonal, linguistic, and visual/spatial intelligences. Interestingly, 50% or more of XYZ faculty classified as non-leaders embody as their top domains, intrapersonal, interpersonal, and visual/spatial intelligences. However, less than 50% of the XYZ faculty classified as non-leaders selected linguistic intelligence statements.

Third, this study revealed the demographic profiles of XYZ faculty. The data results of this study solidified the notion as discussed in the literature review that individuals are not only different from a demographic perspective such as age, gender, ethnicity, and professions, individuals have unique multiple intelligence characteristics, and this uniqueness is linked to their learning, problem solving, and decision making skills. Based upon the demographic characteristics of the respondents who self-reported to have the intelligences the results point to a very important conclusion. The data results suggest that XYZ faculty that are female, white, between the ages of 51 to 60 and currently working full-time in a professional capacity, demonstrate unique learning, problem solving, and decision making skills characterized by leaders more so than other XYZ faculty of a different gender, ethnicity, age, or profession.

Fourth, the results also depict variations of (a) intrapersonal, (b) interpersonal, and (c) linguistic domains of multiple intelligences of XYZ faculty. For leaders and non-leaders alike, the data results indicate that their top domains, or most prominent domains, were intrapersonal intelligence, totaling 161 respondents, or 78.5%, followed by interpersonal intelligence, totaling 137 respondents, or 66.8%, visual/spatial intelligence at 116 respondents, or 56.6%, logical/mathematical intelligence at 101 respondents, or 49.3%, and linguistic intelligence at 99 respondents, or 48.3%. The results agree with the literature view, and suggest the importance of organizations and its employees to demonstrate personal intelligences, specifically if the entity is involved in public interaction, and its product, or service deliverable is in the area of self-knowledge. XYZ is certainly an organization that constantly interacts with the public, is a learner-centered institution, and the faculty embodies personal intelligences as their top domains.

Plausible explanations for the first and second conclusions drawn that leaders embody (a) intrapersonal, (b) interpersonal, and (c) linguistic intelligences, and these multiple intelligences are present, unique, and vary in percentage levels for XYZ faculty, leaders and non-leaders may be attributed to their diverse beliefs and valued human traits, varied lessons drawn from their experiences in life, and their ability to effectively apply those lessons.

A possible explanation for the third conclusion drawn that the demographic profiles of XYZ leaders are unique, and for this study indicated the highest proportion of (a) intrapersonal, (b) interpersonal, and (c) linguistic responses among XYZ faculty, both leaders and non-leaders were female, white, between the ages of 51 to 60 years, and currently working full time in a professional capacity may be attributed to the possible differences in the way men and women faculty prioritize intelligences. A research study conducted by Carol Gilligan on moral judgments indicate that females place a greater emphasis on interpersonal considerations, as males tend to draw on intelligences such as logical/mathematical thinking (Mujtaba, 2010; Gardner, 1999). Dessler writes that “Interestingly, one-often noticed and scientifically supported difference between men and women leaders may prove to be a boon for women managers. Women often score higher on measures of [intrapersonal, interpersonal, and linguistic intelligence characteristics, such as] patience, relationship development, social sensitivity, and communication” (Dessler, 2001, p. 305).

CONCLUSION

The literature review unequivocally supports the notion regarding the significance of effective leadership as the foundation of organizational success, and how effective leadership selection, training, and development is paramount to making organizational success a reality. Current literature also purports

that learning organizations of today and tomorrow will require innovative and viable selection, training, and development approaches to attract and retain exceptionally talented and skilled individuals, be it leaders or non-leaders. It is believed that the theory of multiple intelligences is a viable answer that addresses this challenge, and offers solid approaches to enhance human intelligences, and individualized learning that will contribute to organizational success.

Chi-square tests were developed for each null hypothesis. The data results revealed the demographic profiles of XYZ faculty that self reported to have (a) interpersonal, (b) interpersonal, and (c) linguistic domains of multiple intelligences. The highest proportion of responses among XYZ faculty, both leaders and non-leaders, were female, white, between the ages of 51 to 60 years, and currently working full-time in a professional capacity.

The data results indicated variations of the domains of multiple intelligences of XYZ faculty. Interestingly, the data indicated that 50% or more of the leader respondents selected statements on the checklist relating to interpersonal, intrapersonal, linguistic, and visual/spatial intelligences as their top domains, meaning their most prominent domains. Whereas, data results indicated 50% or more of the non-leaders also selected interpersonal, intrapersonal, and visual/spatial intelligences statements, however less than 50% of the non-leaders selected linguistic intelligence statements.

REFERENCES

Anonymous. (1998). Why traditional hiring systems don't work. *Journal of Canadian Manager*, 23 (4), 16-17. Website: http//rdsweb2.rdsinc.com/

Armstrong, T. (1999). *Seven kinds of smart.* New York: Plume & Penguin Putnam, Inc.

Armor, D. J. (Ed.). (2003). *Maximizing intelligence*. New Brunswick, NJ: Transaction.

Blackburn, R. (Summer 2002). *Multiple intelligences and leadership*. Retrieved April 6, 2003, from ProQuest Database.

Bickman, L., & Rogs, D. J. (1997). *Handbook of applied social research methods.* Thousand Oaks, CA: Sage.

Brualdi, A. C. (1996). *Multiple intelligences: Gardner's theory.* Retrieved December 16, 2002, from ERIC Clearinghouse on Assessment and Evaluation Washington DC Database.

Crainer, S., & Dearlove, D. (1999). Death of executive talent [electronic version]. *Journal of Management Review, 88 (7), 16-23 July*. Retrieved July 29, 2003, from http//rdsweb2.rdsinc.com/

Creswell, J. W. (1994). *Research design.* Thousand Oaks, CA: Sage.

Dessler, G. (2001). *Management: Leading people and organizations in the 21st century.* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.

Devlin, S., Jones P, & Martin D. (2002). *Intelligence and success: is it all in the genes?* Mahwah, NJ: Lawrence Erlbaum.

Earley, P. C., & Ang S. (2003). *Cultural intelligence: Individual interactions across cultures*. Stanford, CA: Stanford University Press.

Ellis, K. (2003). Making waves: with a leadership crisis on the horizon, organizations are looking within to build talent pools of their own. *Journal of Training, 40(6), 16.* Website: http://rdsweb2.rdsinc.com/

Esters, I. G., & Ittenbach, R. F. (1999, June). *Contemporary theories and assessments of intelligence: A primer*. Retrieved October 20, 2003, from EBSCO Database.

Eysenck, H.J. (1998). *A new look intelligence*. New Brunswick, NJ: Transactions Publishers.

Fiedler, F. E. (2001). When IQ + experience = performance. *Journal of Leadership and Organizational Development, 22 (3*), 132.

Fish, J. M. (2002). *Race and intelligence: Separating science from myth*. Mahwah, NJ: Lawrence Erlbaum Associates.

Freeman, L. (1999, September). When the boss is the problem . *Credit Union Journal*, 3 (36), 18. Website: http// rdsweb2.rdsinc.com/texis/rds/suite/ +smeBljzCwwwww Fqzvh+s+svwwxFqdlprdnD

Gall, M. D., Gall, J. P.,& Borg, W. R. (Eds.). (2003). *Educational research: An introduction* (7th ed.). New York: Pearson Education Inc.

Gall, M. D., Gall, J. P., & Borg, W. R. (Eds.). (1996). *Educational research: An introduction* (4th ed.). New York: Pearson Education Inc.

Gardner, H. (1991). *The unschooled mind: How children think and how schools should teach*. New York: BasicBooks.

Gardner, H. (1993). *Multiple intelligences: The theory in practice*. New York: BasicBooks.

Gardner, H. (1983). *Frames of Mind*. New York: BasicBooks.

Gardner, H. (1995, September 15). *A cognitive view of leadership*. Retrieved April 6, 2003, from EBSCO Web Site: http://web15.epnet.com/citation.asp?tb=1&_ug=dbs+0%2C1%2C2%2C3%2C5+In+en%2D

Gardner, H. (1999). *Intelligence reframed*. New York, NY: BasicBooks.

Hesselbein, F., Goldsmith, M., & Beckhard, R. (1996). *The leader of the future: New visions, strategies, and practices for the next era*. (1st ed.). San Francisco, CA: Jossey-Bass.

Kline, P. & Saunders, B. (1998). *Ten steps to a learning organization* (2nd ed.). Arlington, VA: Great Ocean Publishers.

Lebhar-Friedman, Inc. (2003). Recruiting execs learn economics of retention at annual conference. *Journal of Nation's Restaurant News, 37* (27), 18. Website: http//rdsweb2.rdsinc.com/

Locke, L.F., Silverman, S.J., & Spirduso, W.W. (1998). *Reading and understanding research*. Thousand Oaks, CA: Sage.

Mujtaba, B. G. (2010). *Business ethics of retail employees: How ethical are modern workers?* ILEAD Academy Publications; Davie, Florida, United States.

Project Summit. (2002, December 16). *Howard gardner: Multiple intelligence theory proponent*. Retrieved December 16, 2002, from http://www.aenc.org/ABOUT/MI-Gardner.html.

Riggio, R.E., Murphy, S.E. & Pirozzolo, F. (2002). *Multiple intelligences and leadership*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Robbins, S. P. (2001). *Organizational Behavior* (9th ed.). Upper Ruzgis, P. & Grigorenko E.L. (1994). *Cultural meaning systems, intelligence and personality.* New York, NY: Cambridge University Press. Saddle River, NJ: Prentice Hall.

Samuda, R.J. (1998). *Psychological testing of American minorities: Issues and consequences. (2nd ed.).* Thousand Oaks, CA. Sage Publications.

Shahnasarian, M. (1996). *Self-Directed search in business and industry*. Odesssa, FL: Psychological Assessment Resources.

Sternberg, R. J. (2003). *Wisdom, intelligence, and creativity synthesized*. New York: Cambridge University Press.

Sternberg, R.J., Grigorenko, E.L. (2003). *The psychology of abilities, competencies, and expertise*. New York: Cambridge University Press.

Sternberg, R.J., & Kaufman, J.C. (2001). *The evolution of intelligence*. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

Tyrell, B. & Swain, B. (2000). The right stuff [electronic version]. *Journal of Pharmaceutical Executive, 20 (8), 86-94*. Retrieved July 29, 2003, from http://rdsweb2.rdsinc.com/texis/rds/suite/+smeBljzCwwwwwFqzvh+s+svwwxFqdlprdnD.

Welch, K. C. (2002). *The bell curve and the politics of negrophobia*. Mahwah, NJ: Lawrence Erlbaum Associates.

White, S. H. (2000). Conceptual Foundations of IQ Testing. *Psychology, Public Policy and Law, 6*(1), 33-43.

Wilson, S. D. and Mujtaba, B. G. (2008). Intelligence and Diversity: A Western and Eastern View from a Global Paradigm. *International Business and Economics Research Journal,* 7(6), 29-39.

Wilson, S. D. and Mujtaba, B. G. (2007). The relationship between multiple intelligences, culture and diversity. *International Business & Economics Research Journal, 6(8), 9-22*.

Wilson, S. D., (2005). *The relationship between leadership and domains of multiple intelligences*. UMI Microform Num: 3151206. ProQuest Information and Learning Company.

Yang, S. Y. & Sternberg, R. J. (1997). Conceptions of intelligence in ancient Chinese philosophy. *Journal Theories of Philosophical Psychology, 7 (2) 57-69*.