

THE EFFECT OF AIKIDO TRAINING ON COMPUTER-MEDIATED
COMMUNICATION BETWEEN VIRTUAL TEAMS

by

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ABSTRACT

Executives are confronted with the compelling need to become effective communicators in order to become effective leaders. The lack of paraverbal cues in online communication is a problem that causes miscommunication. The focus of this quantitative inferential study was to measure changes in interpersonal communication strengths as outcomes of awareness training through the art of Aikido, and how this training may or may not influence computer-mediated communication styles among regional virtual workgroups in a sales and services company in the United States. The specific areas of communication measured in this study included the communication style and strengths of dominance, extroversion, patience, and conformity contained in the Forté® Communication Style Survey® (Morgan, 2005). In this study, the null hypothesis could not be rejected; there were no statistically significant relationships found in this study between Aikido/self-awareness training and online communication, given the study's design, sample population, and other variables. The researcher provides suggestions for future research and the implications of this study to leadership and the broader society.

DEDICATION

I would like to dedicate this study to my family for all the support and help they gave me during the long process of completing this effort. I would like to thank my father for teaching me the value of an education, and that I could do anything I set my mind to. His perseverance has taught me never to give up. To my mother who also was a strong advocate of education and learning, thank you. To my in-laws, who have been sources of courage and understanding, always lending a loving thought and cheering me on along the way. To my nieces who provided me with wonderful hours of their inspirationally created music with Karmina.

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I love you always and forever.

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CHAPTER 1: INTRODUCTION

Most companies depend on electronic mail to function, yet communication is often considered ineffective in many organizations (Axley, 1996; Chidambaram, 1996; Handy, 1995; Rheingold, 1993; Syer & Connolly, 1996). With more people working in physically displaced virtual settings (Attaran & Attaran, 2003; Cascio, 2000; Handy, 1995; Huang, 2002), there is less opportunity for the nonverbal and paraverbal cues expressed through body language, dress, and demeanor that help promote clear understanding (Huang, 2002; Mann, Varey, & Button, 2000). Clarifying communication dynamics, specifically the role of human, present-moment awareness through the communicative process, may be valuable for leaders and workgroups who do not have the ability to communicate in both face-to-face and computer-mediated modalities. Interestingly, awareness training, a form of mind and body conditioning technique, has been found to raise awareness levels among members of workgroups (Atherton, 2002). These findings may well serve corporate teams throughout organizational settings of all types, especially in light of Haney's (1986) evidence showing that misunderstandings in communication may cause organizations great expense. "Top executives estimate that miscommunication costs their organizations from 25 to 40% of budget annually, as it affects customer confidence, grievances, absenteeism, turnover, strikes, production retardation, and the like" (as cited in Axley, 1996, p. 17).

Despite these organizational costs, another argument for clarifying communication dynamics and improving organizational communication is that leadership effectiveness is linked to communication style and efficiency (Bass, 1990; Wilhelm, 1996). More organizations are using virtual, physically separated teams (Attaran &

Attaran, 2003; Kayworth & Leidner, 2002), and studies (Hightower & Sayeed, 1995, 1996) show that these types of teams do not communicate as effectively using computer-mediated communication as they do face-to-face (McGrath & Hollingshead, 1994; Warkentin, Sayeed, & Hightower, 1997). This shift in communication dynamics, (i.e., the loss of face-to-face contact in virtual environments) is certainly problematic as Hall (2004) notes: “Most senior executives cite communication as the most compelling issue they face in running their organizations. For all of the advances in technology and business speak of ‘being connected’ or ‘knowledge transfer’ or ‘integrated teaming,’ the business world is seem[i]ngly overrun with breakdowns in communication” (p. 41). According to Nicolazzo and Nickson (2001), the Firestone tire recall fiasco cost Bridgestone 80% of their profits for that year due to communication breakdowns in upper management. This has an even greater affect in the medical industry where peoples’ lives are at stake and where over 44,000 patient deaths each year are attributed to communication breakdowns (Abudato, 2004).

An increase in self- and group-awareness may be a way to aide in the differences of understanding between computer-mediated communication and face-to-face communication. Awareness, as presented here, is defined as the “underlying psychodynamic factors which motivate action” (Reber, 1985, p. 77). Awareness affords the ability to examine situations from a more integrated and holistic viewpoint (Spears, 2002), a dynamic typically reflected throughout the martial arts, and, in the context of this study, in the Japanese martial art of Aikido. As an art form, Aikido focuses on unifying the mind and body (Heckler, 1985; O’Neil, 1997; Stevens, 2001), and also is considered a theory and practice that develops group- and self-awareness. Furthermore,

Aikido theory posits a holistic worldview that teaches a person how to integrate his or her mind and body leading to more harmonious interactions with people (Stevens, 2001).

Problem Statement

Due to the increased use of computer-mediated communication among virtual teams, where nonverbal and paraverbal cues are not available, unconscious assumptions typically become the basis for understanding (Berman, 2002; Syer & Connolly, 1996). Readers are required to replace the void of perception with their own interpretations because they cannot see the person's physical expressions that contribute to the meaning of the message. Unconscious assumptions are suppositions humans make about situations, other people and themselves which in turn, may dictate how they behave, verbalize thoughts, and perceive others (Berman, 2002). In terms of virtual communication dynamics, unconscious assumptions, by definition, may lead to duplication of work, loss of productivity, and potential conflict in organizations using mainly electronic means of communication between and among team members (Axley, 1986; Warkentin et al., 1997). Haney (1986) showed that misunderstandings in communication have caused organizations great expense, as much as 25 to 40% of the annual budget in some organizations is spent on misunderstandings in communication (Axley, 1996). Conflict alone can take up to 20% of a manager's time (Meyer, 2004). The specific problem addressed by this study is that if an employee does not understand a computer-mediated message, then he or she may act on false information caused by inaccurate assumptions based on past experience (Axley, 1986; Berman, 2002). Since organizations are overwhelmed with miscommunication issues; leaders, employees, and

organizations suffer due to the wasted time and money needed to eliminate the problems caused by these inaccurate assumptions (Hall, 2004).

A quantitative analysis measuring changes in virtual communication effectiveness as an outcome of awareness training, specifically its role as an alternate for paraverbal cues, was performed to determine if awareness training helps reduce miscommunication and its negative outcomes in the online environment. The measurable effect of Aikido self-awareness training on self-reported measures of communication effectiveness among regional virtual workgroups employed by a nationwide sales and services company in the United States was the focus of this study.

Background

Interaction among virtual team members requires clear and succinct communication to support a collaborative work group environment (Attaran & Attaran, 2003). One of the challenges that virtual teams face is the lack of *paracommunication cues* (Mann et al., 2000; Robb, 2002; Sarbrough-Thompson & Feldman, 1998), facial expressions and nonverbal cues provided through body language. These cues are unavailable in electronic mail except with the use of “emoticons,” which are described as a group of keyboard characters such as :o) or ☺. These characters can only provide minimal expressions, and they do not supply the immediate feedback paracommunication cues give when communicating face-to-face (Huang, 2002; Mann et al., 2000). Emoticons are mostly used in non work-related electronic mail or in chat mail. They are not typically used in regular, work related communication (Mann, 1999; Warkentin et al., 1997). Computer-mediated communication does not afford the opportunity to effectively express sarcasm, sympathy, or other emotions the person may be communicating through

bodily expressions, but withholding in his or her writing. The person may choose not to use emoticons because of unfamiliarity with the communicator, or because of the subject matter of the electronic mail message.

Walther and Burgoon (1992) proposed that virtual teams may eventually learn to communicate as effectively as face-to-face teams if they are allowed to develop intragroup relationships. This process will take longer for virtual teams than face-to-face teams because casual conversations are the basis for developing these relational ties (Chidambaram, 1996). According to research by Zack (1993), groups establish frames of reference through unintended casual conversations that occur in face-to-face communications that helps build trust within groups (Chidambaram, 1996; Kraut, Fish, Root, & Chalfonte, 1993; Sarbrough-Thompson & Feldman, 1998). A study by Sarbrough-Thompson and Feldman (1998) revealed that when study participants began using more electronic mail in their organization, there was a decrease in the overall organizational communication attributed to a lack of greetings being exchanged. As a result, the conclusion was that face-to-face communication should be used in addition to computer-mediated communication to compensate for any misinterpretations or loss of meaning that occurs (Chidambaram, 1996; Sarbrough-Thompson & Feldman, 1998). The problem of effectiveness remains for teams who work remotely at client sites, as they lack the opportunity for face-to-face communication on a regular basis. One solution to this problem of needing casual conversation among teams, may be for people to use chat rooms or Internet Relay Chat (IRC) which may act as a medium for casual conversation (Sarbrough-Thompson & Feldman, 1998). Internet Relay Chat is the most recent form of

online chat (Goldsborough, 2001). These electronic encounters may help compensate for intended meaning often lost in electronic mails.

Communication Process

People interpret current experiences according to what has happened to them in the past, consequently the past can influence current behavior (Duncan, 2003; Syer & Connolly, 1996; Winograd & Flores, 1987). This is considered a *preunderstanding* of what is being said, and “everything we say is said against the background of that experience and tradition, and makes sense only with respect to it” (Winograd & Flores, 1987, p. 74). These experiences may also influence how team members relate to each other (Syer & Connolly, 1996). Being aware of the sender and receiver, and understanding their field of influence, will provide the knowledge needed to express or interpret the message more effectively. According to Charles Redding (1972), it is a common misconception that the *sender* of a message is the one responsible for creating meaning, when actually it is the duty of the *receiver* or *perceiver* to draw meaning from the message. Knowing this makes a difference in how people communicate, since the sender of a message can never be certain how the receiver will interpret the meaning of the message (Axley, 1996). Both sender and receiver need to understand their role in the communication process and how they can promote the understanding of the message being communicated. Meaning cannot be *transferred* from one person to another, despite the conviction of many people that they understand exactly what is being said. If meaning could be transferred from one individual to another then there would not be any misunderstandings (Axley, 1986). According to research (Hall, (2004), it is almost impossible for employees to gain an understanding from a single communiqué. This

reflects the need for increased awareness to better understand communication in organizations.

Being aware involves understanding how someone may react to a message, and how he or she may be affected by the wording of the message. People react differently to circumstances depending on their cultural background, traditions, and customs (Arai, Wanca-Thibault, & Shockley-Zalabak, 2001; Berger, 1998; Maturana & Varela, 1998; Robb, 2002; Winograd & Flores, 1987). What may be an acceptable way of expressing oneself in one culture may be inappropriate behavior in another. Research has shown that some cultures do not communicate as openly about problems as other cultures (Berger, 1998; Robb, 2002; Schein, 1997). So, an increase in awareness of the culture and the communication limits of the organization may aid in framing a message more fitting for an online environment. Becoming more aware of the views of other people and how they might react to information they receive, based on their assumptions, may improve one's ability to communicate more effectively (Berman, 2002; Bohm, 2000; Rosenberg, 2003; Syer & Connolly, 1996).

In addition, a person's attitude towards computer-mediated communication may be negative, and, as several researches (Kiesler, Siegel, & McGuire, 1987; McQuillen, 2003; Sproull & Kiesler, 1986) have testified, computer-mediated communication may become *dehumanizing* when communicators do not consider the emotions of the receiver. This oversight may produce depersonalized messages that provoke stronger reactions from the receiver (Mann et al., 2000). According to Morgan (personal communication, June 22, 2003) people who are able to adjust their communication style to others will be more successful at communicating effectively. The way in which a person adapts his or

her communication style to the communication environment is what determines how effective is his or her communication (Morgan, 2005). As Cascio (2000) stated, “new business realities, coupled with demands by workers for more flexibility and empowerment, suggest that virtual workplaces are here to stay” (p. 89). This would present the need to examine the effectiveness of communication in virtual teams since virtual teams have not been highly studied (Potter, Cooke, & Balthazard, 2000).

Awareness through Aikido

Aikido is an alternative learning method based on tacit learning, and it may increase the mental and physical awareness needed to understand the reactions of a receiver. These methods may increase a person’s capacity to interpret messages due to an increase in awareness. To gain tacit knowledge, a person must experience something by direct experience, not by reading instructions or a book. “Tacit knowledge is personal, context-specific, and therefore hard to formalize and communicate” (Nonaka & Takeuchi, 1995, p. 59). In Western cultures, the more familiar form of knowledge is explicit and more cognitive in nature because it is usually communicated with words and data. According to Nonaka and Takeuchi (1995), “the most powerful learning comes from bodily experience” (p. 239). Using implicit learning methods to increase interpersonal communication awareness may help to depersonalize messages by providing the person with a better understanding of how someone may interpret his or her message.

Aikido is a noncompetitive defensive martial art used to blend with an attacker’s energy bringing them to nonviolence. Blending energy serves the purpose of redirecting negative energy into positive or neutral energy. It is also a way of learning mind and

body awareness, Aikido is a way “to view the world holistically, how to integrate body and spirit, and how to interact with other human beings in a harmonious way” (Stevens, 2001, p. 7). Aikido comes from combining three terms, *Ai* referring to harmony; *ki*, that “refers to the subtle energy that propels the universe, the vitality that pervades creation and holds things together” (Ueshiba, 1992, p. 10); and *do*, that refers to the way or the path (Heery, 2003; O'Neil, 1997).

As Crum (1987) stated, “the desire to dance with energy creates more awareness and connectedness in every situation” (p. 155). As a philosophy, Aikido can be used as a framework, and, consequently as a training tool to help people learn how to change ingrained views they have from past experiences. The advantage of using physical techniques is that they are a way to gain implicit knowledge of self-awareness through mind and body learning (Nonaka & Takeuchi, 1995). As such, Aikido may help reveal how a person reacts defensively instead of being open to other people’s views. This awareness is useful in many different environments requiring mental or physical attentiveness.

Several organizations, such as Aiki Works, Inc. (Crum, 2003) and Aiki Extensions (“Aiki extensions”, 2004), work with Aikido *off the mat*, that is, outside the Aikido training hall or *dojo*. These groups teach different applied aspects of Aikido philosophy, such as its use in conflict resolution (“Aiki extensions”, 2004; Crum, 1987, 1997, 2003; Parry, 1997), developing marketing strategies (Cotter & Henley, 1997), reducing violence in schools, psychotherapy, law enforcement training (“Aiki extensions”, 2004), and solving problems in business leadership and everyday life (O'Neil, 1997). Several authors (Crum, 1987, 1997; Dobson & Miller, 1993; Dreher,

2000; Flower, 1997, 1998; Heckler, 1985; Leonard, 1974, 1991; Millman, 2000; O'Neil, 1997; Preston, 1999; Westbrook & Ratti, 1970; Wrobel, 2001) have written about the relationship and correlations that exist between Aikido, leadership, communication, and awareness. Some have posited that leaders need to learn self-awareness to react quickly to problems and initiate change. In addition, awareness is considered one of the ten characteristics of Servant Leadership (Burkhardt & Spears, 2002; Spears, 2002), and according to Spears, “self-awareness strengthens the servant-leader” (p. 6). It helps the leader sense when he or she needs to change the way he or she is doing something (Bennis, 2002; Levick, 1996).

Communication and Conflict

Communication is a challenge for leaders, and as described by Phillip Moffitt (as cited in O'Neil, 1997), a black belt Aikidoist, “you must always blend with your opponent, first absorbing the attack energy and then blending with it, thus moving together. A failure to communicate at a visceral level is a very serious matter” (p. 162). This metaphorical comparison represents, on a physical level, the type of exchange in communication that takes place during discussions that involve conflict. That is, when the person sending a message cannot influence the receiver to move with him or her, then the other person’s viewpoint is often misunderstood. Since each person perceives the issue only from his or her own frame of reference.

Conversely, one of the Aikido exercises used in this study is called *centering* which increases awareness. This exercise is effective in metaphorically demonstrating the confluence of effective communication because, as Crum (1987) stated, it has a “positive effect not so much on physical weight as on your *relationship* to the world around you

and consequently on how others relate to you” (p. 60). Aikido may be used as a training tool because it is a way of dealing with conflict, physical or mental. It thereby becomes a medium “for increased awareness of ourselves and our connections to one another” (Parry, 1997, p. 23). In fact, meta-analyses performed by Burke and Day (1986) showed that self-awareness training rated highest in its influence on subjective learning scores (Bass, 1990). The focus of this study was to analyze self-perceived influences of Aikido/ self-awareness training on self-reported measures of communication styles and strengths of dominance, extroversion, patience, and conformity (Morgan, 2003) in a business setting.

Purpose

The purpose of this quantitative inferential study using a statistical *t* test was to measure self-perceived changes in interpersonal communication style and strengths as outcomes of awareness training through the art of Aikido, and how this training may or may not influence computer-mediated communication styles among regional virtual workgroups in a sales and services company in the United States. The specific areas of communication measured in this study were the communication style and strengths of dominance, extroversion, patience, and conformity contained in the Forté® Communication Style Survey® (Morgan, 2005).

A sample from regional virtual workgroups of leaders and consulting teams from a nationwide sales and services company in the United States were the participants of this study. They communicate by electronic mail and are representative of the increasing use of virtual teams in organizations. For purposes of this study, the communication style

strengths of dominance, extroversion, patience, and conformity (Morgan, 2005) were the dependent variables; the Aikido self-awareness training was the independent variable.

The following additional intervening variables are discussed in chapter three. First, there existed the possibility of experimental group participants discussing experiences from the intervention with control group participants. Second, there may have been experimental group participants that had already experienced Aikido causing more favorable data results. Lastly, the population was only representative of virtual teams.

Significance of the Study

There are insufficient studies on the effects of awareness of self and others on computer-mediated communication. This study will help practitioners evaluate Aikido as an alternative training tool for use in helping to develop greater communication effectiveness through increased awareness in teams, who communicate in an online environment and who lack the ability to supplement their electronic mail with face-to-face contact (Barnes, 2001; Chidambaram, 1996; Mann et al., 2000; Romm & Pliskin, 1999). According to Axley (1996), organizations will need to become *communication-intensive*, which he defined as an organization in which the management understands the importance of communication, and how to use it profitably. Leaders need to have an understanding of communication systems and processes to increase the effectiveness of such systems. Chester Barnard (1938) stated, “The first function of the executive is to establish and maintain a system of communication” (as cited in Robertson, 2003, p. 4). This statement characterizes the importance of communication in organizations today and in the practice of effective leadership.

As more employees work from home or telecommute from remote locations, leaders may want to consider the implications of managing in the virtual environment as a serious challenge to their leadership ability. Team leaders, as stated by Syer & Conolly (1996) “are probably not aware that each member responds differently to their every action and they will know next to nothing about how their members relate to each other” (p. 85). This study may become significant in its potential for providing insight to leaders and for improving the effectiveness of communication among virtual team members through increased awareness, thereby helping them to also adapt their communication styles more effectively in the work environment.

As cited in Bass (1990), the interactions of a group’s members may determine leadership, instead of it arising from the personality of a single person.

Stodgill and Shartle (1955) proposed that leadership needs to be studied in terms of the status, interactions, perceptions, and behavior of individuals in relation to other members of an organized group. Leadership should be regarded as a relationship between persons, rather than as a characteristic of an isolated individual. (p. 40)

Accordingly, effective communication patterns are one of the salient determinants of leadership success within groups and organizations (Bass, 1990). While computer-mediated communication is the primary medium for developing relationships between members of a group in the virtual organization, with changes in technology, it is increasingly becoming a more popular means of communication in general (Cascio, 2000; Douglas & McGarty, 2001).

Nature of the Study

A quasi-experimental research technique was used to examine a sample from a population of consultants who are subject-matter experts in their field and who perform leadership roles, on project teams working in virtual workgroups, for a sales and services company in the United States. The data was analyzed using a *t* test (Conover, 1980; Matheson, Bruce, & Beauchamp, 1978; Pedhazur, 1982; Senter, 1969), and the method used measured frequency changes in the dependent variables of the communication strengths of dominance, extroversion, conformity, and patience and their relationship to the independent variable of awareness training. The focus of the study was to examine how awareness training might help reduce miscommunication and misunderstandings, and their negative outcomes in the online environment. The data collection method consisted of a before-after design, with a *pretest-posttest* (Bickman & Rog, 1998) survey administered to both a control group and an experimental group using The Forté[®] Communication Style Survey[©] (Morgan, 2005).

The experimental group received an intervention, after the pretest surveys, in the form of a workshop with six exercises based on Aikido techniques and philosophy, in addition to a verbal explanation of their relationship to daily communication. The control group completed the pretest-posttest surveys in a similar time frame as the experimental group, without any intervention. A period of about 40 days transpired between the pretest and posttest surveys, during which time the intervention took place.

Hypotheses/Research Questions

The focus of the study was to measure changes in the communication strengths of dominance, extroversion, patience, and conformity as outcomes of awareness training.

How this training might mitigate miscommunication among individuals who interact by computer-mediated communication may be inferred from data examination. The role of awareness was closely studied as a possible alternate for paraverbal and paracommunication cues not evident in computer-mediated communication (Mann et al., 2000; Robb, 2002). The following research question created a basis for this study: Using a statistical *t* test, to what degree does Aikido self-awareness training influence, positively or negatively, the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams?

The research question provided a basis for the following null and alternative hypothesis developed for this study:

- H₀1: Using a *t* test, Aikido self-awareness training does not influence, positively or negatively, the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams.
- H₁: Using a *t* test, Aikido self-awareness training does influence, positively or negatively, the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams.

Theoretical Frameworks

The primary theoretical frameworks used for this study involved the interaction of Aikido philosophy and practice with several theories. Human Communication Theory (Dance, 1967; Korzybski, 1994; Kovacic, 1997), including General Semantics, Neurolinguistic programming, and conflict communication, whereby some authors have included Aikido as a method for dealing with communication conflict (Crum, 1987; Dobson & Miller, 1993; O'Neil, 1997; Parry, 1997; Rosenberg, 2003; Wrobel, 2001).

Leadership Theory, specifically Servant-Leadership was studied, because it uses awareness as one of its key traits. Another one is the theory of emotional intelligence and how it affects leadership qualities (Bennis, 2002; Braye, 2002; Burkhardt & Spears, 2002; Goleman, 1995; Russell, 2002; Spears, 2002).

Communication Theory

With the increasing use of computer-mediated communication as a medium for communicating in virtual organizations, it is reasonable to assume that miscommunication issues in electronic mail are an important factor in organizational effectiveness (Anonymous, 1997; Levick, 1996). According to Morgan (2004), the communication strengths of dominance, extroversion, patience, and conformity reveal how a person interacts with others, as well as how he or she processes information and is self-motivated. These strengths apply to various mediums of interpersonal communication, including face-to-face and computer-mediated communication, since they represent the way people interact and relate to each other.

The communication strengths of dominance, extroversion, patience, and conformity listed in The Forté® Communication Style Survey® matched to the following categories: (a) control, represented graphically as controlling to cooperative; (b) people, represented graphically as outgoing to reserved; (c) pace, represented graphically as paced to urgent; and (d) systems, represented graphically as systematic to independent (Morgan, 2004)

Awareness is considered the basis for the linguistic theory of General Semantics (Hayakawa, 1954; Korzybski, 1994) as well as an important part of neurolinguistic

programming (Knight, 2002) or NLP. These theories explore the affect of language on behavior and visa versa.

Leadership Theories

Greenleaf (Spears & Lawrence, 2002) considered self-awareness one of the ten traits of servant-leadership and he understood the importance of awareness and the need to understand complete systems, not just pieces of leadership as unrelated parts of the whole process (Beazley & Beggs, 2002; Bennis, 2002; Braye, 2002; Spears, 2002; Spears & Lawrence, 2002). Servant-leadership is considered as having concepts similar to systems thinking, transformational leadership, and stewardship (Beazley & Beggs, 2002). De Pree (1995) considers leadership similar to jazz in the way it “combines the unpredictability of the future with the gifts of individuals” (p. 454). He also stresses the importance of servant hood as described by Greenleaf (De Pree, 1995) in the effort to create faithful managers and leaders. Greenleaf is only one of several authors who considers self-awareness a core competency or important aspect of successful leadership ("Get happy, carefully", 2001, "Ccl overview", 2004; Book, 2004; Bunker, Kram, & Ting, 2002; Fenwick, 2002; George, 2004; Goleman, 1998; HBR, 2001; Latour & Hosmer, 2002; Takeuchi, 2004; Yung, 2004).

Transformational leadership (Avolio, 1999; Bass, 1985), which is based more on motivation and inspiration, requires a transformation in the followers by raising their awareness to the importance of the organization and not just of themselves. These leaders accomplish this because they are trusted and admired for their qualities and because they encourage creativity and risk taking (Whittington, 2004).

Awareness refers to the insight that servant-leaders have that enables them to evaluate the ethical dimensions of a situation from an integrated, holistic, and

value-based position. The principle-centered (Covey, 1990) awareness allows servant-leaders to operate from an inner serenity that does not require reliance on positional authority to influence others (Whittington, 2004).

Aikido Self-Awareness

“Fully accepting awareness as a chosen characteristic of organizational life means coming face-to-face with uncertainty and ambiguity” (Burkhardt & Spears, 2002, p. 235). Aikido can help individuals deal with uncertainty and ambiguity through learning how to become more aware of different ways to deal with conflict (Crum, 1987; Dobson & Miller, 1993; O'Neil, 1997). Crum (1987) defined conflict as “an *interference pattern of energies*. When two energies of different intensities and directions come together, there is increased pressure. It is our response to this pressure of conflict that holds the trump card, dictating whether this stress is harmful or useful” (p. 194). Similarly, Stevens (2001) explained one of the Aikido techniques, *ushiro-waza*, as “dealing with the unknown” or in daily life as, “expecting the unexpected” (p. 21). Aikido training helps a person learn how to deal with unexpected circumstances by helping people become aware of their ingrained patterns of behavior (Crum, 1987).

Syer and O'Connolly (1996) explained how martial arts help teach awareness when they stated, “Keeping a functional paranoia without ‘closing one’s heart’ is an art form taught by several martial arts. The creativity inherent in healthy competition arises from an intense awareness and appreciation of differences” (Syer & Connolly, 1996, p. 90). This statement is reflective of the philosophy of Aikido, founded by Morihei Ueshiba, who defined it as the “Way of Harmony” (Stevens, 2001, p. 7).

This study explored the self-perceived effects of awareness on communication. Tacit knowledge and how it can be used to learn mind and body techniques (Durrance, 1998; Marwick, 2001; Nonaka & Takeuchi, 1995) including Aikido theory and practice

(Crum, 1997; Heery, 2003; Saotome, 1993; Stevens, 2001; Westbrook & Ratti, 1970) explored in this study in contrast to explicit learning methods which are based on more instructional means. The differences in these two methods of learning were examined, while the intervention in this study was based on the tacit learning method of Aikido.

Definitions

The following definitions provide clarification of the terms and topics discussed in this study.

Aikido: An Eastern philosophy model of group and self-awareness with emphasis on the following areas for the purpose of this study: (a) centering – dealing with conflict; (b) Shiho – universality, awareness of all angles; (c) Irimi – entering and blending, going to the source of conflict; (d) Kaiten – opening and turning, open to possibility, open-minded; (e) Muteiko – nonresistance, nonassertion; and (f) Kokyu – breath power and good timing (Stevens, 1984, 1995, 2001).

Alternative training methods: Six exercises based on Aikido principles of mind and body tacit learning that were used as the intervention given to the experimental group in a workshop setting.

Computer-mediated communication: Asynchronous electronic mail (e-mail) communication and synchronous chat mail or Internet Relay Chat (IRC) communication, including “text, audio, and video exchanges that people can control using computers” (Haythornthwaite, Wellman, & Garton, 1998, p. 200).

Conformist: A “systematic person, [who] depending upon environment and experience, will be careful, accurate, precise, thorough, skillful, dependable, meticulous, conservative, prudent, anxiety-prone, worrisome, sensitive to criticism, and a

perfectionist. Liking details and systems, this person prefers to work systematically, wants outcomes to be ‘right,’ and wants to be fair” (Morgan, 2004).

Dominant: A “controlling person [who] is results-oriented and primarily concerned with getting things done. Dominant people are hard-driving, to the point, and dislike indecisiveness. They appear outwardly secure, and are innovative, venturesome, ingenious, big-picture oriented, and sometimes abrasive. They are trouble-shooters, decisive and risk-takers” (Morgan, 2004).

Experimental design: “tests cause-and-effect relationships in which the researcher randomly assigns participants to groups. The researcher manipulates one or more independent variables and determines whether these manipulations cause an outcome” (McMillan & Schumacker, 1989, as cited in Cresswell, 1994, p. 117).

Extrovert: An “outgoing person [who] is people-oriented. Extroverts are friendly, pleasant, persuasive/emphatic, enthusiastic, talkative, stimulating, motivating, and optimistic. They are good mixers and good coordinators. The Extrovert likes to be with and influence people. They are verbal” (Morgan, 2004).

Impatient: An “urgent person [who] is action-oriented and does not tolerate delays for extended periods of time. This person often has to do things twice for lack of adequate planning. Impatient people have a strong sense of urgency both for themselves and for those around them. It is important for these individuals to keep busy and have others respond quickly to them. They learn quickly and prefer variety as opposed to a single area of concentration. Their sense of urgency often drives them to seek out new, exciting situations which offer them a change of pace” (Morgan, 2004).

Introvert: “Reserved people [who] are selective in whom they place their trust; they take great care in protecting their private life and prefer not to speak without weighing the potential consequences. They are creative and have an individualistic side that can manifest itself in a vivid imagination and the ability to think things through to a conclusion. They tend to be contemplative, enjoy quiet, and do not need others around for self-fulfilling activities” (Morgan, 2004).

Metamessages: The nonverbal component of a message that can include or add additional meaning to the message being sent through body language or paralanguage that can contradict the message being verbally expressed (Knight, 2002).

Non-conformist: An “independent person [who] is characterized by a generalist orientation to life. This person often shows a rather independent attitude, with a tendency to avoid detail work. These individuals usually are uninhibited, candid, and relate well to activities that take them out of ordinary or prescribed situations. These individuals want freedom and minimal controls, both in work and personal relationships. They can be resistant to controls and will tend to rationalize” (Morgan, 2004).

Non-dominant: A “cooperative person [who] is characterized by a non-threatening way of working with others. This person is not forcefully demanding. A Non-Dominant person will seldom impose upon others, is mild-mannered, composed, and often modest. They prefer direction” (Morgan, 2004).

Paraverbal and paracommunication cues: Nonverbal communication cues present during a face-to-face conversation between two people. These include dress, demeanor, facial expressions, tone and pitch of voice, inflections, body language, and gestures not

available in computer-mediated communication environments (Kayworth & Leidner, 2002; Koh, 2002; Levick, 1996; Mann et al., 2000; McQuillen, 2003).

Patient: A “paced individual [who] is relaxed, easygoing, steady, amiable, warm, dependent, sincere, likable, and a good listener. The paced person likes peace and harmony, likes to be cooperative, likes to save time, and likes time to adjust to changes” (Morgan, 2004).

Self-Awareness: Knowledge of how a person communicates, or is perceived to communicate, that will enable them to adapt their communication style to people with whom they interact.

Survey design: “provides a quantitative or numeric description of some fraction of the population—the sample—through the data collection process of asking questions of people” (Fowler, 1888, as cited in Cresswell, 1994, p. 117). The findings may be generalized to the greater population based on the results obtained.

Work group: The people that work and interact together within a company. The lifetime of the workgroup may encompass many projects, but the duration of the interaction is open-ended (Arrow, McGrath, & Berdahl, 2000).

Assumptions

Several assumptions existed in this study. They were that: (a) The Forté[®] Communication Style Survey[©] was an appropriate tool for measuring changes in communication effectiveness; (b) extraneous variables outside the scope of the study did not significantly influence survey results; (c) test participants would not enroll in a martial arts class during the data collection period of the study; (d) the survey respondents did not intentionally distort their answers; and (e) a one-time intervention

workshop on Aikido awareness training may not have changed behavior, but in order to influence a change in behavior, a change in attitude toward communication increased the chance that the behavior also changed (Ajzen & Fishbein, 2000; Fishbein & Ajzen, 1975; McCormack Brown, 1999). According to Ajzen and Fishbein (2000) a change in behavior is strongly affected by a change in attitude.

Scope, Limitations, and Delimitations

The scope of this study was limited to the identified variables of Aikido self-awareness training and its affect on interpersonal communication in an online environment. For purposes of this study, test participants were limited to consultants working full-time in various regions around the United States for a single nationwide software company. This group was selected due to the nature of the communication that takes place between the workgroups. The use of electronic mail and chat mail as the main form of communication within the workgroup formed the requirement for selection. Those selected included individuals who work on multiple teams on client engagements at client sites. Any measured changes in interpersonal communication were supposed to be related solely to online communication within the workgroups and were not to include client or personal communications outside the company.

The experimental and control groups contained approximately 30 people each. There were a total of 60 people who volunteered to participate in the study. From that group, 30 randomly selected participants formed the experimental group while the remaining 30 made up the control group. However, the response rate of participants presented an added limitation. The experimental group received the Aikido self-awareness training as intervention, along with The Forté® Communication Style Survey®

as the pretest and posttest survey, while the control group only completed The Forté[®] Communication Style Survey[®] for the pretest and posttest portion of the study. The script that was followed during the intervention can be found in Appendix K. Both groups completed the posttest survey roughly 30 - 40 days after they completed the pretest survey. The Forté[®] Communication Style Survey[®] was accessed online by means of a website, and the participants were reminded to take the survey by electronic mail. The intervention/workshop took place outside the company's facilities in a hotel conference room.

Summary

Virtual organizations suffer from an overabundance of electronic mails that hinder communication effectiveness. Ineffective computer-mediated communication may hamper performance due to the lack of the physical cues face-to-face communication provides. The changes in communication effectiveness were summarized as an outcome of awareness training through the art of Aikido and this offered insights regarding the possible influence on a person's computer-mediated communication through electronic mail and chat mail. The interpersonal communication style and strengths measured in this study are dominance, extroversion, patience, and conformity (Morgan, 2004) while the survey used measured these changes, in a pretest-posttest design using an experimental quantitative method. The intervention workshop provided mind and body training to improve group- and self-awareness, based on Aikido theory and practice techniques. Chapter 2 presents an examination of the related literature that supports the current findings and historical viewpoints on the topics of computer-mediated communication, self-awareness, communication theory, and Aikido.

CHAPTER 2: LITERATURE REVIEW

The purpose of this was to measure self-perceived changes in interpersonal communication style and strengths as outcomes of awareness training through the art of Aikido, and how this training may or may not influence computer-mediated communication styles among regional virtual workgroups in a sales and services company in the United States. The specific areas of communication measured in this study are the interpersonal communication style and strengths of dominance, extroversion, patience, and conformity contained in The Forte[®] Communication Style Survey[®] (Morgan, 2005). This chapter includes the title searches used for gathering articles, journals, and research documents from EBSCOhost, ProQuest[®], and Info Trac OneFile[®]. The historical overview contained within the field of literature is also detailed. The current research related to this study will be presented, with concluding comments and a summary of the chapter.

Title Searches, Articles, Research Documents, Journals

The information about communication, online communication, electronic mail messaging, leadership, awareness, Aikido, and other areas explored in this study were gathered from various sources including research studies contained in dissertations, books relating to the various areas of study, peer reviewed journals, newspaper and magazine articles, and various websites. Appendix A covers, in detail, the title searches performed for this study to reveal the depth of research performed.

Historical Overview

The literature relating to the independent and dependent variables of this study can be classified under the following general areas: communication, leadership, self-

awareness, and Aikido. Communication is explained in this chapter as including communication theory and General Semantics. Leadership and specifically Servant-Leadership is explained with aspects of Emotional Intelligence. Self-awareness is explained as being evident in both physical as well as psychological aspects of a person and how they relate to both communication and leadership. Aikido is explained as a practical medium to administer awareness training through a tacit learning approach. For purposes of this study, the communication style strengths of dominance, extroversion, patience, and conformity (Morgan, 2004) were the dependent variables; the Aikido self-awareness training was the independent variable.

Communication

The word *communication* has been problematic in literature because it is an ambiguous term, Lee Thayer (1967) defined the term as an “exclusive reference to the operation of converting raw *sensory data* into *information* for eventual use in determining covert or overt ‘behavior’” (p. 71). However, Graham and McKenna (2000) noted the literature shows organizational communication as being influenced by changes in management theory, and as thus, it is not well-defined. When referring to communication as a concept, a specific explanation must be given as to what type of communication is being referred to because of the broad scope of the term if it is not explained in detail (Thayer, 1967). That is, as suggested by Thayer, part of the problem exists because of what he called the “communication \leftrightarrow organization interface” (Thayer, 1967, p. 83), in which it is difficult to define what is meant by *communication* in organizations, what is meant by *organization* itself, and how communication brings about organization (Taylor, 1999). During the late 1960s, when Thayer (1967) wrote his essay titled *Communication*

and Organization Theory, communication problems in organizations was a topic found throughout literature. Besides Thayer's own analysis, few empirical studies existed in organizations to discover the cause of such problems.

Another problem to understanding human communication behavior in organizations is that it may be necessary to analyze four separate levels concerning the following areas: physiological, psychological, sociological, and technological (Thayer, 1967). Each area is a separate field of study that has a corresponding level of communication overlapping each other. The overlap of the technological and sociological levels relates to organizational communication, while the overlap of sociological and psychological levels relates to interpersonal communication (Thayer, 1967). Also, the overlap of the psychological and physiological levels relates to intrapersonal communication (Thayer, 1967). The need for such a complex analysis of human communication behavior aggravates problems with understanding and applying effective communication in organizations.

According to research performed by Lengel and Daft (1984), when messages were ambiguous, face-to-face communication was the favored method, whereas written communication was acceptable for messages free of ambiguity (Daft & Lengel, 1986). The measure for the effectiveness of understanding messages is determined by the time it takes to understand the message, also known as the *richness* of the information or communication media. As such, face-to-face communication is considered the "richest medium" (Daft & Lengel, 1986, p. 560) since the listener can decide immediately through body cues, whether their message has been properly understood. Accordingly, Lipnack and Stamps (1997) stated, "based on proximity, people are not likely to

collaborate very often if they are more than 50 feet apart” (as cited in Hunt, 2001, p. 8). This observation supports the need for further research into team effectiveness, especially in an online environment to discover why people will not collaborate if they are not face-to-face.

Studies performed by Downs, Clampitt, and Pfeiffer (1988) suggested a relationship between communication in organizations and job productivity and satisfaction. Methods of communication in bureaucratic organizations followed the vertical communication lines of the hierarchical structure of authority within the organization. Due to technology, communication was usually made through face-to-face encounters or by written memos delivered manually to each individual, typically passed downward in the organization according to the lines of authority and influence (Hatch, 1997). This is not the common means of communication in organizations, since computer-mediated communication has taken the place of the office memo which decreases the amount of face-to-face communication that takes place in organizations.

The process of communication can be broken down into three elements: *originator*, *signal*, and *recipient*, all three of which may be uncontrollable since the originator may give unintentional signals, and the recipient may receive signals they do not wish to know about or they misinterpret (Borden, 1971). Many consider the source of most fears in humans stem from their inability to communicate. This fear can be alleviated through increased awareness, as Borden (1971) stated “if we are aware of what is going on during the communication process, then we will be better able to evaluate the information obtained during this process” (p. 86).

The core concepts of communication are important to this study since they outline the fundamental basis for understanding meaning and interpreting messages even in an online environment. Virtual organizations are increasing the use of this method of communication in their tactical operations.

Leadership And Self-Awareness

According to Hackman and Johnson (1991), leadership can best be understood and defined according to communication, as described in their definition of leadership. “Leadership is human (symbolic) communication which modifies the attitudes and behaviors of others in order to meet group goals and needs” (p. 428). Self-awareness is considered by some as the most important leadership competency and a core skill of successful leadership ("Get happy, carefully", 2001, "Ccl overview", 2004; Book, 2004; Bunker et al., 2002; Fenwick, 2002; George, 2004; Goleman, 1998; Latour & Hosmer, 2002; Spears & Lawrence, 2002; Takeuchi, 2004; Yung, 2004). This study tested the role of awareness, specifically self-awareness gained from Aikido techniques and concepts, as a means for improving communication. The research addressed the implications of the physical as well as the mental aspects of self-awareness.

As stated by Stevens (1988), “Problems arise when our words are used for purposes other than clear communication of awareness” (p. 89). Self-awareness is one of the ten characteristics of Servant Leadership developed by Robert Greenleaf (Bennis, 2002; Braye, 2002; Burkhardt & Spears, 2002; Russell, 2002; Spears, 2002) in his book *The Servant as Leader* (1970) (Spears, 2002). Servant leadership requires self-awareness to help understand the organization and leadership through a holistic perspective by seeing the interconnectedness of each part in the system (Burkhardt & Spears, 2002).

Emotional intelligence or emotional quotient (EQ) is becoming more important as a critical part of successful leadership, moving leaders away from the common idea that a high intelligence quotient (IQ) is the main factor in leadership ability ("Beautiful minds: Think eq not iq", 2004, "Leading by feel", 2004; Book, 2004; Goleman, 1995, 1998). The *soft* skills are considered just as important if not more important than the technical knowledge of leadership positions, with self-awareness being the most important part of emotional intelligence and the first step for leadership success ("Ccl overview", 2004, "Leading by feel", 2004; Bueno & Tubbs, 2004; Fabian, 2004). According to Barton (2004)

There is a trend in management towards a greater emphasis on what were once seen as the soft skills – self awareness, relationship management, communication and social awareness. These are now recognized as part of the skill set required for someone to be an effective business or team leader. (as cited in, "Beautiful minds: Think eq not iq")

Part of a leader's duty is to help employees and teams communicate effectively by lessening the obstacles that stand in the way of interactions (Kouzes & Posner, 1995). To do this, leaders will need to have "Extraordinary levels of perception and insight into the realities of the world and into themselves" (Schein, 1996, p. 67). Such awareness will help leaders of the future handle the complexities of a growing organization. Another leadership competency as described by Leider (1996), is that of self-leadership which constitutes the highest form of self-awareness since the change has to begin with the leader who leads by example and is the first to change.

Self-Awareness, Linguistics, and Perception

Awareness is the basic principle of the linguistic school of thought known as General Semantics, which was founded by Alfred Korzybski (Borden, 1971) in the early

1930s. Korzybski originally wanted to create a “new empirical science of man” (Bois, 1978, p. xxxi), through what he called *Human Engineering*. General Semantics is also defined as “the study of how we perceive, make meaning of, articulate and communicate our experiences” (Lauer, 1996). This process not only involves communication, but also how people derive meaning from what they perceive. Ludwig Wittgenstein (1953), considered the father of the philosophical theory of meaning, represented this process in the following statement “For a large class of cases—though not for all—in which we employ the word ‘meaning’ it can be defined thus: the meaning of a word is its use in the language” (as cited in Searle, 1967, p. 119). This shows the difficulty in understanding meaning due to such vague references as how to gain meaning from language.

The main principle of General Semantics is that humans will use a procedure of abstracting to define an event, shown by Korzybski’s famous Structural Differential diagram (Dawes, 2003; Korzybski, 1994; Sawin, 2003). This model represents the process of *abstracting* (Dawes, 2001) at various levels. Beginning with the event or circumstance, then moving down to the object itself and to the label a person gives the object. Then finally to further labeling or abstracting from the event or situation, creating a chain of abstractions from the original event. The main premise Korzybski stressed in his work was that the label of an event or an object is not the event or object itself; it is an abstraction of it. Human beings are the only life-form that can “abstract from something” (Korzybski, 1994, p. 380). This statement reflects Korzybski’s idea of language as being a map of what exists, but only as a representation, not the *thing* itself:

As words *are not* the objects which they represent, *structure, and structure alone*, becomes the only link which connects our verbal processes with the empirical data. To achieve adjustment and sanity and the conditions which follow from them, we must study structural characteristics of this word *first*, and, then only,

build languages of similar structure, instead of habitually ascribing to the world the primitive structure of our language (Korzybski, 1994, p. 59).

Through the procedure of abstracting, items are left out which represent the event or object, leading to inaccurate representations of the original event or object. As such, each person may abstract in a different and unique way, gaining different knowledge from each event or object. Each person associates this new knowledge with past experiences (Duncan, 2003; Syer & Connolly, 1996), giving them a different view of the new event based on their past knowledge. In terms of this premise, one person may see a dog as representing a loving pet, but for another person the same dog may represent fear or pain because of previous negative experiences with dogs. (Korzybski, 1994).

A proper description of how awareness of differences and the understanding thereof is important is shown by Maturana and Varela (1998) in the following passage:

If we know that our world is necessarily the world we bring forth with others, every time we are in conflict with another human being *with whom we want to remain in coexistence*, we cannot affirm what for us is certain (an absolute truth) because that would negate the other person. If we want to coexist with the other person, we must see that *his certainty—however undesirable it may seem to us—is as legitimate and valid as our own* because, like our own, that certainty expresses his conservation of structural coupling in a domain of existence—however undesirable it may seem to us. Hence, the only possibility for coexistence is to opt for a broader perspective, a domain of existence in which both parties fit in the bringing forth of a common world (Maturana & Varela, 1998, pp. 245-246).

The International Society for General Semantics' website contains an explanation of awareness in the present moment in the passage on "Here and Now Awareness":

A corollary of human capacity for self-reflexiveness is our ability to distinguish between the present, past, and the future. However, much of our processing of events reflects a confusion of the three states. Failure "to contact" is often the result. Reducing some of our sense of isolation from others depends upon our ability to speak to others in the present about the present, to live and communicate in the here and now. Much of our anxiety is the result of reacting to thoughts which pile up from the past or of assuming disasters for the future. Thus, and given communication becomes overloaded with multiple and perhaps irrelevant

messages. Mastering her and now awareness can reduce much aggravation (Lauer, 1996).

The understanding of awareness in General Semantics is grounded in the view that in the process of abstracting from objects or situations, items or characteristics of the original object or situation are left out or are neglected causing inaccurate conclusions and information resulting in errors. Hence, there is the need for understanding an object or situation at a given point in time and not substituting that object or circumstance for any other one at a different point in time. During communication, misunderstandings may be minimized if there is an awareness of the difference between an object and situation, and the abstracted thoughts of it (Korzybski, 1994). Awareness also exists in General Semantics as something necessary during communication for people to be able to discuss and acknowledge the differences that may exist between their assumptions, perceptions and feelings (Roethlisberger, 1952).

Another form of physical awareness is the Awareness Through Movement[®], which was developed by Feldenkrais (1977) as a method for self-improvement. This method “utilizes functionally based variation, innovation and differentiation in sensory motor activity to free us from habitual patterns and allow for new patterns of thinking, moving and feeling to emerge” (Hein, 2003)(*Background information*, 2003). The significance of this method is that it defines “movement as the basis of awareness” (Feldenkrais, 1977, p. 36) and provides a means through which previous patterns can be altered to form new ones through movement.

Self-awareness is a critical part of this study since it is the variable that is being measured through changes in communication. The elements of leadership that require self-awareness are competencies that help a leader to deal with communication and

conflict situations in the workplace. The Feldenkrais method is used by many Aikido practitioners to supplement their training in awareness and to help in their professional application of Aikido concepts.

Aikido Background

Aikido is a Japanese martial art based on an Eastern philosophy of group and self-awareness, positing a holistic worldview teaching a person how to integrate his or her mind and body and learn to interact more harmoniously with people (Stevens, 2001; Tohei, 2001). It contains more philosophy than any other martial art, and the techniques are inseparable from this philosophy. Another familiar term for Aikido is the “Way of Harmony” (Stevens, 2001, p. 7) The founder of Aikido was Morihei Ueshiba, a Japanese farmer who developed his art through what he learned from many martial arts as well as Shinto and Buddhist philosophies. Two of the most influential people in Morihei’s life were Sokaku Takeda, who was a master of Daito Ryu Aikijutsu, and Onisaburo Deguchi, an enigmatic leader of the Omoto-kyo religious movement (Stevens, 1984, 1987, 1997). Morihei studied under Sokaku Takeda to strengthen his martial arts learning, and after he left him, he followed a more philosophical learning path with Onisaburo Deguchi, who is described in the following passage:

Onisaburo was called many things during his eventful career, ranging from ‘Savior of the World’ to ‘The Biggest Charlatan in History.’ A childhood acquaintance once said of Onisaburo, ‘It was impossible to tell if he was an absolute genius or a complete fool,’ and he remained an enigma until the day he died. (Stevens, 1997, p. 36)

The life of Morihei Ueshiba influenced the art of Aikido, as he continuously refined it throughout his life. He encouraged his students to avoid adhering to set forms of the art since he felt it should constantly change in order to be adaptable to different

situations as described in the following explanation: “Our techniques employ four qualities that reflect the nature of our world. Depending on the circumstance, you should be: hard as a diamond, flexible as a willow, smooth-flowing like water, or as empty as space” (Ueshiba, 1993, p. 114).

Main Principles

Philosophically, Aikido embraces four main virtues: courage, wisdom, love, and empathy, helping people to deal with challenges in their lives. Besides the virtues, nine *pillars* support Aikido techniques, some of these are included as exercises in the Aikido self-awareness training found in Appendix K. Included here are only the ones used in the training for this study and they are as follows: (a) *Shiho*, “universality,” (Stevens, 2001, p. 19) is represented by a four-directional cut of the sword, symbolizing the need to see a situation from all aspects and angles by moving to face any direction depending on the unique circumstance; (b) *irimi*, “entering and blending,” (Stevens, 2001, p. 20) means to go to the source of conflict and then blend with it, rendering further aggression impossible; (c) *kaiten*, “opening and turning,” (Stevens, 2001, p. 20) refers to keeping an open mind and being open to possibilities and new ideas and other’s opinions; and (d) *kokyō*, “breath power and good timing,” (Stevens, 2001, p. 21) means being aware of what is going in one’s surroundings and being in tune with one’s environment.

The techniques used in practice embody these principles. Since one of the main ideas of Aikido is to avoid conflict from the start, there are no competitions as there are in other martial arts. The principle of *Muteiko* or “nonresistance” represents this theory of conquering an enemy by not engaging him or her (Stevens, 2001, p. 23). As stated by Susan Stone (1985), however, “In daily life, the attacker can be a physical threat, a verbal

assault, or an emotional crisis” (p. 73). Whatever is assaulting a person can be considered an attack. *Centeredness* is a concept in Aikido that parallels a similar state in sports of being *in the zone*. There is a physical *center* location on a person’s body, which is just below the navel, and it defines a point of balance. In Japanese martial arts, and especially in Aikido, centeredness is imperative for effective execution of techniques (Meyer & Reeder, 2000).

The improved physical/mental health, the deeper understanding and awareness of the problems facing every man, the essential unity and identification of all men, their integration with and necessity to one another, as well as a sense of “belonging” to their times and their world—this is the potential that the theory and practice of the art of aikido can offer all men, wherever they may be. (Westbrook & Ratti, 1970, p. 363)

Budo

Budo is the Japanese term for “martial way” (Sotnak, 2003) and was best described by the late Shirata Sensei (as cited in Stevens, 1984) as the true warrior spirit. The sensei stated, “During the war we were told that *Bushido* means to learn how to die. I learned that is not real *budo*; real *budo* is to learn how to live, how to live together with others in harmony and peace” (as cited in Stevens, 1984, p. 18). Morihei Ueshiba in his search for the meaning of *budo*, realized it was not just a physical quest, but also a spiritual one as is represented by “The Buddhist tradition [which] defines the Warrior as ‘one who has the courage to know oneself’” (as cited in Parry, 1997, p. 6). Hiroshi Ikeda (as cited in Barnet, 2003), 7th Dan black belt and chief instructor at Boulder Aikikai described some aspects of budo in his statement:

Human beings connect to the world through the five senses, through awareness, through intellect and through spiritual powers. These inherent human attributes are at the core of the warrior’s code (*budo*): our self-awareness, our connection to others, our ability to make enlightened choices that lead to favorable outcomes. (p. 73)

The way of the warrior, *bushido* in Japanese, embodies the principle of having a calm mind even during chaos and imminent death. The warrior always needs to be prepared to die and not to fear death. Leaders often learn the martial way of preserving a calm mind during confrontations and conflict (Cleary, 1991; Musashi, 1993). Morihei advanced this idea when he changed the warrior spirit from one of death to one that enforces the principle of learning how to live with people in a harmonious way through Aikido (Stevens, 2001; Ueshiba, 1991). Dobson (1993) stated, “the purpose of conflict is harmony” (p. 169). Shintoism, Buddhism, and Confucianism, adding the spiritual quality of the warrior spirit, influence *Bushido* (Saotome, 1993). The idea Morihei Ueshiba wanted to create was one of a *nonviolent warrior*, a new type of warrior that was “a way out of the dead end of war” (Aubrey, 1985, p. 52).

The history of Aikido is important for understanding the philosophy and how Aikido can be a useful tool for resolving conflict in communication, through understanding other people’s perspectives and viewpoints. Aikido is an example of a tacit learning method for understanding communication concepts and learning self-awareness. This medium uses a mind and body technique that helps a person understand the lessons through movement.

Current Research

Due to increasing advances in technology, communication is changing in organizations; virtual organizations and remote work environments have changed the way people communicate across time zones and cultural boundaries. This allows for quicker responses that may contain fewer cues to what is being communicated, depending on the medium used to transfer the message (Block, 2002). Peters (1997) calls the new era of the

global village the “death of distance” (p. 4), in which each person in an organization can communicate with people far across the globe within an instant. In such an environment, business can be conducted despite time and cultural differences (Guo, 2003; Handy, 1997, 1998; Peters, 1997), hence the rapid increase in using computer-mediated communication as a global communication tool, and the increased interest in this topic for researchers (Douglas & McGarty, 2001). As Gibson and Cohen (2003) mentioned, research shows using the telephone can be useful for virtual teams, and just because the technology exists, does not mean virtual teams will be successful. These authors recommended that teams meet face-to-face to create the initial bond of trust before they work online together (Gibson & Cohen, 2003). Another way for teams to build trust online is for them to share their knowledge and skills among team members, but the way this is done is important since it can help build social capital as well. Trust is essential among virtual team members for the team to be effective (Brannon, 2001; Johnson, Heimann, & O'Neill, 2001; Platt, 1999; van der Smagt, 2000).

An opposing viewpoint comes from Olson and Olson (2000) who believed the book *Death of Distance*, written by Frances Cairncross (1997), is an exaggerated statement about distance and that it will always exist due to differences in locations, culture, language, and time zones. They also discussed the importance of possibly combining asynchronous and synchronous methods of communication together. This idea was examined by Bradner, Kellog, and Erickson (1999) and Churchill and Bly (1999, 1999) for different tools to use in combining the two forms of communication (Olson & Olson, 2000). Some authors (Bauman, 1990; Buber, 1965; Pinchevski, 2003) believed

that by moving away from face-to-face communication, there will be serious implications to human growth (Pinchevski, 2003).

If the future holds true, according to Handy (1998), there will be half as many people collecting twice the money, but they will have to produce three times as much, causing the need for increased communication effectiveness. As Townsend, DeMarie, and Hendrickson (1998) note, successful virtual teams will play an important part for organizations to be profitable. One way to do this is through networking, which is one advantage of computer-mediated communication. With networking, people can communicate simultaneously with multiple groups using mailing lists allowing them the opportunity to send a message to multiple people within an organization at the same time. The advantage is that information spreads quickly this way (Washer, 2002). Many people opt for the speed of technology instead of meeting someone face-to-face (Peters, 1997), hence the lack of paracommunication cues, such as facial expressions and body language, in electronic mail and chat mail that help provide further meaning to a message communicated face-to-face (Mann et al., 2000; Robb, 2002). As research performed by Mehrabian in 1972 showed, a person receiving a message was influenced only 7% by the content or words used in the message. Whereas they were influenced 38% by vocal influences such as tone, pauses, and accent while the remaining 55% of influence was nonverbal, consisting of body language (Knight, 2002). These facts present a challenge for effective electronic mail communication that lacks nonverbal communication aspects.

The following statement proved that an increase in awareness of a message may aid in the understanding and decision making taking place during communication:

“Recent research tells us that only about 30% of the information coming to us at any

moment actually makes it through the medulla to the cerebral cortex, where it only then becomes conscious, available for processing and decision-making” (Parry, 1997, p. 29). As such, it is important to get the audience’s attention early, as doing so increases the chances of them receiving the complete message (Ballaro, 2003). The communication getting through to consciousness is compared with prior information or prior experiences the person had (Korzybski, 1994; Kovacic, 1997; Parry, 1997; Syer & Connolly, 1996). Langer (1989) referred to this as *premature cognitive commitment* in her study, claiming, “The way we first take in information (that is, mindfully or mindlessly) determines how we will use it later” (p. 25). Awareness, and a conscious decision not to follow past patterns when confronted with new information, can alter this dilemma and help a person break unfavorable patterns of behavior that cause them to judge situations or people based on similar experiences in their past (Syer & Connolly, 1996). The importance this has on this study is reflected in the way awareness can be taught to help people avoid relying on their preconceived ideas of how to react in new circumstances. If a person realizes that they usually depend on their experience to decide how they should react in a situation, then they are better prepared to develop new ways of reacting to a similar circumstance instead of following old patterns of behavior.

Communication in Organizations

Organizations of the postmodern era may consist more of a matrix structure allowing communication to flow between levels within the organization, laterally as well as vertically. Sometimes, this communication may even skip levels. Committees, teams, and task forces are formed this way. This makeup combines the benefits of a functional structure as well as a divisional structure in one complete matrix. Due to this

arrangement, communication must flow laterally as well as vertically and across divisions and functions, allowing for more conflicting demands for the individuals involved (Hatch, 1997). Advances in technology have created an environment in which communication spans time zones, cultures, and departments and is less often face-to-face because of the increase in computer-mediated communication as a new medium for global communication (Douglas & McGarty, 2001). Martin Hanaka, COO of Staples, explained the importance of communication to the future, “Effective communication for the future, if it is to be efficient and therefore profitable, will be timely and have an appropriate level of detail” (Hanaka & Hawkins, 1997).

Another definition of effective communication comes from Axley (1996), who believed there are two results that should occur: one being an accurate understanding that takes place during the communication and the other being a relationship that is established which can provide fulfillment personally and professionally (Axley, 1996). Davis (2002) expressed the importance of relationship building for meaningful communication and the importance of nonviolent communication as evidenced by Rosenberg’s (2003) philosophy highlighting an awareness of objective in communication as a “relationship based on honesty and empathy” (p. 81). Leaders need to develop relationships and build trust differently with virtual teams than with collocated teams (Pauleen, 2004).

According to Duarte and Snyder (1999) leaders are an important link in the team, helping with communications, making sure tasks are completed, and promoting the team functions (Pauleen, 2004). Virtual team leaders need to be aware of *contextual nuances*, without the presence of the normal cues that accompany them, among team members

which might include silence, disagreements, or conflicts (Caramton & Orvis, 2001).

Pauleen (2004) posits that virtual team leaders must provide the regular leadership functions of a collocated team, “but must also be able to guide a team of geographically distributed, and often organizationally and culturally different individuals, in creating a common purpose” (p. 229).

One emerging communication theory is conflict communication. This type of communication occurs partly due to miscommunication and misunderstandings by the sender and receiver of messages, causing stress for both individuals since what is happening and what is relayed in writing or verbally are two different things (Cox, 2003). Conflict communication is a newer term relating to several disciplines on the subject of interpersonal communication about how people interact with each other. One aspect of interpersonal conflict relates to a systems-interaction approach based on general systems theory, in which one must observe the whole process of communication; thus the interaction between two or more people, and not just the communication of an individual alone (Crum, 1987; Knight, 2002; Kovacic, 1997; Rosenberg, 2003; Tzu, 1991). O’Neil (1997) posits that Aikido leaders must work at communication and that they need to move back and forth between action and reflection as a practice in communication. “They work diligently to speak and write the language of mastery, the symbols, words, and phrases that move others to purposeful action” (p. 163).

Conflict communication involves both confrontation and avoidance or nonconfrontation, depending on the stability of the bond between the people interacting. According to Kovacic (1997), there are three specific circumstances to which conflict communication applies: (a) *a specific disagreement*, in which people differ on a

particular issue; (b) *a problem-solving discussion*, in which more time is involved and a lengthier interaction follows, such as a negotiation or mediation process; and (c) *an unhappy/dissolving relationship*, in which continuing communication is marred by conflict because of dysfunctional relationships (Kovacic, 1997). Problems in organizational communication effectiveness relate more appropriately to the first and second types of conflict communication. Organizational conflict is an important part of organizing, according to Lou Pondy (as cited in Hatch, 1997), the American organization theorist, who believes conflict is unavoidable and not be avoided, since it can bring about innovative ideas and stimulate thoughts. Communication conflicts in business are common in organizations and leaders search for new ways to solve these conflicts through improving communication and awareness.

According to Chidambaram (1996), computer-mediated environments hinder the unintended casual conversation exchange needed for teams to develop close working relationships. “With longer periods of interaction, computer-supported teams can exchange more social information, which will then help them develop relational ties” (Chidambaram, 1996, p. 114). Instant messaging, such as Internet Relay Chat, might prove useful in developing these unintended casual conversations (Bird, 1999; Chenault, 1998; Sarbrough-Thompson & Feldman, 1998; Strate, 1999). It is still in the early stages, and as such, leaders should support and encourage it to help incorporate it as part of the Internet community of the organization (Thompson, 2004). Currently, many companies do not charge for the use of their instant messaging service, and it is available internationally (Goldsborough, 2001). As a form of computer-mediated communication,

instant messaging still faces the same problems as electronic mail in the lack of paracommunication cues available in a face-to-face encounter.

Studies performed by Daft and Lengel (1986) showed the media *richness* of computer-mediated communication is less than face-to-face communication, which provides better feedback for developing the close relationships among team members (Chidambaram, 1996). Studies (Walther, 1992) have shown face-to-face communication to be richer since there is more personal information exchanged than there is during a computer-mediated discourse. Over time, the users will adapt the technology to their needs, and relational intimacy can occur. This is known as social information processing theory (Walther, 1992), and it is believed that differences will decrease over time even in an online environment without inhibiting group relationship development (Chidambaram, 1996). According to Syer and Connolly (1996), “the only way to increase awareness—changing the false images team members hold of their relationships and of themselves—is to seek descriptive feedback” (p. 141). The importance to this study is the difference between face-to-face communication and online communication which cause the divergence to become compounded through lack of meaning. There are several studies about communication and relationships or collaboration in an online environment (Albright, 2001; Beca, 2002; Bennett, 2002; Conforti, 2001; Lanigan, 2002; Len-Rios, 2002; Oliver, 2002), yet fewer about awareness in computer-mediated communication.

Paracommunication/Paraverbal Cues

The terms paracommunication and paraverbal refer to the nonverbal communication cues present during a face-to-face conversation between two people. These include dress, demeanor, facial expressions, tone and pitch of voice, inflections,

body language, and gestures not available in computer-mediated communication environments (Kayworth & Leidner, 2002; Koh, 2002; Levick, 1996; Mann et al., 2000; McQuillen, 2003). According to Targowski and Bowman (1988), the term paracommunication is used “when the receiver’s own reflecting information distorts the sender’s intentions” (Targowski & Bowman, 1988, p. 21), as in instances in which a word has two distinct meanings for the people communicating. For purposes of this research, the term refers to the nonverbal cues associated with body language, gestures, tone, and pitch used for expressiveness.

Paralanguage is another term used for the vocal part of speech. This term does not include the language or words spoken, but rather the pitch, tone, tempo, volume, and rhythm (Carter, 2003; Vargas, 1986), sending added information such as emotions to the receiver through *metamessages* (Carter, 2003; McKay, Davis, & Fanning, 1995). Metamessages can add meaning to the message being sent, as they are the nonverbal component of a message, and can include communication such as body language or paralanguage that contradict the message being verbally expressed (Knight, 2002). Computer-mediated communication does not contain paralanguage or the same amount of metamessages as face-to-face communication does. Some ways that paralanguage could exist in computer-mediated communication may be the timing of the message or the diction or punctuation used. Other possible sources may be emoticons, keyboard characters such as :o) or ☺ that add simplistic facial expressions to the message being sent. Another source for expressing emotions in electronic mails may be acronyms compiled from the first letter of the words in an expression, such as LOL meaning *laugh out loud*, or ROFLOL meaning *rolling on floor laughing out loud* ("Www acronym and

abbreviation server", 2004). They do not provide the immediate feedback paracommunication cues do during a face-to-face interaction, and they are unlikely used in work related electronic mails or instant messages (Mann, 1999; Warkentin et al., 1997).

One alternate viewpoint on computer-mediated communication stated “that effective and reliable nonverbal communication can actually exist in a technological mode” (Carter, 2003). As noted by Carter, relationships are forming online despite the lack of paraverbal cues, yet she does realize that nothing can replace face-to-face encounters since so much communication is exchanged through paralanguage or body language, not the actual words spoken. What is interesting to note, as indicated by Ekman (1975), is that words hold more value in terms of accountability since what is said with words, not how the person said it, is what he or she becomes accountable for (as cited in Carter, 2003). Another aspect of computer-mediated communication is the time allowed the receiver to respond to the message. The receiver does not display immediate emotional response to what is communicated as in a face-to-face encounter since the person has time to think about their response before sending it (McQuillen, 2003). Carter (2003) sustained that, because of advances in computer-mediated communication, and the rapid increase of new vocabulary to adjust to the virtual environment, people are able to communicate online and develop relationships by using alternative means of expressing emotions available in the online environment (Carter).

Neuro Linguistic Programming - NLP

“Neuro linguistic programming (NLP) is the study of what works in thinking, language, and behavior” (Knight, 2002, p. 1). Albert Korzybski, the founder of General

Semantics, as well as Milton Erickson, Fritz Perls, Virginia Satir, Paul Watzlawik, and many others, influenced this school of thought (S. Knight, Personal Communication, December 3, 2003). The premise of NLP is to model wanted behavior by first gaining awareness of how a person behaves or learns to achieve the desired results. People learn through different means or senses involving only one or a combination of the following: visual, envisioning what the subject is, auditory, hearing about the subject, or kinesthetic, physically experiencing the subject. By modeling the behavior of a person who already performs at a desired level of excellence, a person can learn how to perform the same tasks at the same level of excellence (Knight, 2002). Aikido helps a person model the awareness needed in communication that is measured in this study.

The Need for Awareness in Virtual Teams

Contact, whether with nature or with another human being, is an experience of acute awareness that one can remember but not . . . easily recreate when it has gone. It is central to the team development process. Contact, in this specialized sense, is the crux of team development and central to quality teamwork. It is a concept that includes the lay definition—as in ‘making contact’, ‘eye contact’, ‘physical contact’—with the specific overtones of mutual awareness (Syer & Connolly, 1996, p. 91).

Syer and Connolly (1996) expressed the importance of contact and communication and the role awareness plays in this process, in their book, *How Teamwork Works*. They also expressed the effect of self-awareness as the ability to take responsibility for the way people interpret experiences and the meaning people give these experiences. The first step in becoming more aware involves realizing that a person wants or needs to change, and as such, they need to become aware of their actions daily, requiring dedication and hard work (Vigil & Broska, 2001). Bohm and Peat (2000) explained awareness in terms of consciousness as follows, “The term *conscious*

awareness is in fairly common usage, and is taken to mean a consciousness (i.e., a knowingness) that is pervaded, to one degree or another, with a sensitivity to the immediate process of environment, body, and mind” (p. 213).

Tacit learning is a way to gain new knowledge through action. It is expressed through the Chinese proverb, “What I hear, I forget, What I see, I remember. What I do, I understand” (Durrance, 1998, p. 26). Japanese businesses use tacit learning in conjunction with explicit learning; however, in the United States businesses tend more towards explicit knowledge through reports, graphs, and procedure manuals (Durrance, 1998; Marwick, 2001). Hirotaka Takeuchi (as cited in Durrance, 1998) explained the way tacit knowledge becomes explicit as the change that happens during the transition from one type of knowledge to another. The author stated, “The conversion can be tacit-to-tacit (watching somebody, then doing it); tacit-to-explicit (doing it, then describing it); or explicit –to-tacit (reading about it, then doing it)” (p. 26). The Nonaka model uses four categories: socialization, externalization, combination, and internalization, involving creating tacit knowledge and communicating it out, creating explicit from tacit, using explicit knowledge, and then creating new tacit knowledge from that process (Marwick, 2001; Nonaka & Takeuchi, 1995).

Neurolinguistic programming employs the use of modeling techniques to gain the tacit knowledge that is not evident through explicit information. However, as stated by Durrance (1998), “Practices involving action have been an essential part of M.I.T.’s leadership training for years. The exercises—derived from Aikido, a nonconfrontational Japanese martial art—bring about awareness of both body and mind. As such, they both create and express tacit knowledge” (p. 26). The following statement describes a way to

explain tacit learning through experience and action: “Aikido consists of encounters, engagements and interactions. It is communication through movement and through process” (Wrobel, 2001, p. 20). In learning Aikido, only essential movement is important, and one must not judge one’s opponent; hence, there remains no sense of self-importance that can impede effective communication (Wrobel, 2001). Tacit learning uses bodily experience to gain new knowledge by doing something physically, thus internalizing the lesson learned (Nonaka & Takeuchi, 1995). Aikido movements bring about self-awareness and allow the participant the opportunity to be both the attacker and the defender, offering a better understanding of both sides of a conflict. “Aikido as both attacker and defender develop skills in awareness and communication. Both participate in the learning process as the elements of the art address interactions regardless of the circumstances of engagement” (Wrobel, 2001, p. 130).

An area of awareness in need of further exploration is how people react to circumstances due to their preconceived ideas. As Berman (2002) stated, “It is important to remember that we speak, think, observe and behave according to the unconscious assumptions that we make about people, situations, things, and most importantly, about ourselves” (p. 430). Berman attributed many communication problems to impulsive responses in communication created by people coming to conclusions too quickly. This assumptive leap occurs when a person does not distinguish between facts and inferences. A fact being something a person has witnessed with his or her own senses, otherwise it becomes an inference which is a second hand description of an event (Berman, 2002). This is similar to the concept in General Semantics where the actual situation and the description of it are two distinct things. Virtual teams have to deal with these issues at an

even greater level because of their online nature; thus, one way to encourage teams to develop collaboration skills is by increasing their self-awareness (Emelo & Francis, 2002). As stated by Wrobel (2001), “Awareness allows for connections” (p. 61); these connections are necessary for developing collaboration.

Aikido as a Tacit Learning Method

Aikido comes from combining three terms, *Ai* referring to harmony; *ki*, that “refers to the subtle energy that propels the universe, the vitality that pervades creation and holds things together” (Ueshiba, 1992, p. 10); and *do*, that refers to the way or the path (Heery, 2003). Due to the physical and mental learning aspect of Aikido it provides a logical medium for tacit learning. Aikido is also viewed as a valuable medium for teaching leadership principles to leaders and managers in Western organizations (Clawson & Doner, 1997). As stated by Clawson and Doner (1997), “Some of the people who have completed a two-hour introductory class report seeing and feeling leadership principles clearly for the first time, or seeing and feeling them in new, exciting and powerful ways” (p. 24). This represents the possibility of learning key principles that Aikido has to offer within a short time period.

Another explanation of Aikido was stated by Dreher (2000),

In aikido, we learn to reach out in fluid movements, neutralizing hostile energies by blending them into a larger whole. Aikido uses an aggressor’s own force and direction to create an energy spiral that resolves conflict and leaves the opponent unharmed (p. 177).

This statement explains the process of conflict resolution used in Aikido. In a similar way, it can be applied in communication when using a mix of dialogue and computer-mediated communication to soften the aggression contained in a message, but using that energy to communicate openly and create an opening for discussion. The following

comment shows the connection between Aikido and communication: “Aikido is the handshake by which we engage others in every interaction of our lives. It is the rapport we establish in our communications” (Wrobel, 2001, p. 1). Wrobel, continued to explain how Aikido helps to develop a person’s awareness and in doing so, how it aids in a personal understanding of how people interact with one another. These interactions require a strong present moment awareness to assist the person in understanding the intentions of the person with whom they are interacting (Wrobel, 2001). Aikido can help change a person’s attitude so it becomes more expansive through the technique of centering. This change in attitude can help a person feel the emotions of others and feel compassion and empathy for the person they are communicating with (Crum, 1997).

Many groups have realized the value of the principles embodied in the art and have taken Aikido out of the training hall and applied the principles to other situations and problems existing in society. Groups such as Aiki Works, Inc. use Aikido principles to provide services for gaining peak performance, conflict resolution, stress management, team building, communication skills, and personal coaching (Crum, 2003). Another group, Aiki Extensions, Inc., established in 1998, has the following purpose:

To support and bring together those who apply the principles of the Japanese martial art of Aikido in a socially constructive way. Aiki Extensions seeks to: strengthen existing efforts by constructing networks, enhancing communications, and providing resources; extend those new efforts to new sites, situations, and areas of application; deepen the philosophical and pedagogical foundations of aikido as a human practice ("Aiki extensions", 2004).

Other groups have incorporated Aikido into their training programs, such as the Strozzi Institute led by Richard Strozzi-Heckler, Ph.D. (Strozzi-Heckler, 2003), while others have written books about conflict resolution and harmony through Aikido principles. Some of these authors include George Leonard (Leonard, 1974, 1991),

Thomas Crum (Crum, 1987, 1997, 2003), Terry Dobson and Victor Miller (Dobson, 1993; Dobson & Miller, 1993), Danaan Parry (Parry, 1997), Stan Wrobel (Wrobel, 2001) and John O'Neil (O'Neil, 1997). They portray the benefits of Aikido in leadership, mastery, self-discovery, teambuilding, self-awareness, and everyday life conflicts. According to Preston (1999), founder of the Preston Group, a training and consulting firm, Aikido can be used in organizations to help deal with change and to convert negative energy into something that will work for the organization. He explained the Aikido approach of not fighting and how the situation usually unfolds in a non-aikido way. As he explained it, "It is the way of harmony and high performance in a business world that never stays the same" (p. 26). The following is a testimonial from Ken Blanchard (as cited on Crum, 2004) to the Aiki Approach based on Aikido techniques and philosophy used by Crum (2004), "Tom Crum's Magic of Conflict approach stands head and shoulders above all others. His programs and materials will give you a powerful new perspective on conflict. You'll learn skills that can actually help you build relationships, even while taking an unpopular or opposing stand."

Conclusion

Due to the changing organizational environment of communication, it is becoming necessary to enhance online communication to reduce misunderstandings. The process of integrating Aikido self-awareness training as a way to increase awareness in communication, using tacit training methods may prove effective. People do not communicate by the same means as they did in the past, and hence, they have to find new ways to bring back their awareness of the important aspects of communication. A review of the literature illustrates how people are developing relationships and adapting to the

changes in communication technology, even to the extent that some researchers believe it is possible to have meaningful relationships through computer-mediated communication.

The problem lies in the lack of a substantial body of literature proposing any significant solutions to the difficulty facing organizational communication by means of computers. Much of the literature reviewed consisted of communication relationships of a sexual nature developing over the Internet and in chat rooms. These examples tend to contain very different communication dynamics than those experienced by teams communicating online. Much of the attention in the literature is devoted to the aspect of sociology, involving identity, and how this is developed and experimented within an online relationship (Edling, 2000).

Developing trust in an online environment can be difficult, but it needs to take place for teams to be successful (Anonymous, 2001). The absence of paracommunication cues in computer-mediated communication and the lack of immediate feedback to determine if a message is understood as the sender intended it to be creating the need for increased time for computer-supported teams to establish the close relationships needed for quick team effectiveness. An increase in awareness may be one way to establish a basis for understanding between people communicating online across time zones and cultures. Aikido may be used as a tacit learning tool to help enhance awareness through mind and body techniques of self-awareness. This quantitative study measured changes in awareness towards communication to determine the effectiveness of Aikido training in providing a means for enhancing online communication.

According to Kouzes and Posner (1995), it is possible to improve face-to-face communication considerably, but there are few research studies available on how to

improve online communication. The existing research does not suggest solutions to this problem that should consider the timing of electronic mails, the cultural differences of the people receiving the communication, and a person's awareness level of the situation discussed. There are gaps in the literature regarding ways to solve the communication issue in organizations, as well as how Internet Relay Chat could be used as a medium to create unintended casual conversation. The focus of literature regarding chat mail remains mostly in the area of Chat rooms and development of sexual relationships therein, not in how working relationships could be developed via instant messaging systems, such as AOL Instant Messenger, Yahoo Instant Messenger, or MSN Instant Messenger that are currently being used by employees in organizations for quick, uninterrupted communication. Many research studies explain the issues and the existing problems, but few provide alternatives or solutions to the problems with communication in the technological virtual environment of today's organizations.

Summary

The purpose of this quantitative study was to measure changes in communication effectiveness as an outcome of awareness training through the art of Aikido and how this may or may not influence one's computer-mediated communication through electronic mail and chat mail. The elements examined in this chapter include communication and how changes in technology, such as the increased use of computer-mediated communication as a global communication tool, affect communication and how relationships develop amongst team members working in a virtual environment. The face-to-face communication environment of past bureaucratic organizations, in which communication lines followed the hierarchical structure of the organization, have given

way to matrix structures in which cross-functional teams communicate in a virtual setting. There are added difficulties of time zones and diverse cultural differences amongst team members (Arai et al., 2001; Kurland & Bailey, 1999). The purpose of General Semantics is to determine how language usage affects understanding. The founders of General Semantics believe in the importance of awareness as it applies to understanding and communication.

Awareness was examined as an aide in understanding communication and in helping people become cognizant of differences in their own communication methods, in turn helping them become more aware of whether or not their messages are understood as they intended. Tacit learning is a means of mind-body learning that can be brought about by Aikido techniques and principles. NLP uses tacit learning through a modeling process, and in Japanese organizations, tacit learning is an important way of learning different tasks. Western organizations use more explicit information techniques, such as reports and procedure manuals, for learning new procedures and processes. For tacit learning, the body has to perform the required task since it is based on action. Aikido can provide this medium for learning self-awareness, as many organizations are currently using these techniques to provide their employees with training in leadership, teambuilding, mastery, and self-discovery, among other concepts.

Chapter 3 addresses the method section of the study, including the research design, instruments used in the study, the population, statistical methods used for data analysis, and the appropriateness of the methods used.

CHAPTER 3: RESEARCH METHODS

This chapter describes the methods and procedures used in this quantitative quasi-experimental study. The following elements are explained in detail: the research design, instruments used in the study, the appropriateness of the method selected, population, feasibility and appropriateness of the study, and statistical analysis of the data. The purpose of this quantitative inferential study using a statistical *t* test method of analysis was to measure self-perceived changes in interpersonal communication style and strengths as outcomes of awareness training through the art of Aikido, and how this training may or may not influence computer-mediated communication styles among regional virtual workgroups in a sales and services company in the United States. The specific areas of communication measured in this study are the communication style and strengths of dominance, extroversion, patience, and conformity contained in the Forté[®] Communication Style Survey[©] (Morgan, 2005), which is the selected communication survey tool for this study. The population consisted of regional virtual workgroups of leaders and consulting teams from a nationwide sales and services company in the United States who communicate by electronic mail and are representative of the increasing use of virtual teams in organizations. For purposes of this study, the communication style strengths of dominance, extroversion, patience, and conformity (Morgan, 2004) were the dependent variables; the Aikido self-awareness training was the independent variable.

Research Design

The research design used inferential statistics utilizing a *t* test (Conover, 1980; Keppel, 1991; Matheson et al., 1978; McCall, 1980; Pedhazur, 1982; Simon & Francis, 2001) to calculate the significance of the data gathered using a pretest-posttest control-

group experimental design (Bickman & Rog, 1998; Cone & Foster, 1998; Creswell, 1994; Creswell, 2003; Rudestam & Newton, 2001) to test the hypotheses relating to the four interpersonal communication style strengths being measured. The independent variable was the Aikido self-awareness training used as the intervention in a workshop format given to the experimental group. The dependent variables were the four communication style and strengths of (a) dominance/non-dominance, (b) extroversion/introversion, (c) patience/ impatience, and (d) conformity/non-conformity (Morgan, 2004). The pretest-posttest design using a control group is a conventional design in which two randomly selected groups receive both a pretest and a posttest while only the experimental group receives some form of intervention (Creswell, 2003).

Research Question

The following research question created a basis for this study: Using a statistical t test, to what degree does Aikido self-awareness training influence, positively or negatively, the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams?

Hypothesis

The research question provided a basis for the following null and alternative hypothesis formulated for this study:

H₀1: Using a t test, Aikido self-awareness training does not influence, positively or negatively, the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams.

H1: Using a statistical t test, Aikido self-awareness training does influence, positively or negatively, the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams.

Instruments

The research tool used in this study was The Forté[®] Communication Style Survey[®] (Appendixes B, C, and D) (Morgan, 2005). This survey tool consisted of two separate surveys, Survey 1 & 2, each containing 30 words or descriptors the participants responded to, all of which are based on a 5-point Likert-type scale. Survey 1 is completed with the view of “How you feel you really are” (Morgan, 2005), while Survey 2 uses the view of “How others expect you to act” (Morgan, 2005). The Forté[®] Adapting Update survey, Survey 3, is identical with Survey 2 and was administered after the intervention, about 40 days after Surveys 1 & 2. Appendixes B and C contain additional detail.

The research required the participants to complete The Forté[®] Communication Style Survey[®] 1 & 2 for the pretest and The Forté[®] Adapting Update Survey 3 for the posttest. Survey 1 creates a Forté[®] Communications Report providing a Primary Communication Profile showing the subject’s individual communication style preferences in the form of communication strengths in varying intensities of dominance/non-dominance, extroversion/ introversion, patience/impatience and conformity/non-conformity (Morgan, 2005). Survey 2, taken at the same time as Survey 1, creates The Forté[®] Adapting and Perceiver profiles, which shows how a person is adapting to their environment or other individuals.

The Perceiver Profile is a third profile produced as a synthesis of Survey 1 & 2, and it shows how the person will *most likely* come across to others. This profile shows

the synthesis between how that person thinks they are communicating and how others perceive them. This profile is a correlation between the individual's primary and adapting profiles (Morgan, 2004). All three profiles are represented by graphs showing the varying intensities of the communication strengths.

The Forté[®] Communication Style Survey[®] (Morgan, 2005) was considered the most appropriate, as it can measure changes in communication strengths before and after an intervention. The Forté[®] Institute uses coaching as the intervention to bring about changes in communication strengths to help the participant better adapt their communication style to their environment. For purposes of this study, Aikido self-awareness training replaced the coaching normally used in The Forté[®] Institute program.

Validity

Bickman (1989) and Cook and Campbell (1979) regarded the following types of validity as necessary for applied research:

Internal validity relates to how well the conclusions of the study can be determined as a result of the intervention applied.

External validity relates to how well the results of the experiment are applicable to the greater population for which the study is conducted.

Construct validity relates to how well the variables can be measured.

Statistical conclusion validity relates to how well the statistical method can measure the changes arising from the study (Bickman & Rog, 1998).

Internal

Gall, Borg, and Gall (1996) stated, "threats to internal validity are problems that threaten drawing correct inferences that arise because of the experimental procedures or

the experiences of participants” (p. 325). They include *history, maturation, regression, selection, and mortality* (Gall et al., 1996). History refers to the changes that may occur between the time the experiment begins and is finished. In this study, there was only a period of 40-50 days between the pretest and posttest. This small amount of time helped minimize any changes in the variables due to extraneous circumstances. The time transpiring also minimized the threat of maturation, in which the participants may change or mature during the study. An electronic mail was sent out asking if any of the participants had joined a martial arts course since the beginning of the study; if so, then their results were excluded from the study.

The threat to validity from regression, in which participants start off with extreme scores but “over time, regress towards the mean” (Gall et al., 1996, p. 325) was overcome since the participants were selected based on the fact that they were either a consultant or a manager working in workgroups on projects for clients. Their communication skills are somewhat similar due to their educational backgrounds and working environment. There were no extreme communication scores among the participants selected. The sample size avoided the threat of mortality, in which participants withdraw from the study before all the data is collected, as the sample size needed for this type of study was 15 per group, and this study allowed for 30 participants per control and experimental group.

The results of the pretest survey were not given to the participants until the study was completed and all the posttest survey data was collected, removing the possibility that the participants would be influenced by the results of their pretest survey. Another threat to validity, which was difficult to control, was the extent to which the control and experimental groups discussed the intervention the experimental group received. A factor

that helped avoid this threat was that the names of the people from any of the groups were not disclosed, only the groups in each of the two workshops knew who was receiving the intervention for that workshop only.

Two factors affect the validity of The Forté® Communication Style Survey® instrument. The first is the reliability of the trait descriptors to define a trait, and the second is the capacity of the survey results to calculate communication style (Morgan, 2003). The structural integrity involves the following: replicability, invariance, constancy, and stability. As described by Morgan (2003), “Nesselroade and Bates (1970) have formulated the concept of structural integrity which incorporates systematic style analytic procedures for establishing structural replicability, invariance, constancy, and stability” (Morgan, 2003). According to analysis performed on The Forté® Communication Style Survey® instrument, there is a high-level of replicability with coefficients above .94 for all styles, with high invariance consisting of coefficients above .87 in all cases across race, sex, and occupation with coefficients above .87 (Appendix I) (Morgan, 2003).

External

The study included participants from the same organization and from the same field of consulting services, allowing the study to be applied to the broader population of workgroups working for virtual organizations and with electronic mail and voice mail as the primary means of communication. The background of the participants was technical or financial in nature with an application towards software. Most of the participants have an undergraduate degree in either Information Systems or Finance, so the educational

background would also be a factor in the likeness of the sample population to other populations of employees working in virtual organizations.

Methods Appropriateness

The research for this study uses inferential statistics with a *t* test method of analysis (Conover, 1980; Keppel, 1991; Matheson et al., 1978; McCall, 1980; Pedhazur, 1982; Simon & Francis, 2001) to analyze the data gathered from The Forté[®] Communication Style Survey[®] (Morgan, 2005) instrument. The reason this was deemed the most appropriate method was due to the nature of the data being measured in intervals for each of the four interpersonal communication style and strengths measured. The statistical *t* test analysis provides a means to measure any statistical significance between the pretest and posttest surveys. The training workshop was the intervention given after the pretest survey. This workshop took place in a hotel conference room and lasted approximately one hour. The participants first saw each of the six exercises demonstrated for them, after which they were asked to practice these with a partner. The Aikido self-awareness training was delivered using a verbal script (Appendix K), explaining the purpose of each exercise based on Aikido techniques of self-awareness.

The intervention workshop script was designed by the researcher and Hiroshi Ikeda, the founder and chief instructor of Boulder Aikikai, Inc., a nonprofit school of aikido in Boulder, Colorado, U.S.A. He currently holds the rank of 7th dan/black belt through the Aikido World Federation. The researcher, who delivered the training, holds a 1st dan/black belt in Aikido from New School Aikido, and has practiced and applied the theory and principles of Aikido over the past 23 years. Her knowledge comes from learning Aikido in different countries with people of diverse cultural backgrounds,

including training with people who do not speak the same language. This experience provided the researcher with the diversity in cultures and languages to understand thoroughly that Aikido is universal and it does not require specific Eastern cultural knowledge to learn from the practices and theories it provides. The training locations the researcher practiced Aikido in include, Berkeley, California; Honolulu, Hawaii; Paris, France; Munich, Germany; Zurich, Switzerland; Stockton, California; Boulder, Colorado. The researcher has also lived in foreign countries such as Spain, France, Germany, and Switzerland for over 21 years, and has gained a reasonable understanding of these cultures and Japanese culture through her study of martial arts.

Population

A sample from a population of consultants consisted of 30 participants in the control group and the experimental group (Lee, 1975; Locke, Silverman, & Spirduso, 1998). 30 participants were randomly assigned to the control and experimental groups which consisted of a random sample of the total target population (Conover, 1980) of 60 potential participants. The sample population was divided into two groups of equal size (Pedhazur, 1982) for the workshop intervention, to minimize extraneous variables (McCall, 1980) affecting the populations. These groups consisted of consultants who are subject matter experts and leaders in their field, working as virtual workgroups, within a sales and services company headquartered in Sunnyvale, California. All participants in the research study received an electronic mail with the consent form to act as a volunteer research subject, and if they completed the surveys then it demonstrate their consent to take part in the research (Appendix K) (Long, Convey, & Chwalek, 1991).

The sample population was considered a convenience sample (Gall et al., 1996; Keppel, 1991) since it was chosen based on the virtual work environment in which the participants communicate as members and leaders of various teams, all within the same company, on projects at remote client sites. The population sample consisted of consultants who perform leadership roles on multiple projects with various workgroups from the same company. The study was focused on the intraorganizational communication occurring among the workgroups.

Feasibility and Appropriateness

According to Bickman and Rog (1998), the feasibility of a research study is determined by the time and resource constraints of the study. Besides feasibility, the credibility and usefulness of the research is also an important factor. The validity section of this chapter describes the survey credibility while the usefulness of the research lies in the applicability of the research question to modern organizational problems of computer-mediated communication (Bickman & Rog, 1998).

The participants performed six exercises based on Aikido techniques during the intervention workshop. These were accompanied by a scripted presentation of concepts on awareness and how to deal with conflict in online communication (Appendix K). The process may have provided tacit mind and body learning which could help the participants to enhance awareness which could in turn help them to gain “subjective insights, intuitions, and hunches from bodily experience” (Nonaka & Takeuchi, 1995). The results of the study may determine the effectiveness of the awareness intervention.

Data Analysis

For purposes of this study, the communication strengths of dominance, extroversion, patience, and conformity were measured as dependent variables, while the intervention of Aikido self-awareness training was the independent variable. Morgan (2005) developed The Forté® Communication Style Survey® based on his work (C. D. Morgan (1978-1983)) and previous works of Thurstone (1934); Cattell, Saunders, and Stice (1950); Guilford (1954); Daniels (1973); Horst (1968); and others. As cited by Morgan (2003), “Allport and Odbert (1936) suggested that the trait descriptions are adaptive in the sense that they enable the knower to understand and possibly to control behavior, whether one’s own or that of others” (p. 3). As such, Morgan (2003) developed the categorizations into communication styles instead of personality traits.

The data collected from The Forté® Communication Style Survey® (Morgan, 2005) was calculated based on a statistical *t* test analysis that measured statistically significant differences in the pretest and posttest results between the control and experimental groups. Graphs are also provided as visual aids to show any changes in the communication strengths between the pretest and posttest data. The evidence of the increased awareness is manifested in the results obtained from The Forté® Communication Style Survey® that measures the changes in communication strengths of the participants. It also shows how they have adapted their communication style strengths to what is expected of them in their online communication. The Forté® Communication Style Survey® was administered with guidelines explaining the context of the survey as being the participant’s online communication within workgroups in their organization.

Appendixes E, F, and G, provide further information on reliability about respondent validity, test- retest reliability, and split-half reliability for The Forté[®] Communication Style Survey[®] as well as statistical data regarding the reliability for the mentioned elements. Appendix I details the instrument validity according to Morgan (2003). The style descriptors contained in The Forté[®] Communication Style Survey[®] can be found in detail in Appendix I.

Summary

This study uses a quantitative method in the form of a pretest-posttest design used to measure changes, if any, in the communication strengths of dominance, extroversion, patience, and conformity, found in The Forté[®] Communication Style Survey[®] (Morgan, 2005). The intervention given to the experimental group was in the form of a workshop providing Aikido self-awareness training. The sample population consisted of consultants who are subject matter experts in their field and who perform leadership functions on project teams working in virtual workgroups for a sales and services company in the United States. For purposes of this study, the communication strengths measured served as the dependent variables while the Aikido self-awareness training served as the independent variable. The statistical *t* test was used to analyze the data gathered from The Forté[®] Communication Style Survey[®] (Morgan, 2005).

The next chapter contains the presentation and analysis of data, including a detailed discussion on the sample population, the data collection and analysis, along with graphical representations of the data.

CHAPTER 4: PRESENTATION AND ANALYSIS OF DATA

The purpose of this quantitative inferential study using a statistical t test was to measure self-perceived changes in interpersonal communication style and strengths as outcomes of awareness training through the art of Aikido, and how this training may or may not influence computer-mediated communication styles among regional virtual workgroups in a sales and services company in the United States. The specific areas of communication measured in this study were the communication style and strengths of dominance, extroversion, patience, and conformity contained in the Forté[®] Communication Style Survey[®] (Morgan, 2005). A sample from regional virtual workgroups of leaders and consulting teams from a nationwide sales and services company in the United States were the participants of this study. They communicate by electronic mail and are representative of the increasing use of virtual teams in organizations. For purposes of this study, the communication style strengths of dominance, extroversion, patience, and conformity (Morgan, 2004) were the dependent variables; the Aikido self-awareness training was the independent variable.

The following research question created a basis for this study: Using a statistical t test, to what degree does Aikido self-awareness training influence, positively or negatively, the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams? Based on this research question, the following null and alternative hypothesis was formulated for this study:

- H₀1: Using a *t* test, Aikido self-awareness training does not influence, positively or negatively, the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams.
- H₁: Using a statistical *t* test, Aikido self-awareness training does influence, positively or negatively, the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams.

Chapter 4 contains the presentation and analysis of data in the following detailed areas: (a) the sample population, (b) the data collection process, (c) the analysis of data, (d) a graphic representations of the variables, (e) results of the data collected, and (f) a summary.

Sample Population

The sample population used in the data analysis of this study consisted of 60 participants (N = 60) who were randomly selected by convenience sampling from the total department target population of 305 from a sales and services company headquartered in Sunnyvale, California. These groups consisted of consultants who were subject matter experts and leaders in their field, working as virtual workgroups. The participants voluntarily agreed to complete the Forté[®] Communication Style Survey[®] (Morgan, 2005). Thirty participants (N = 30) were randomly selected from this sample population, who voluntarily agreed to participate as the experimental group. The remaining 30 participants (N = 30) formed the control group. The experimental group participants were divided equally into two groups of 15 for the workshop intervention, which took place on two separate evenings in a conference room at a hotel in Stamford, Connecticut.

All participants in the research study received an electronic mail with the consent form (Appendix L) to act as a volunteer research subject for this study. The population sample consisted of consultants who performed leadership roles on multiple projects with various workgroups from the same company. The research study was focused on the intra-organizational communication occurring among the workgroups, and this premise was explained to all participants in an electronic mail sent out to the group of participants.

Data Collection

The Forté® Communication Style Survey® 1 & 2 (Appendixes B and C) (Morgan, 2005) was completed during a 1-week period, with all of the experimental group completing the survey within a 3-day period. The research participants were attending company training and meetings for the duration of the week at the hotel where the research took place. Electronic mail was sent out to 175 potential candidates, including all the consultants listed in the scheduling system from the services organization. This electronic mail was sent 1 week prior to the training and it explained that the researcher was looking for participants for her doctoral research study. Only 12 potential candidates responded to that initial communication and the rest of the candidates were approached face-to-face on the first 3 days of the training week and asked to volunteer for the study. An additional 58 candidates agreed to participate in the study at that time, for 67 potential research participants.

There were 32 candidates for the experimental group and only 30 for the control group because 5 control group participants never completed Survey 1 & 2. An additional 23 candidates were randomly sent the survey request. The random selection was

performed by selecting every sixth name remaining on the list of 175. Three of these candidates filled out the survey and became part of the control group for a count of 33. The purpose of collecting the additional participants was to meet the statistically significant figure of 60 surveys for analysis (Conover, 1980; Lee, 1975; Locke et al., 1998; McCall, 1980; Pedhazur, 1982).

All participants in the experimental group had completed Survey 1 & 2 by the evening of the third day. This group was divided evenly into two groups of 16, and the intervention took place with Group A on the third evening. On the fourth evening Group B received the same intervention as Group A (see Appendix K). In the end, the gender distribution of the groups was seven women and nine men the first night, and one woman and 15 men the second. The only data collected with the Forté® Communication Style Survey® were the participants' electronic mail and physical addresses. Most of the participants provided their corporate address for this purpose. It was likely that all of the candidates had a Masters or Bachelor's degree, as a college degree is a requirement for all candidates applying for consulting positions within the company.

On both evenings the intervention took place in the same small conference room without windows or furniture and with the door closed to minimize distractions. The participants were gathered in the room and it was explained to them that this event was part of a doctoral research study on the effects of Aikido training on computer-mediated communication between virtual teams, and they were the group receiving the intervention. It was confirmed that everyone had completed Survey 1 & 2 before the script provided in Appendix K was read to them.

A local Aikido school assisted by providing three assistants and their lead instructor, a sixth degree black belt, who acted as an assistant in demonstrating each exercise to the group. Each exercise was demonstrated with the assistant, and then, the group paired off with a partner to perform the exercise as described in the script (Appendix K). After the group tried the exercise, the Aikido assistants would demonstrate to the group how the concept of each of the Aikido exercises looked when performed by experienced aikidoists. The complete intervention lasted approximately 50 minutes. The participants were asked not to discuss the intervention with anyone from the organization. The same process took place with Groups A and B on their respective evenings.

One participant from Group B did not complete the survey prior to attending the intervention, but the individual completed a paper copy before the intervention started. However, the participant failed to complete an entire section of the survey, so this participant and survey were disregarded. It was not discovered that the section had not been completed until after the intervention took place.

After the training week, not all the control group had completed Survey 1 & 2, so additional reminders were sent to that group electronically. An additional 23 control group participants were selected to receive the invitation to take Survey 1 & 2, in case there were not enough control group participants responding. The participants were told that they would receive a reminder electronic mail inviting them to take Survey 3. Participants also received a 13-page evaluation of the results of their communication style after they completed the posttest survey.

Analysis of Data

The data gathered was analyzed using a statistical *t* test as well as an analysis of variance (ANOVA). The ANOVA confirmed the results of the means analysis using the *t* test method. The data was collected from the online surveys and was received electronically then transferred into a Microsoft Excel spreadsheet (Appendix O). The data was then calculated in the *Statistical Program for the Social Sciences* (SPSS) software to obtain a statistical *t* test analysis of the data to measure the difference in means between the control and experimental groups. A one-way ANOVA also was used to measure any differences between or among the sample means. The ANOVA allows for more than one pair of means to be examined at the same time, unlike the *t* test method that can only be used for pairs of means (Howell, 2001). The dependent variables, which were the four communication strengths of dominance, extroversion, patience, and conformity, are represented through bar graphs.

The purpose of using a statistical *t* test was to measure frequency changes in mean scores of the dependent variables of the communication strengths of dominance, extroversion, conformity, and patience, as well as their relationship to the independent variable of awareness training. The Primary Profile, the Adapting Profile, and the Perceiver Profile each contain the four variables of communication strength - dominance, extroversion, patience, and conformity. Only pretest data exists for the Primary Profile, as the Forté® Communication Style Survey® was not designed to retest a subject's Primary communication strengths, as these strengths should remain consistent over time.

One-way ANOVA was used as an additional method to assess differences in means. None of the communication strength variables provided significance with $p <$

0.05. Although not statistically significant, it is noteworthy that the dependent variable for dominance contained in the Primary Profile was $p = 0.067$.

The data in Table 1 represents the t test comparisons for mean values for each variable in each profile, for both the control and experimental groups and for pretest and posttest. The two-tailed t test results did not provide any statistically significant variations in the group statistics. The only group that showed a trend towards significance, was the dominance communication strength in the Primary Profile ($p = 0.067$), as noted by the asterisk.

Table 1

T Test, Comparison of Means for each Variable, Group Statistics

	Control or Experimental Group	N	Mean	Std. Deviation	Std. Error Mean	df	t	Sig.
Primary (Pretest) DOM	Control	33	1.91	9.101	1.584	63	1.861	.067*
	Experimental	32	-2.22	8.768	1.550			
Primary (Pretest) EXT	Control	33	3.18	8.897	1.549	63	.324	.747
	Experimental	32	2.50	8.008	1.416			
Primary (Pretest) PAT	Control	33	2.48	8.284	1.442	63	-.541	.591
	Experimental	32	3.56	7.771	1.374			
Primary (Pretest) CON	Control	33	-5.55	7.694	1.339	63	-.983	.329
	Experimental	32	-3.69	7.541	1.333			
Adapting (Pretest) DOM	Control	33	5.52	7.319	1.274	63	.956	.343
	Experimental	32	3.84	6.754	1.194			
Adapting (Pretest) EXT	Control	33	8.48	6.320	1.100	63	.647	.520
	Experimental	32	7.47	6.340	1.121			
Adapting (Pretest) PAT	Control	33	-8.45	6.472	1.127	63	-.556	.580
	Experimental	32	-7.53	6.914	1.222			

Adapting (Pretest) CON	Control Experimental	33 32	1.45 -.22	7.014 6.857	1.221 1.212	63	.972	.335
Adapting (Posttest) DOM	Control Experimental	30 30	3.80 1.23	6.692 7.668	1.222 1.400	58	1.381	.173
Adapting (Posttest) EXT	Control Experimental	30 30	5.47 6.23	7.026 6.306	1.283 1.151	58	-.445	.658
Adapting (Posttest) PAT	Control Experimental	30 30	-5.93 -6.20	7.501 5.436	1.370 .992	58	.158	.875
Adapting (Posttest) CON	Control Experimental	30 30	2.87 1.23	6.569 5.894	1.199 1.076	58	1.014	.315
Perceiver (Pretest) DOM	Control Experimental	33 32	3.09 1.75	6.526 6.232	1.136 1.102	63	.847	.400
Perceiver (Pretest) EXT	Control Experimental	33 32	6.39 6.81	5.825 4.299	1.014 .760	63	-.329	.743
Perceiver (Pretest) PAT	Control Experimental	33 32	-4.85 -3.34	7.408 6.147	1.290 1.087	63	-.890	.377
Perceiver (Pretest) CON	Control Experimental	33 32	-3.48 -1.84	5.624 6.181	.979 1.093	63	-1.120	.267
Perceiver (Posttest) DOM	Control Experimental	30 30	2.67 .33	5.956 6.121	1.087 1.118	58	1.496	.140
Perceiver (Posttest) EXT	Control Experimental	30 30	5.10 6.20	6.671 4.902	1.218 .895	58	-.728	.470
Perceiver (Posttest) PAT	Control Experimental	30 30	-4.17 -2.23	6.613 6.399	1.207 1.168	58	-1.151	.255
Perceiver (Posttest) CON	Control Experimental	30 30	-2.40 -1.10	5.021 6.150	.917 1.123	58	-.897	.373

Graphic Representation of Variables

The pretest means for each dependent variable in the control group differed from those of the pretest means of the experimental group. The following figures graphically display the differences between the control and experimental groups for each variable within each representation. The data values for these graphs are taken from Table 1. Figure 1 displays the Primary Profile for both control and experimental groups with the dependent variables of dominance, extroversion, patience, and conformity. As noted above, differences in the Adapting Profile pretest and posttest for all variables, and the Perceiver Profiles pretest and posttest for all variables were not statistically significant.

The research question created as a basis for this study related to all the variables: Using a statistical *t* test, to what degree does Aikido self-awareness training influence, whether positively or negatively, the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams? Based on this research question, each variable was analyzed by comparing the pretest and posttest results and noting the differences between the control and experimental groups.

The Primary Communication Profile displays the subject's individual lifetime communication style preferences in the form of communication strengths in varying intensities of dominance/non-dominance, extroversion/ introversion, patience/impatience and conformity/non-conformity (Morgan, 2005). Although generally not statistically significant, Figure 1 also demonstrates the variation between the means of the control and experimental groups for all the communication strengths in the Primary profile.

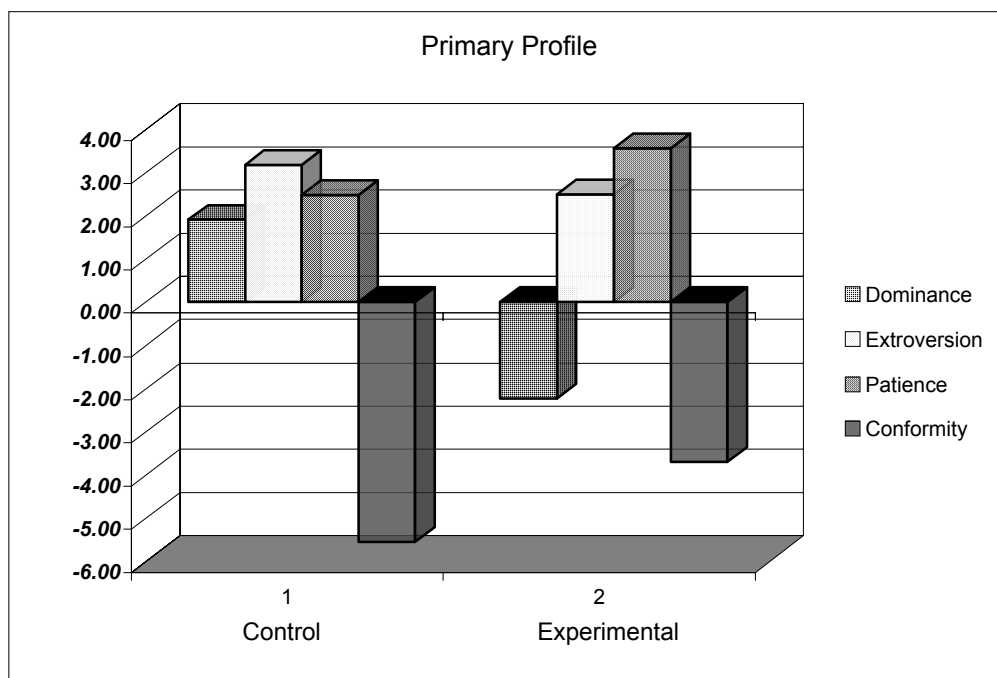


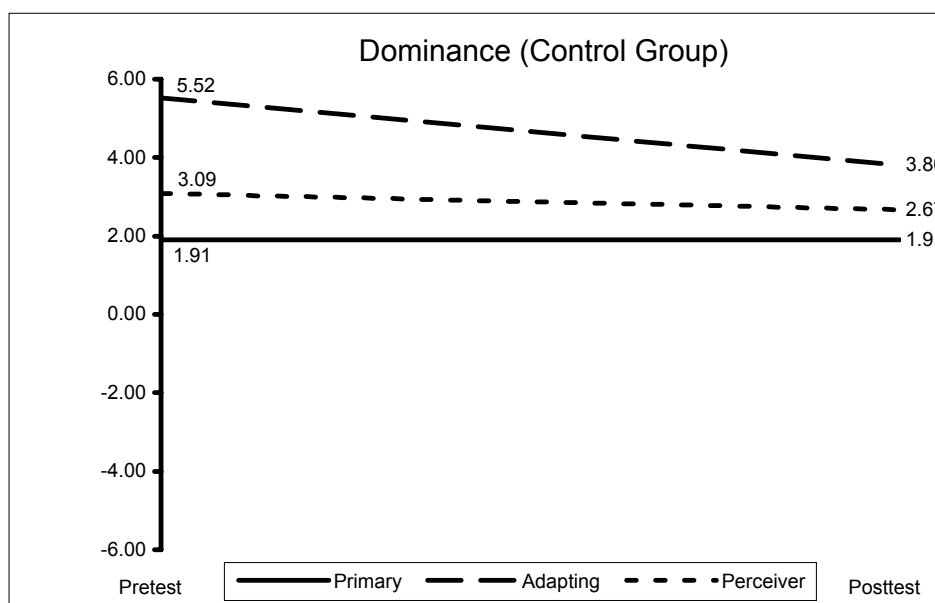
Figure 1. Primary profile for control and experimental groups.

Although not statistically significant it is worthwhile to note that the communication variable of dominance in the control group was higher than in the experimental group, as shown in Figure 1. The control group sample showed a mean dominance score of 1.91 indicating a tendency for dominance whereas the experimental group showed a mean sample score of -2.22, reflecting a tendency for non-dominance. Dominance was the only variable that showed a trend towards statistical significance at the $p < 0.05$ level (i.e., $p = 0.067$). Significance values for the remaining dependent variables were as follows: extroversion $p = 0.747$, patience $p = 0.591$, and conformity $p = 0.329$. None of these variables revealed statistical significance approaching $p < 0.05$.

The Forté® Adapting profile represents how a person is adapting to their communication environment over a period of time (Morgan, 2004). The results show that there are no statically significant scores for the Adapting pretest to posttest comparison, as calculated using ANOVA for this profile. The Forté® Perceiver profile represents a

synthesis between the Primary and Adapting profiles to create a perspective of how a person is most likely perceived by others (Morgan, 2004). The Perceiver pretest to posttest comparison did not reveal any statistically significant results at $p < 0.05$.

Figure 2 displays the differences between the control and experimental groups and how the Adapting and Perceiver Profiles decline in values for the Primary profile in the posttest results of both groups. According to Morgan (2004), if there are more than two points between the adapting and perceiver patterns, either positively or negatively, then there is potential for miscommunication. If the changes in values are greater than eight points it represents a need for further consideration (Morgan, 2004).



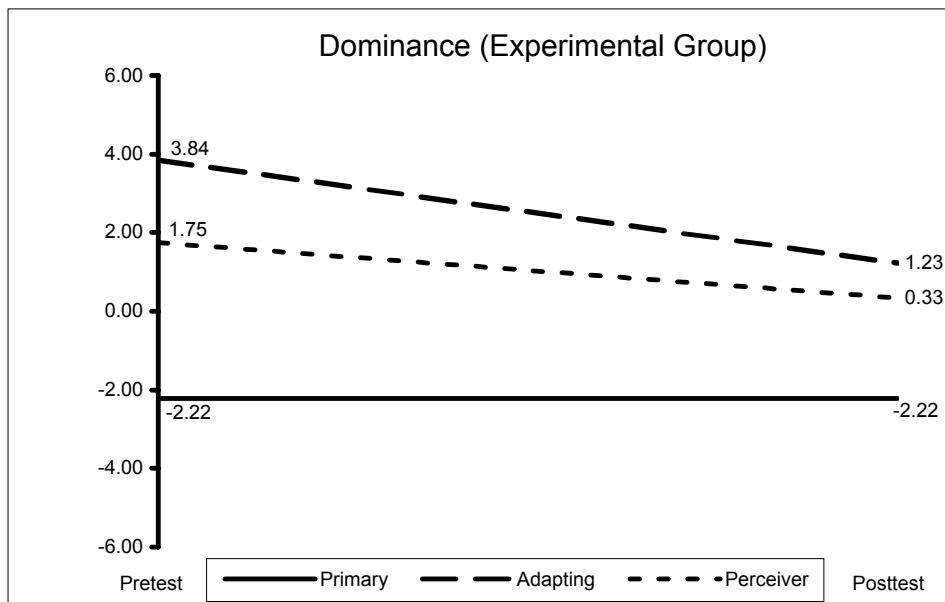


Figure 2. Dominance variable compared between the control group, top graph, and experimental group, bottom graph.

Figure 3 reflects the conformity communication strength for both the control group in the top graph, and the experimental group in the bottom graph. Figure 3 graphically shows the differences between these two groups and how the Adapting and Perceiver Profiles scores increased from the Primary profile in the posttest results of both the control and experimental groups.

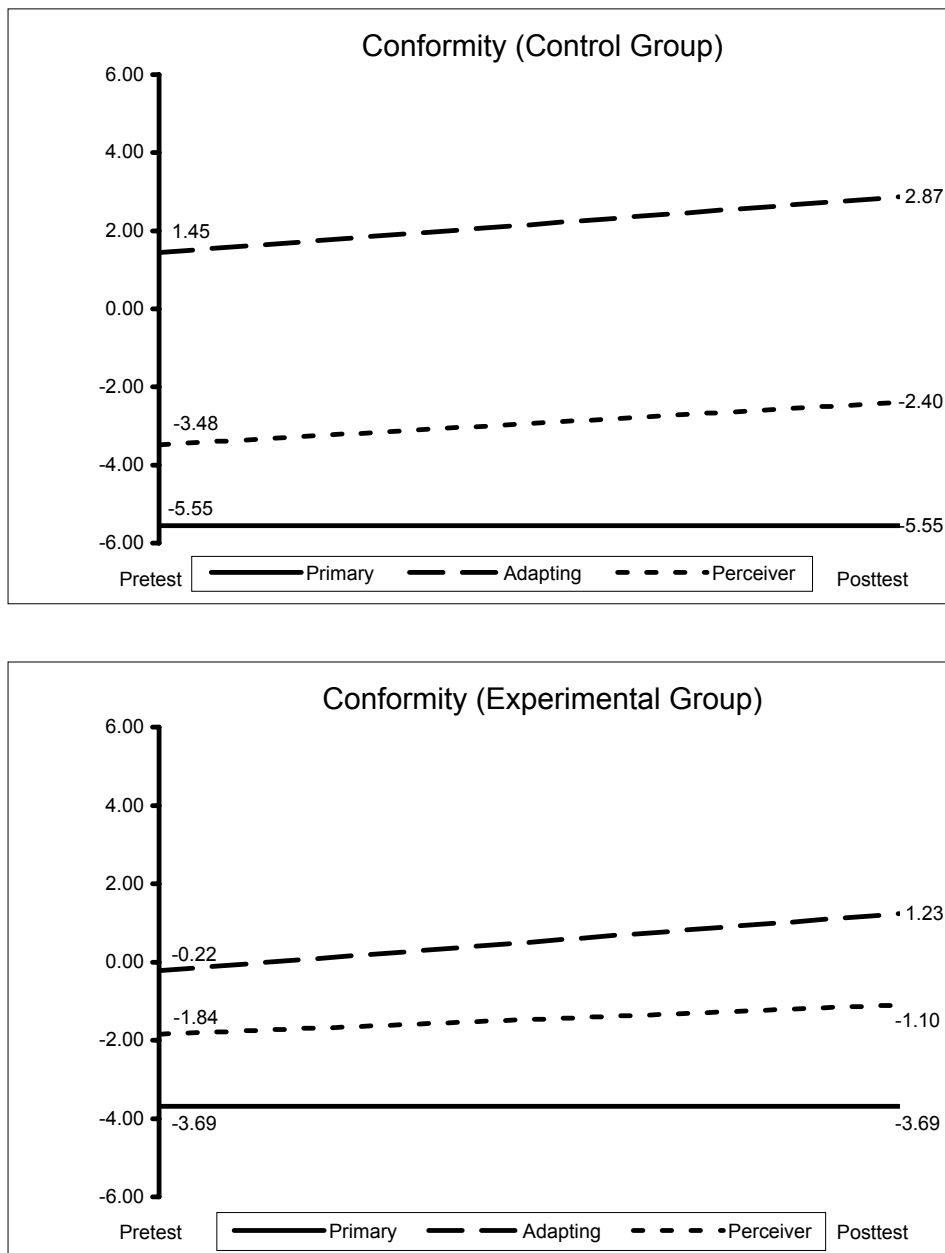


Figure 3. Conformity variable compared between the control group, top graph, and experimental group, bottom graph.

Results of Data Collected

Using ANOVA and *t* tests, comparisons of the mean scores for the dependent variables (i.e., dominance, extroversion, patience, and conformity) were not statistically significant at the $p < 0.05$ level for Primary, Adapting, and Perceiver profiles. These

results indicated that it is not possible to reject the null hypothesis. The research question for this study was the following: Using a statistical t test, to what degree does Aikido self-awareness training influence, positively or negatively, the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams? Based on this research question, the results indicate that there is not a statistical significance showing that Aikido self-awareness training does or does not influence the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams.

Summary

This chapter reports analyses of the data resulting from this study. The methods used to analyze the data were a two-tailed t test, and a one-way analysis of variance (ANOVA). While the t test and ANOVA results did not reveal statistically significant differences in mean scores for any of the variables, the correlation results revealed highly significant correlations. Each of the four communication styles, dominance, extroversion, patience, and conformity, were graphically represented to illustrate the differences between the control and experimental groups for each of the Primary, Adapting, and Perceiver profiles.

The trend graphs for the communication strengths reflected the changes from pretest to posttest for all three profiles. These graphs compared the Profiles to one another and showed that the Adapting and Perceiver profiles in the posttest results did reflect a decrease in variance to the Primary profile. Overall, the findings of the study resulted in a failure to reject the null hypothesis.

The next chapter presents the culmination of the research study, containing a review of the methods, analysis of the data, and an interpretation of the data and key findings. The scope of the study and the limitations are presented, with implications to leadership and recommendations for future research. The chapter is divided into sections that address each of the above items, ending with different implications of the study to future research.

CHAPTER 5: CONCLUSIONS, IMPLICATIONS, AND RECOMMENDATIONS

The purpose of this chapter is to present the interpretation of the data resulting from the research study, to review the research study, and discuss the implications of this study for future research and for general society. Chapter 5 addresses the following aspects of the study: (a) literature review, (b) methods review, (c) scope and limitations, (d) analyses of the data, (e) implications of the research, (f) the significance to leadership, (g) recommendations, and (h) conclusion.

Review of the Research Study

This research study addressed the problem of employees who do not communicate effectively in an online environment. The study focused on the problem of employees who may inaccurately interpret messages and react inappropriately based on assumptions they make using prior experiences as a basis for their decisions (Axley, 1986; Berman, 2002). It was presumed that a quantitative analysis measuring changes in virtual communication effectiveness could determine if awareness training would help reduce miscommunication in the online environment.

The results of this research showed that there were no statistically significant relationships between self-awareness training (using Aikido techniques), and online communication effectiveness. As such, it was determined that under the conditions and variables in this study, and with the sample population used, the following null hypothesis could not be rejected:

H₀₁: Using a *t* test, Aikido self-awareness training does not influence, positively or negatively, the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams.

Literature Review

The literature review contains comprehensive information regarding the areas of communication, online communication, self-awareness, leadership, and Aikido. These areas were explored in terms of historical background, the interrelationship between the different topics, and current findings. There was limited research revealing correlations between self-awareness and online communication. Most of the literature correlated face-to-face communication with cultural awareness. These reports pertained to how employees deal with different opinions and viewpoints from a cultural perspective, especially managers and leaders working in other countries.

The field of online communication is a relatively new subject that is not readily found in research literature. The focus of this study was an attempt to correlate mind/body awareness training, such as Aikido, with increased effectiveness in online communication, whereas most of the literature on Aikido focused on its use in conflict resolution. As stated by Rew and Ferns (2005), “the use of eastern philosophies and techniques, such as Aikido, have been used successfully in conflict resolution and are worth considering as an alternative method to complement such teaching methods as good communication skills” (Rew & Ferns, 2005). Other studies (Miller-Lane, 2004) explored what teachers can learn from Aikido techniques and training to help facilitate disagreements in the classroom. No additional studies were found that related Aikido to online communication effectiveness.

Methods

Due to the relatively small sample population size (30 participants in the control group and 30 participants in the experimental group) in the posttest results, the study was

limited in the methods available for use in data analysis. Inferential statistics were used for this study. These included two-tailed t tests and one-way analysis of variance (ANOVA), to assess differences in mean scores. None of the results were statistically significant.

The data was collected from the pretest and posttest surveys online. The control group did not receive any intervention. The experimental group was divided into two equal groups; each group received the Aikido/self-awareness training on two separate evenings after taking the pretest survey. The training on both evenings was given using the same script for both groups (Appendix K). The posttest surveys were not administered until 30-40 days after the pretest survey, thereby providing the sample population time to experience diminishing effects from the Aikido self-awareness training.

Most of the research studies involving Aikido used qualitative methods. This study represents a first attempt to use quantitative methods to measure the effects of Aikido in a sample population. Additional studies may find that Aikido is effective for different types of training, although this researcher knows of no studies of Aikido use in online communication, nor within organizations.

Scope and Limitations

Research participants were limited to consultants working for a single company used for purposes of this study, representing a convenience sample. This group was selected based on their use of online communication as the main form of communication among workgroups. Any measured changes in interpersonal communication related solely to online communication within the workgroups and did not include client or

personal communications outside the company. The dependent variables were limited to the four communication styles and strengths (i.e., dominance, extroversion, patience, and conformity) contained in the Forté® Communication Style Survey© (Morgan, 2005).

One extraneous variable that might have had an effect on the results of this study was the timing between the intervention and the posttest survey. This timing difference was due to circumstances under which the research study was performed. The data collection took place during a weeklong training exercise conducted by the company during which all research participants were in the same physical location at the same time. The sample population consisted of consultants from various locations in the United States, so the best opportunity was to perform the intervention during the week after the pretest survey was administered.

Due to these circumstances, the majority of the 30-40 day period between the pretest and posttest surveys was in the time period after the intervention for Group A and Group B and before the posttest survey was administered. As a result there was an imbalance of time and of the lasting effects of the intervention caused by the approximately 30 – 40 days that transpired before the posttest survey was administered. This provided the sample population ample time to experience diminishing effects of the training. Perhaps if a similar study is performed, reinforcement training or a longer period of training could be examined to see if this produces different results.

Analysis of the Data

The ANOVA and *t* test results indicated that differences in mean scores were not statistically significant, resulting in a failure to reject the null hypothesis. Although the findings were not statistically significant, there are several noteworthy findings. The

ANOVA results for the dependent communication variable of dominance in the Primary profile was $p = 0.067$. This indicates that the control group reflected a trend towards a higher dominance level than the experimental group. The researcher can offer no explanation for this finding at this time. Appendix P reflects the pretest (top graphs) and posttest (bottom graphs) communication strength distribution of the experimental group according to the Forté® Team Builder System report, while Appendix Q reflects the control group strength distribution.

The research question addressed in this study was as follows: Using a statistical t test, to what degree does Aikido self-awareness training influence, positively or negatively, the communication strengths of dominance, extroversion, patience, and conformity in computer-mediated communication among virtual teams? The results revealed no statistically significant degree of influence affecting the communication strengths, whether positively or negatively. Although not statistically significant, it is noteworthy that the mean scores for the communication strength of conformity in both the control and experimental groups increased in value for the Adapting to the Perceiver profile in the posttest results. As noted by Morgan (2004), if differences in scores from the Adapting to the Perceiver profile are greater than two points, either positively or negatively, then there is potential for miscommunication. If the differences in scores are greater than eight points it represents a need for further consideration (Morgan). Also noteworthy within the conformity strength, the experimental group shifted from having a tendency towards non-conformity with a mean score of -0.22 in the pretest results to a tendency towards conformity in the posttest results with a mean score of 1.23 as shown in the bottom graph of figure 3. The rest of the communication strengths showed a decline

in values from the Adapting to the Perceiver profile in the posttest results for both the control and experimental groups.

Implications of the Research

This research study failed to reject the null hypothesis. There was no statistically significant degree of influence found between self-awareness training using Aikido techniques and the effectiveness of online communication among workgroups in a decentralized organization. This result can only be noted for the specific population of consultants used within this study. The implications of this study for the larger community of virtual teams working in decentralized organizations might be that the use of tacit learning methods of self-awareness being applied to a virtual communication setting are too remote to measure any effective results. However, further studies are required because virtual teams only recently are being used and examined in organizations. Remote work environments are becoming more popular but have only been examined for effectiveness in the last decade (Attaran & Attaran, 2003; Emelo & Francis, 2002; Gibson & Cohen, 2003; Guo, 2003; Handy, 1995; Hunt, 2001; Kayworth & Leidner, 2002). It is possible that there is no replacement for the paracommunication cues of face-to-face communication in the online environment.

This research reflects a divergence from traditional approaches to learning and training provided in many organizations. The concept of an Eastern philosophy of self-awareness involving the mind and body has only been explored in Eastern organizations until recent years. However, the success of such training in these organizations has not been quantitatively measured. Further research into Eastern methods of training managers and leaders could demonstrate the effectiveness of such methods. Eastern organizations

recommend that to gain tacit knowledge, a person must experience something directly, not by reading instructions or a book (Nonaka & Takeuchi, 1995). However, tacit knowledge is difficult to communicate because it is intrinsic to knowing how to do something, and it can be very personal because it is acquired through experiences (Hedlund, 1994; Liao, 2005).

In Western cultures, most of the knowledge gained is explicit and more cognitive in nature because it is usually gained through words and data. According to Nonaka and Takeuchi (1995), “the most powerful learning comes from bodily experience” (p. 239), or physical learning experience. The differences in culture between Eastern and Western organizations might make it more difficult to teach communication in Western organizations using tacit learning methods. Further research into the learning methods between Eastern and Western cultures could prove helpful in understanding whether tacit learning is effective for Western organizations. Another area open to further research would be to measure the effectiveness of tacit learning methods for transferring knowledge used in a virtual setting, such as online communication.

Significance to Leadership

The broader social significance of this study is that an Eastern philosophy of self-awareness, such as Aikido, might not provide an effective tacit learning method to influence online communication among virtual teams. For learning communication effectiveness, virtual teams may need more consistent training reinforcement, due to their virtual nature. Teams working in a face-to-face environment might produce different results when learning through tacit methods such as Aikido. For managers and leaders, this study can provide insight into the effects of self-awareness training for online

communication among virtual teams. Other training methods may prove more effective for virtual teams, and yet further research might find that non-virtual teams may benefit from self-awareness training such as Aikido.

Recommendations

Communication continues to be an important element of success in organizations for leaders (Hall, 2004), and virtual teams depend on online communication to solve problems and transfer information. As such, the problems addressed in this study still exist and that further exploration is needed to determine what method of training can significantly influence online communication among virtual workgroups in a positive way. Other areas for potential exploration include researching the extent to which para-communication cues influence the understanding of meaning, in order to evaluate differences in understanding meaning between online and face-to-face communication.

A recommendation for researchers exploring the effectiveness of tacit learning methods for influencing communication skills might be to try a similar study on non-virtual teams to see if a face-to-face communication environment provides a higher likelihood of being influenced by this type of study. One recommendation is that the intervention, which for purposes of this study was Aikido/self-awareness training, should take place closer to the mid- or end-point of the 30-day period before the posttest survey is administered. In this study the intervention occurred within a few days of the pretest survey hence there was a greater time span that elapsed after the intervention, allowing for a diminishing impact of the training to take place.

Due to the limited number of quantitative studies measuring effectiveness in online communication, it is recommended that differences between tacit learning

methods and explicit learning methods be measured for any influence made on online communication among virtual teams. This inquiry would provide a basis for understanding if explicit learning methods would provide significant results. The recommendations for both virtual and non-virtual teams are important to managers and leaders in organizations today, as both types of teams exist and are being increasingly used as specialized workgroups for solving problems and providing services.

Further research into the effectiveness of the Aikido/self-awareness training with repeated reinforcement training might prove beneficial as well. Because this study only addressed a one-time intervention, the effects of repeated or longer-lasting interventions might provide more significant results. It is recommended that a similar study be performed with repeated Aikido/self-awareness training intervention by repeating the training after the Forté® Adapting update survey and then repeating the posttest survey with a 30-day timeframe between the two surveys. This process could provide a reinforcing effect of the training.

Conclusion

This study explored virtual teams communicating in an online environment. Self-awareness training using Aikido techniques did not provide statistically significant results as a training method for influencing the communication strengths of dominance, extroversion, patience, and conformity, among virtual teams communicating online in the company selected for this analysis. Leaders still face the challenges of communication in organizations, and there are few studies that measure the effectiveness of communication in both online and face-to-face environments. There is a need for additional studies to distinguish what type of training can effectively influence communication skills in an

online environment. Because the problem identified in this study still exists in organizations, there is additional opportunity for researching the issues of miscommunication among teams. This study provides a quantitative analysis that brings new knowledge to the fields of communication, Aikido, leadership, and virtual teams.

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APPENDIX A: RESEARCH REVIEW

Key Term Searches	Peer Reviewed Articles and Journals	Research Documents and Dissertations	Books
Computer-mediated communication	3,372 / 50	24	18 / 18
Online Communication	458 / 52	24	18 / 18
Communication	316,106 / 123	24	75 / 75
Paralanguage/ paracommunication	16 / 10	2	5 / 5
Communication Theory	281 / 13	6	22 / 22
Internet Relay Chat (IRC)	116 / 23	1	5 / 5
Electronic mail	22,228 / 40	5	18 / 18
Virtual Organizations	183 / 35	4	5 / 5
Virtual Teams	152 / 37	12	3 / 3
Awareness	12,557 / 48	3	18 / 18
Awareness and Communication	6 / 6	1	18 / 18
Aikido	160 / 20	24 / 6	24 / 24

In reference to the title searches, the first number indicates total number of results found, while the second number indicates the number of references retrieved.

APPENDIX B: SURVEY 1 & 2



Communication Style Survey

Survey 1

Date: _____

First Name: _____ Last Name: _____

E-Mail: _____ Gender: M F

Organization: _____ Position: _____

Address: _____ Phone: _____

_____ Fax: _____

_____ ZIP/Postal Code: _____

Circle the numbers below which best describe:

How You Feel You Really Are (when not under outside pressure)

Mark your responses quickly, as your first response is usually best!
This is a survey. There are no right or wrong answers.

	Guide: 1-Rarely	2-Seldom	3-Sometimes	4-Often	5-Usually
1. Individualistic	1 2 3 4 5	11. Daring	1 2 3 4 5	21. Aggressive	1 2 3 4 5
2. Spirited	1 2 3 4 5	12. Demanding	1 2 3 4 5	22. Industrious	1 2 3 4 5
3. Shy	1 2 3 4 5	13. Persuasive	1 2 3 4 5	23. Compassionate	1 2 3 4 5
4. Stick-to-it	1 2 3 4 5	14. Outgoing	1 2 3 4 5	24. Careful	1 2 3 4 5
5. Understanding	1 2 3 4 5	15. Earnest	1 2 3 4 5	25. Controlling	1 2 3 4 5
6. Precise	1 2 3 4 5	16. Pleasant	1 2 3 4 5	26. Thoughtful	1 2 3 4 5
7. Spontaneous	1 2 3 4 5	17. Stable	1 2 3 4 5	27. Charming	1 2 3 4 5
8. Logical	1 2 3 4 5	18. Kindhearted	1 2 3 4 5	28. Calm	1 2 3 4 5
9. Cautious	1 2 3 4 5	19. Enthusiastic	1 2 3 4 5	29. Fussy	1 2 3 4 5
10. Talkative	1 2 3 4 5	20. Impulsive	1 2 3 4 5	30. Agreeable	1 2 3 4 5

Be sure all 30 responses are circled. Then complete survey 2.

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Complete after finishing survey 1 above.
Note: Instructions are different from survey 1.
Circle the numbers below which best describe:

Survey 2

How others expect you to act

	Guide: 1-Rarely	2-Seldom	3-Sometimes	4-Often	5-Usually
1. Competitive	1 2 3 4 5	11. Persistent	1 2 3 4 5	21. Forceful	1 2 3 4 5
2. Sophisticated	1 2 3 4 5	12. Bold	1 2 3 4 5	22. Confident	1 2 3 4 5
3. Tolerant	1 2 3 4 5	13. Esteemed	1 2 3 4 5	23. Sympathetic	1 2 3 4 5
4. Dynamic	1 2 3 4 5	14. Eager	1 2 3 4 5	24. Accurate	1 2 3 4 5
5. Serious	1 2 3 4 5	15. Congenial	1 2 3 4 5	25. Conventional	1 2 3 4 5
6. Responsive	1 2 3 4 5	16. Patient	1 2 3 4 5	26. Charitable	1 2 3 4 5
7. Dominant	1 2 3 4 5	17. Steady	1 2 3 4 5	27. Appealing	1 2 3 4 5
8. Self-assured	1 2 3 4 5	18. Relaxed	1 2 3 4 5	28. Neighborly	1 2 3 4 5
9. Loyal	1 2 3 4 5	19. Convincing	1 2 3 4 5	29. Assertive	1 2 3 4 5
10. Outstanding	1 2 3 4 5	20. Popular	1 2 3 4 5	30. Gentle	1 2 3 4 5



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APPENDIX C: SURVEY 3

It's time to update your Forté® profile

As you are aware, the Forté interpersonal communication system is used to identify, open and maintain lines of communication among individuals and teams.


An important part of the ongoing maintenance of interpersonal communication is knowing how you are reacting to and being perceived by others in an everchanging environment. This Forté adapting update survey will give you that information.

Please note a major change in how you respond to the survey. Think of your responses in terms of

How others expect you to act at work

The report you receive back will now be focused to this specific environment and will guide you in developing your best possible communication style. Also, you will receive updated Forté perceiver profile information concerning how you are most likely coming across to others in this environment. Page 7 of your updated Forté report will give you a communication "Prescription" which is especially useful when communicating with others in this environment.

Upon completion and return of this survey it will be processed and results returned to you as quickly as possible. As always, any suggestions you may have regarding the Forté system are welcome. Please note your ideas or suggestions on the Profile Validation page that you return following review of this upcoming adapting profile report.

Date: _____ First Name: _____ E-Mail: _____ Organization: _____ Address: _____ _____ _____	<b style="font-size: 1.2em;">Survey 3 Last Name: _____ Gender: M F Position: _____ Phone: _____ Fax: _____ ZIP/Postal Code: _____	
Circle the numbers below which best describe: <b style="font-size: 1.2em;">How others expect you to act at work		
Guide: 1-Rarely 2-Seldom 3-Sometimes 4-Often 5-Usually		
1. Competitive 1 2 3 4 5 2. Sophisticated 1 2 3 4 5 3. Tolerant 1 2 3 4 5 4. Dynamic 1 2 3 4 5 5. Serious 1 2 3 4 5 6. Responsive 1 2 3 4 5 7. Dominant 1 2 3 4 5 8. Self-assured 1 2 3 4 5 9. Loyal 1 2 3 4 5 10. Outstanding 1 2 3 4 5	11. Persistent 1 2 3 4 5 12. Bold 1 2 3 4 5 13. Esteemed 1 2 3 4 5 14. Eager 1 2 3 4 5 15. Congenial 1 2 3 4 5 16. Patient 1 2 3 4 5 17. Steady 1 2 3 4 5 18. Relaxed 1 2 3 4 5 19. Convincing 1 2 3 4 5 20. Popular 1 2 3 4 5	21. Forceful 1 2 3 4 5 22. Confident 1 2 3 4 5 23. Sympathetic 1 2 3 4 5 24. Accurate 1 2 3 4 5 25. Conventional 1 2 3 4 5 26. Charitable 1 2 3 4 5 27. Appealing 1 2 3 4 5 28. Neighborly 1 2 3 4 5 29. Assertive 1 2 3 4 5 30. Gentle 1 2 3 4 5
<div style="display: flex; justify-content: space-between; align-items: center;"> <div style="text-align: center;">  <p>THE FORTÉ® INSTITUTE</p> <p>• INTERPERSONAL COMMUNICATIONS •</p> </div> <div style="text-align: right;"> <p>3130 Wisconsin Ave., Suite 5 · P.O.Box 2543 Joplin, Missouri 64803-2543 Phone (417)781-5071 · Toll Free (800) 633-8518 Fax (417) 781-3267 or (417)781-2699 Forté Direct: (417) 781-5071 Client Services</p> </div> </div>		

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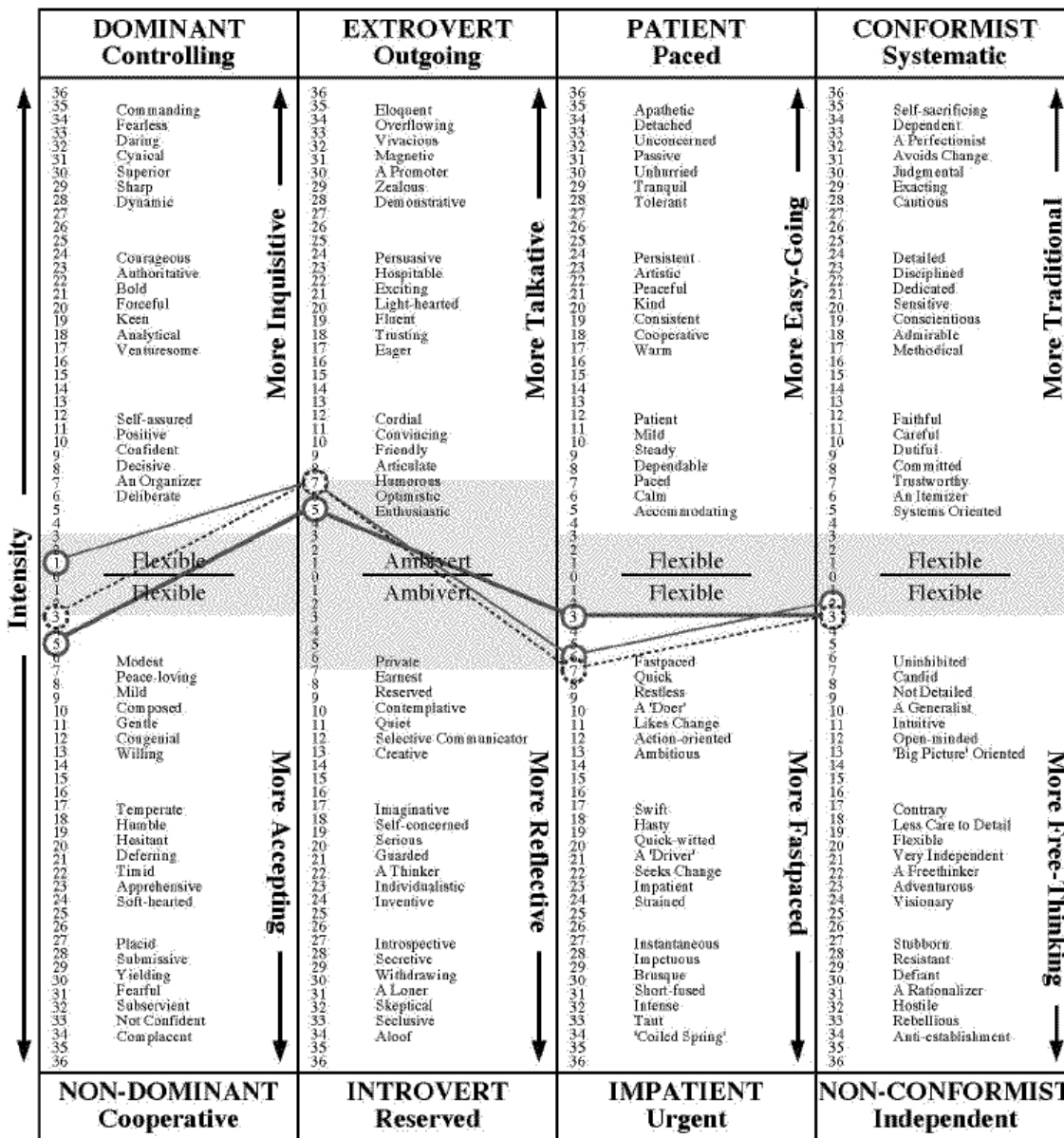
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APPENDIX D: THE FORTÉ® COMMUNICATION GRAPH DETAIL



Profile For Kay Rudisill
Adapting/Perceiver: Others at Work

Primary Profile _____
Current Adapting Profile _____
Current Perceiver Profile _____



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Profile Chart

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APPENDIX E: SURVEY INSTRUMENT PERMISSION FORM

UNIVERSITY OF PHOENIX

Permission to Use Survey Instruments

Date: June 25, 2003

Mrs. Kay Rudisill

30050 Chalet Circle
Pine, CO 80470


Thank you for your request for permission to use Forte Communication Style Profile in your dissertation. We are willing to allow you to reproduce the instrument as outlined in your letter at no charge with the following understanding.

- You will use this survey only for your dissertation and will not sell or use it with any compensated management/curriculum development activities.
- You will include the copyright statement on all copies of the instrument.
- You will send your dissertation and one copy of reports, articles, and the like, which make use of this survey data promptly to our attention.

If these are acceptable terms and conditions, please indicate so by signing one copy of this letter and returning it to us.

Best wishes with your project.

Sincerely,


C.D. Morgan III
Founder/Chairman
The Forte Institute

I understand these conditions and agree to abide by these terms and conditions.

Signed Kay Rudisill Date 2/3/04
Expected date of completion 7/2004

APPENDIX F: RESPONDENT VALIDITY STUDIES

Respondent Validity Studies

Ultimately, the criterion for any method of measuring communication style is its relevance to the goals of researchers. While it is impossible to assess the validity of an instrument for all of the potential uses to which it might be applied, an unreliable instrument cannot be expected to serve any useful purpose.

Forté takes the approach that the real validation and the ultimate refinement of the system rests with the ongoing candid responses of the subjects being profiled and their relationship to others. Following is a summary of random responses received over the period 1988 through 1992. A self-validation page is provided each respondent, so the validation is now on-going. After reviewing their individual printouts, the respondents were asked to rate the accuracy (validity) of the printout as it applied to them. The field update is scheduled for September 1995.

Responses:	% Accuracy	2,162 Random Sample	% of Total
	50 or Less	11	.5
	60 - 70	32	1.5
	70 -80	54	2.5
	80 - 90	1,849	85.5
	90 - 100	216	10.0

This would indicate that approximately 95.5% of those profiled felt that the profile was over 80% accurate regarding them, while only 4.5% felt that it was less than 80% accurate.

APPENDIX G: TEST-RETEST RELIABILITY

Test - Retest Reliability

The test-retest reliability estimates are presented here. The values are three-month retest coefficients.

Three-Month Retest Reliability	
STRENGTHS	
Primary/Self:	
Dominance	.83
Extroversion	.81
Patience	.78
Conformity	.85
Logic	.76
Adapting Environment:	
Dominance	.82
Extroversion	.80
Patience	.77
Conformity	.86
Logic	.71

The four scales have reliabilities in the .70s, and six scales have reliabilities in the .80s. The three-month retest reliabilities compare very favorably with many achievement tests. They are somewhat higher than other nationally normed measures in such tools. This process is ongoing in the Forté Lifespan System.

APPENDIX H: SPLIT-HALF RELIABILITY

Split-Half Reliability

The database was essentially divided into two halves, odd vs. even questions, for each of the 11 primary factors. For a random sample of the total population, the following reliabilities are reported:

Factor D	(Primary/Self) — $r=.913$
Factor E	(Primary/Self) — $r=.901$
Factor P	(Primary/Self) — $r=.887$
Factor C	(Primary/Self) — $r=.923$
Factor L	(Primary/Self) — $r=.862$
<hr/>	
Factor D	(Adapting & Adapting Track - Others) — $r=.889$
Factor E	(Adapting & Adapting Track - Others) — $r=.886$
Factor P	(Adapting & Adapting Track - Others) — $r=.865$
Factor C	(Adapting & Adapting Track - Others) — $r=.901$
Factor L	(Adapting & Adapting Track - Others) — $r=.804$
<hr/>	

APPENDIX I: INSTRUMENT VALIDITY

Instrument Validity

The most appropriate validity measures are validation of the constructs in Jung's theory (1933) of type. This provides a benchmark from which to grow. Two types of information have impact on the validity of the Forté instrument: (1) The structural integrity of the trait descriptions, and (2) the instrument's ability to predict communication style.

Structural integrity is a generic term including four coefficients: replicability, invariance, constancy, and stability; each of which indexes a desirable characteristic of measure. Nesselrode and Bates (1970) have formulated the concept of structural integrity which incorporates systematic style analytic procedures for establishing structural replicability, invariance, constancy, and stability. Each of the concepts is briefly described below.

- Replicability:** the extent to which a pattern, regularity, or configuration appears in essentially the same form in random samples or occasions, e.g., random replicates of individuals.
- Invariance:** the similarity of the configuration of the item structure across selected groups with varying characteristics, e.g., configurational similarity across race, sex, occupation, age, etc.
- Constancy:** the degree to which a pattern or configuration appears in essentially the same form in each quartile of the range of a measure or instrument.
- Stability:** the similarity of the pattern across two or more administrations of the instrument to the same subjects.

To determine the replicability of the style descriptions, four random sub-samples were drawn from each of the validation samples. The analytic procedure, previously outlined, was applied to each of the replicates. Each style estimation matrix was used to calculate style scores for each member of the total sample, thus yielding four separate estimates of an individual's score for each style. Correlation coefficient between style analysis score estimates from each replicate pair was computed producing six estimates of the coefficient of replicability for each style. Fisher's r to Z transformation was performed on each of the six coefficients of replicability for each style. The means and standard deviations of Fisher Z values were obtained and r equivalents of the mean Fisher Z values were computed. The forms of the Forté instrument are highly replicable with coefficients of replicability above .94 for all styles.

Since replicability across random sub-samples was demonstrated, the next concern was to investigate the invariance of the styles across race, sex, and occupation. A procedure identical to the one outlined above was applied to groups selected according to race, sex, and occupation, rather than by random selection procedure. There were four occupations (nurses, lawyers, ministers, and military), two race categories (white and non-whites) and two sex categories (males and females). Each of the styles is highly invariant across race, sex, and occupation with coefficients above .87 in all cases.

APPENDIX J: STYLE DESCRIPTORS

Self/Environmental Style Descriptors

Style description of the Primary (self) and Adapting styles follows. Each style description is positive with above line locations most characteristic of the style description.

STYLE: Dominance (Primary/Self)

Respondents located above line in Dominance view themselves as concerned with getting things done, very competitive, decisive, calculating and a risk taker. Respondents located below line tend to see themselves as modest, congenial, cautious, and not a risk taker.

STYLE: Extroversion (Primary/Self)

Respondents located above line view themselves as outgoing, friendly, optimistic and persuasive. Respondents located below line tend to see themselves as private, quiet, introspective, serious and reserved in social situations.

STYLE: Patience (Primary/Self)

Respondents located above line view themselves as relaxed, stable, likeable, and at ease with life's complexities. Respondents located below line tend to see themselves as intense, action-oriented, quick-minded, and anxious for change.

STYLE: Conformity (Primary/Self)

Respondents located above line view themselves as very precise, careful, concerned about what is "right" and dedicated. Respondents located below line tend to see themselves as very independent, free thinkers, not concerned about the "establishment," and more concerned about the big picture.

STYLE: Dominance (Adapting & Adapting Update)

Respondents located above line view the important outside environment as expecting them to be authoritative, fearless, commanding and bold. Respondents located below line believe that they are expected or trying to be congenial, deferring, and cooperative.

STYLE: Extroversion (Adapting & Adapting Update)

Respondents located above line perceive themselves as needing or being expected to be gregarious, eloquent, enthusiastic, and a good mixer. Respondents located below line are expected or trying to be creative, introspective and removed from too much people involvement.

STYLE: Patience (Adapting & Adapting Update)

Respondents located above line perceive themselves as needing or being expected to be easygoing, dependable, and relaxed. Respondents located below line perceive themselves as being expected to be hasty, quick-witted, intense, and change-oriented.

STYLE: Conformity (Adapting & Adapting Update)

Respondents located above line perceive themselves as being expected to be disciplined, dedicated, precise, and devoted. Respondents located below line perceive themselves as being or expected to be open-minded to change, unstructured, more freedom of choice and independent.

APPENDIX K: SCRIPT FOR INTERVENTION WORKSHOP

The following script will be used for purposes of explaining each of the six steps/concepts of the intervention that will be presented only to the experimental group.

Brief Explanation of Aikido

Aikido can be briefly explained as a non-competitive defensive martial art used to blend with an attacker's energy to bring them to non-violence. The blending of energy serves the purpose of redirecting negative energy into positive or neutral energy. In addition to learning mind and body awareness, Aikido is a way "to view the world holistically, how to integrate body and spirit, and how to interact with other human beings in a harmonious way" (Stevens, 2001, p. 7). Aikido comes from the combination of three terms, *Ai* referring to harmony; *ki*, which "refers to the subtle energy that propels the universe, the vitality that pervades creation and holds things together" (Ueshiba, 1992, p. 10); and *do*, which refers to the way or the path (Heery, 2003).

You will be performing six exercises based on Aikido techniques and principles. In doing the exercises, I want you to pick a partner and use that partner for one exercise then alternate partners for each additional exercise. I will let you know when to change partners. There will also be one person who performs the exercise and one person receiving the treatment. I will ask you to alternate roles so both people are able to experience the treatment. A wrist grab will consist of one person offering their hand as if in a handshake while the other person grabs the wrist from the top. A "same-side" grab is when you grab the wrist of your opponent with your hand that is on the same side as the hand they offered up for a "shake." A "cross-hand" grab will consist of grabbing the opponents opposite hand. I shall demonstrate these for you with a partner. (demo) The first exercise is a relaxation and breathing exercise. This one is without a partner.

1. Centering Exercise (by permission from Thomas Crum)

- Sit in a comfortable position in which your back can be held straight without straining.
- Close your eyes, and take some long, deep breaths through your nostrils. With each long, slow exhalation, imagine you see the tension flowing out of your body from head to toe. Do this for a few minutes until you feel relaxed and comfortable.
- Let your breathing settle down naturally to its own pace.
- Imagine you have a beam of light extending from your center through the top of your head. Picture your center as being about the size of a basketball.
- Let the light beam emanating from your center swing from side to side, taking your head and upper body with it as one unit. Let your swaying be easy and relaxed.
- After swaying back and forth for ten to fifteen seconds to establish a natural rhythm, let the swing and your center become half as large as before. Continue swaying with the same rhythm, but decrease the swing proportionately to the size of your "new" center.

- Continue in this process, every few seconds decreasing the size of the swing and of your center by half.
- Soon your body will cease to move physically, and it may be difficult to picture the actual size of your center. Simply focus your attention on the vibration of your center diminishing in size to infinity. It is the vibratory quality of the swinging “pendulum of light” following a single, infinitely decreasing point that becomes the focus of your attention. It allows for a comfortable ride inward to the source of your being.
- When extraneous thoughts come into the mind, do not fight or struggle against them. Instead, easily come back to the vibratory quality of the center becoming smaller by half...half...half...and half again, on to infinity. The vibratory quality may be perceived differently by each individual and may change within an individual periodically throughout the exercise. It may be perceived as a feeling, a sound, or an image. Allow it to take whatever form it chooses.
- Continue this process for five to ten minutes. When ending the exercise, bring your awareness back to the breath, and breathe deeply into each and every area of the body. Take a few moments to do this, as it allows you to come out of the process easily and brings your awareness back into your body and the immediate surroundings.
- Standing in a relaxed posture, clasp hands in front of you and shake them in an up and down motion, exaggerating the motion at first and slowly decrease the up and down movement until the hands are still in front of your center.

Lesson:

- This centeredness allows you to not just react to someone’s comments but to absorb them, and then come back with a response to the comment, instead of reacting unconsciously from your emotions. This allows you to create a space from which to react in a positive manner by first thinking, then responding. The difference between advanced students and beginners is the space and time created between receiving, absorbing, and responding appropriately to an attack.

2. Kokyu – breath power and good timing

- Pick a partner and stand in a comfortable position facing each other.
- Press your palms up against your partner’s palms, chest height in front of you. Apply pressure against your partner’s palms while exhaling in a long slow deep breath. Lower your hands to your side and inhale slowly; then raise your hands up against your partner’s palms once again for another exhale. Perform this exercise three times.
- Be aware of the power while exhaling. Notice how this makes you feel.
- Now perform the same exercise while inhaling instead of exhaling when pushing on your partner’s palms. Notice any differences from the feeling you had while exhaling. Notice if you feel a difference in power; which way feels stronger when you push against your partner’s palms?
- Now try the same exercise but inhale and hold your breath while pushing on your partner’s palms. Try this three times.

Lesson:

- Timing is important, when attacked you have to be able to respond with a strong and slow out breath. This applies to someone attacking you verbally or if you receive an electronic mail that upsets you. People will tend to hold their breath or inhale quickly or gasp, which makes them vulnerable to injury.

3. Shiho – universality, awareness of all angles

- Shiho means 4 in Japanese, and it is used in Aikido as awareness training in 4 directions. Usually this training is performed with the cutting of a sword in all 4 directions.
- A person can usually see 180 degrees around them without moving their head. If they turn around and face the opposite direction, they can see an additional 180 degrees. This training is considered part of “eye training” in Aikido, and it helps to develop awareness of what is going on around the person.
- Standing, face one direction, and notice your field of vision. First look straight ahead, but move your eyes around to see in all directions. Without moving your head, notice what is going on to the left and right of you, as well as up and down.
- Now, turn facing the opposite direction, and notice your field of vision in the same way as you did before. Take a moment to be aware of what is going on around you without moving your head.
- Think about how your awareness is normally during the day. Can you focus on what you are currently doing as well as what is going on around you? It is important to learn to focus your vision not just on the person you are talking to, but also to others who are directly or indirectly affected by your messages.
- Now close your eyes. Try to walk calmly around the room, without bumping into anyone. If you do encounter someone, just touch him or her softly and move away.

Lesson:

- Notice what happens to your awareness during this exercise. Does it increase or decrease? Eliminating the visual aid of body language and visual feedback from other people, notice if this exercise makes you feel unsure of yourself? Think about how you feel when you cannot see what other people are doing around you. Keep this awareness in mind when communicating online.

4. Muteiko – non-resistance, non-assertion

- Change partners and stand facing one another. Have one partner push on their opponent’s shoulder, by taking a step forward and pushing as if wanting to push through them. Notice how your partner reacts to this move.
- Now switch roles and have the other person push on their partner’s shoulder as if pushing through them. Notice how this person reacts. Did the partner resist the push on their shoulder? What could have been an alternative reaction for them?

- I will show you how this can be demonstrated using the principle of Muteiko. If I step aside and let my partner move past me, then I can look at the situation from another angle, while still maintaining my balance and center. Try this with your partner and notice the difference in feeling and resistance. Does this seem to be an easier way to communicate? Are you releasing any aggressive feelings, or does it make you more aggressive? Discuss these feelings with your partner for a moment.
- For another example of Muteiko, grab your partner's wrist with a same side grab. For the person being held, notice your reaction to the grab; then, relax into the hold your partner has on your wrist. Drop your energy to your center, and notice the difference in your partner. How do they react?
- Do you notice any change in the way they hold onto your wrist now? Does it still feel as if they are attacking you? What does non-resistance feel like?
- Reverse roles, and try this on the other person. Now, discuss the differences of before and after being centered with your partner.
- Keep in mind this feeling when moving to the next exercise.

Lesson:

- In conversation when you instantly fight back to an attack, you get a stronger counter-attack. Non-resistance does not give them something to fight back against. The attacker's attitude changes when you show non-resistance.

5. Tenkan – opening and turning, open to possibility, open-minded

- Tenkan means to change from doing something one way to another way. The movement performed in the previous exercise was a tenkan movement—stepping aside to allow the conflict to pass.
- Choose a new partner, and use a same side grab to grasp the partner's wrist. The person whose wrist is being held can try turning their hand upward in an outward semicircular wrist motion as if reaching to touch your partner's ear. Do not move your hand all the way to the ear, only a slight movement should raise your partner's shoulder and lift them off of their center. (Demo) Notice the effectiveness of this small movement.
- Bring the hand back to its original position while still holding onto your partner. The person whose hand is being held should now move slightly to the side so they are facing their partner at a 45-degree angle on the side of the hand that is being held.
- Notice the difference in strength in your partner's arm from the original position. This move may not take your partner off of their center, but it can move you to another possibility that may allow you additional opportunities. This is a way to change your position and allow new opportunities to happen.

Lesson:

- Now think of the application to communication. If you are open to possibilities, then you can better understand what the other person may be experiencing. It

means having the knowledge to do something differently. This is the same in conversation where you need to be able to explain the situation back to the person and change the conversation to what works for you. Being open to another way of expressing yourself.

6. Irimi – entering and blending, going to the source of conflict

- Many people tend to avoid conflict, but if we go to the source of conflict, then it is easy to offset the opponent's balance because they do not expect someone to enter into their space.
- Ikkyo is a form of irimi. Choose a different partner and grab your partner's opposite wrist. Now, the person who is being held should be able to swing their arm in an inward and upward motion of Ikkyo. When the arm is up above the person's head, enter in next to them and face the same direction they are by leading them forward with your free hand on their elbow. (Demo)
- This creates an opening in which you can enter their space, throw the opponent off center, and then blend with their energy to lead them your way.

Lesson:

- It is necessary to overcome this fear of entering into conflict. In terms of communication, the conflict may not be what we expected; it may just be a simple misunderstanding. However, if we avoid it, then we can never find out what is at the source of this conflict and what is the real reason for its existence.
- Now one partner attacks the other with shomenuchi, a blade like hand to the top of the head, while stepping forward with one foot. The person being attacked can move to a 45-degree angle to either side by swiveling their hips and pivoting on their heel. (Demo) Then they can perform the same attack on their opponent. This allows them to enter into the partner's space but avoiding the line of conflict. (H. Ikeda, personal communication, October 8, 2003)

APPENDIX L: INFORMED CONSENT FORM

UNIVERSITY OF PHOENIX

INFORMED CONSENT: PARTICIPANTS 18 YEARS OF AGE AND OLDER

Dear _____,

I am a student at the University of Phoenix working on a Doctor of Management in Organizational Leadership degree. I am conducting a research study entitled, *The Effect of Aikido Training On Computer-Mediated Communication Between Virtual Teams*. The purpose of the research study is to measure changes in interpersonal communication style and strengths as outcomes of awareness training through the art of Aikido, and how this training may or may not influence one's computer-mediated communication style among regional virtual workgroups in a sales and services company in the United States.

Your participation will involve completing one less than 2-minute online survey prior to participating in a workshop based on Aikido techniques. After 30 days, you will be notified via electronic mail to complete another 2-minute online survey. If you choose not to participate or to withdraw from the study at any time, you can do so without penalty or loss of benefit to yourself. The results of the research study may be published, but your name will not be used and your results will be maintained in confidence.

In this research, there are no foreseeable risks to you except none.

Although there may be no direct benefit to you, the possible benefit of your participation is increased awareness that may improve or benefit your online communication within workgroups via electronic mail or chat mail.

If you have any questions concerning the research study, please call me at (303) 816-1305.

In the event that a questionnaire is returned without a signature, return of the questionnaire will be considered the subject's consent to participate.

Sincerely,

Kay C.A. Rudisill

APPENDIX M: PERMISSION TO USE COPYWRITTEN MATERIALS

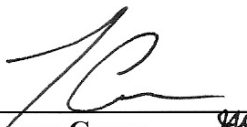
UNIVERSITY OF PHOENIX

Informed Consent to Use Copywritten material from
"The Magic of Conflict"

Aiki Works, Inc.

 Organization

I hereby authorize Kay Rudisill, student of the University of Phoenix to use the copy written material on page 67 of The Magic of Conflict by Thomas Crum (Simon and Schuster) for her doctoral dissertation entitled: The Effect Of Aikido Training On Computer-Mediated Communication Between Virtual Teams. I also understand that she will publish her dissertation on ProQuest Information and Learning, and that they may supply copies of her dissertation on demand.



 Thomas Crum
 Signature

 date

 7/11/05

 CEO

 Title

APPENDIX N: COLLABORATION AMONG INSTITUTIONS

1344 Crossman Avenue
Sunnyvale, CA 94089
tel 408.744.9500
fax 408.744.0400
www.hyperion.com

December 1, 2003

Office of the Provost/Institutional Review Board
University of Phoenix

Regarding: Letter of Collaboration Among Institutions

Dear Sirs:

This letter acknowledges that Hyperion Solutions Corporation is collaborating with Ms. Kay C.A. Rudisill, enrolled in the Doctor of Management program at the University of Phoenix, in conducting certain proposed research. We understand the purpose of this research is to determine the degree to which an Eastern philosophy of self-awareness model influences online communication, interaction through e-mail and chat mail, among regional virtual teams, and will be conducted under the supervision of Dr. Michael Vandermark.



Sincerely:

W. Russell Wayman
Vice President and General Counsel

cc: Abraham E. Danziger, VP Client Services, Hyperion Solutions Corporation

Hyperion Solutions Corporation

APPENDIX O: RAW DATA COLLECTED

Subject #	C = 0 E = 1	Primary Profile				Adapting Pretest				Adapting Posttest				Perceiver Pretest				Perceiver Posttest			
		DOM	EXT	PAT	CON	DOM	EXT	PAT	CON	DOM	EXT	PAT	CON	DOM	EXT	PAT	CON	DOM	EXT	PAT	CON
1	1	-8	8	6	-5	5	3	2	-4	-1	6	-8	8	-2	5	3	-5	-6	6	-5	-1
2	1	-6	-7	3	7	12	7	-11	2	10	7	-9	7	5	3	-4	5	3	2	-6	7
3	1	8	16	-8	-16	11	12	-5	-11	12	7	-12	-2	11	16	-9	-16	10	15	-14	-9
4	1	15	19	-2	-18	14	10	-14	-7	14	7	-13	-3	14	16	-12	-15	14	15	-12	-14
5	1	-9	10	8	-10	3	7	-5	-7	-7	7	0	-2	-4	10	3	-10	-9	10	6	-7
6	1	-5	11	9	-11	4	4	7	-6	7	6	-1	-6	1	10	9	-9	2	11	3	-10
7	1	-7	-11	12	-8	-1	15	-14	-8	-5	13	-12	6	-3	5	0	-5	-3	2	0	3
8	1	-20	-6	20	7	2	14	-13	1	-11	11	-3	6	-8	8	0	6	-11	11	11	10
9	1	-1	-2	3	-1	8	11	-11	5	1	1	-1	1	6	6	-6	1	2	1	-1	-2
10	1	-13	-5	14	-9	12	-7	-12	2	8	9	-9	4	4	-3	3	-1	-2	3	2	-2
11	1	10	2	-4	-10	7	13	-13	13	2	13	-12	4	11	11	-10	5	6	10	-10	-2
12	1	-4	6	-6	7	8	9	-8	3	0	-10	-16	16	4	8	-7	5	2	3	-9	10
13	1	-10	-5	11	-1	-6	6	-6	5	-10	10	-7	-1	-5	4	5	6	-6	7	5	5
14	1	-2	3	-1	1	-10	-2	-7	11	-12	-8	-10	12	-5	4	-2	5	-6	-1	-3	7
15	1	-5	12	-12	-8	-1	14	-13	-4	13	15	-15	3	-4	15	-14	-7	5	17	-16	-2
16	1	15	13	-1	-14	-3	16	-15	11	-11	11	-1	-2	2	13	-13	-6	-2	11	-3	-10
17	1	9	4	2	-9	2	6	-5	-4	2	3	-2	3	7	7	-2	-6	4	3	-2	-4
18	1	-7	7	-2	-1	-3	-1	13	-12	-8	9	-1	-9	-5	6	1	-5	-9	9	-5	-6
19	1	-12	-11	12	8	10	17	-17	-10	10	17	-17	-10	2	5	-4	-1	2	5	-4	-1
20	1	-1	7	8	-7	5	-4	-5	-4	5	-5	-2	-2	3	5	0	-5	3	-1	4	-3
21	1	-17	9	18	-1	-6	-3	-7	7	-3	3	-1	3	-8	9	9	8	-9	10	10	3
22	1	-4	-3	11	-11	6	12	-11	6	-3	7	-7	3	0	5	-2	-5	-3	4	1	-3
23	1	-2	6	0	-6	-3	7	-7	3	-5	5	6	-2	-3	7	-6	-2	-5	5	2	-5
24	1	-2	1	3	-1	5	11	-11	-5	12	10	-12	1	3	7	-6	-2	6	6	-6	-2
25	1	-1	-5	2	6	16	13	-15	-7	6	10	-9	6	12	6	-11	-1	3	3	-6	6
26	1	-6	-9	-4	10	1	11	-10	-1	-1	9	-7	-8	-1	3	-8	8	-1	4	-4	4
27	1	-2	3	-3	1	-7	7	-5	-2	4	8	-7	3	-6	6	-5	-1	3	6	-5	4
28	1	-7	7	8	-4	-1	-1	2	2	1	4	-3	4	-4	5	4	-1	-5	6	2	-1
29	1	15	6	6	-14	14	10	-13	4	2	6	-5	-1	10	5	-8	-9	8	6	-1	-8
30	1	2	-1	-2	-2	4	4	3	-3	5	-4	0	-5	3	2	2	-3	4	-3	-1	-4
31	0	-1	-3	4	1	7	8	-9	10	-10	1	10	11	1	1	-6	6	-4	2	3	4
32	0	2	-6	6	-2	-3	11	-10	-1	-5	9	-9	0	-1	3	-2	-1	-2	2	-1	-2
33	0	5	4	13	-12	6	8	-4	-8	9	-8	6	5	6	9	4	-8	4	-4	5	-5
34	0	20	8	-14	-20	5	11	-11	2	4	10	-9	10	14	12	-13	-11	13	11	-12	-3
35	0	3	2	-2	-3	6	14	-13	-3	2	1	-9	9	3	10	-10	-5	5	5	-4	4
36	0	-7	-5	7	-1	11	22	-22	4	8	12	-11	6	2	9	-9	-1	1	3	-2	1
37	0	4	-4	3	1	-3	3	-3	2	6	3	-6	-6	0	0	-1	1	3	-2	-3	-3
38	0	-8	9	3	-7	-9	16	-16	-7	6	17	-16	8	-11	12	-12	-8	-3	13	-12	-1
39	0	10	17	-4	-16	13	10	-12	-1	12	7	-11	-5	11	13	-12	-11	11	14	-10	-13

Subject #	C = 0 E = 1	Primary Profile				Adapting Pretest				Adapting Posttest				Perceiver Pretest				Perceiver Posttest			
		DOM	EXT	PAT	CON	DOM	EXT	PAT	CON	DOM	EXT	PAT	CON	DOM	EXT	PAT	CON	DOM	EXT	PAT	CON
40	0	-17	18	15	4	15	13	-14	13	13	9	-12	6	-9	10	-10	0	-8	8	-7	-3
41	0	3	9	10	-9	-12	-1	-3	13	-5	5	4	4	-5	5	2	-4	-3	6	4	-5
42	0	14	16	-9	-15	-2	12	-12	6	16	16	-15	2	4	15	-14	-5	15	17	-17	-8
43	0	9	10	-5	-9	14	13	-13	-1	-4	10	-9	5	11	12	-11	-8	1	10	-10	-7
44	0	10	12	-12	-12	7	-2	-3	-6	8	-1	-3	-7	10	8	-7	-10	10	7	-7	-9
45	0	14	13	-14	-4	11	12	-11	-5	9	12	-11	-6	13	14	-13	-6	13	15	-14	-5
46	0	-10	-13	14	-4	-1	-4	-5	5	-1	-4	-5	5	-3	-6	6	4	-3	-6	6	4
47	0	5	-9	7	10	6	9	-8	1	-7	4	13	-12	5	1	-4	2	-2	-1	2	-2
48	0	10	6	8	-10	4	5	-5	0	6	10	-10	7	5	5	0	-5	6	6	-5	-2
49	0	10	18	-11	-17	14	13	-14	-13	6	14	-13	14	11	17	-16	-17	7	15	-15	-8
50	0	-12	-7	12	-11	6	10	8	-10	11	12	-12	2	-1	3	11	-11	2	5	-4	-3
51	0	-4	4	11	-11	7	8	-8	1	10	11	-11	2	3	7	3	-6	3	8	-3	-7
52	0	9	4	2	-8	11	9	-10	9	3	-4	-1	5	9	5	-8	1	3	1	-2	-3
53	0	-14	-9	14	10	-8	1	8	-7	-2	-5	6	-2	-12	-2	13	-1	-8	-9	10	4
54	0	-3	2	4	-4	8	4	-2	-8	6	-8	-8	8	4	4	4	-3	3	-2	2	-1
55	0	8	12	4	-12	19	18	-19	5	8	12	-12	7	11	16	-16	-7	6	11	-10	-3
56	0	15	10	1	-14	7	-9	0	9	-3	-3	2	3	6	-4	-5	-6	6	4	1	-6
57	0	3	-1	-3	4	3	9	-11	11	-2	7	-7	7	5	7	-7	6	1	5	-6	6
58	0	2	-1	-1	-1	8	7	-7	-2	-1	3	-2	-1	6	5	-6	-2	3	3	-2	-1
59	0	-9	9	-3	-8	12	11	-11	8	12	7	-7	-11	1	10	-10	0	2	10	-7	-10
60	0	-3	-8	8	8	12	10	-12	10	-1	5	-10	10	4	-1	-5	6	-5	-4	-5	5
61	0	-2	-7	7	-1	7	13	-13	5					4	6	-5	1				
62	0	7	-6	-1	-2	-4	7	-6	7					1	1	-4	5				
63	0	-4	1	8	-8	5	9	-8	-1					1	5	-2	-5				
64	1	-1	-9	10	-1	8	9	-8	9					2	-1	-2	2				
65	1	7	2	-7	3	14	13	-14	-7					11	9	-10	-1				

APPENDIX P: EXPERIMENTAL GROUP PRETEST AND POSTTEST

The Forté® Institute

May 19, 2005

Interpersonal Communication Solutions

11:55 a.m.

Forté Team Builder System

Communications Online - Experimental - Composite Report

This profile data included 30 individuals

PRIMARY

Dominant	23%		77%	Non-Dominant
Extrovert	63%		37%	Introvert
Patient	63%		37%	Impatient
Conformist	26%		74%	Non-Conformist

This profile data included 30 individuals

ADAPTING

Dominant	66%		34%	Non-Dominant
Extrovert	80%		20%	Introvert
Patient	16%		84%	Impatient
Conformist	46%		54%	Non-Conformist

PERCEIVER

Dominant	56%		44%	Non-Dominant
Extrovert	96%		4%	Introvert
Patient	40%		60%	Impatient
Conformist	30%		70%	Non-Conformist

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May 19, 2005

Interpersonal Communication Solutions

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Forté Team Builder System

Communications Online - Experimental - Composite Report

This profile data included 30 individuals

PRIMARY

Dominant	23%		77%	Non-Dominant
Extrovert	63%		37%	Introvert
Patient	63%		37%	Impatient
Conformist	26%		74%	Non-Conformist

This profile data included 30 individuals

ADAPTING

Dominant	60%		40%	Non-Dominant
Extrovert	86%		14%	Introvert
Patient	10%		90%	Impatient
Conformist	53%		47%	Non-Conformist

PERCEIVER

Dominant	53%		47%	Non-Dominant
Extrovert	90%		10%	Introvert
Patient	36%		64%	Impatient
Conformist	33%		67%	Non-Conformist

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APPENDIX Q: CONTROL GROUP PRETEST AND POSTTEST

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Forté Team Builder System

Communications Online - Control - Composite Report

This profile data included 30 individuals

PRIMARY

<i>Dominant</i>	63%		37%	Non-Dominant
<i>Extrovert</i>	63%		37%	Introvert
<i>Patient</i>	63%		37%	Impatient
Conformist	23%		77%	Non-Conformist

This profile data included 30 individuals

ADAPTING

<i>Dominant</i>	76%		24%	Non-Dominant
<i>Extrovert</i>	86%		14%	Introvert
Patient	10%		90%	Impatient
Conformist	56%		44%	Non-Conformist

PERCEIVER

<i>Dominant</i>	76%		24%	Non-Dominant
<i>Extrovert</i>	86%		14%	Introvert
Patient	26%		74%	Impatient
Conformist	30%		70%	Non-Conformist

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Interpersonal Communication Solutions

9:56 a.m.

Forté Team Builder System

Communications Online - Control - Composite Report

This profile data included 30 individuals

PRIMARY

<i>Dominant</i>	63%		37%	Non-Dominant
<i>Extrovert</i>	63%		37%	Introvert
<i>Patient</i>	63%		37%	Impatient
Conformist	23%		77%	Non-Conformist

This profile data included 30 individuals

ADAPTING

<i>Dominant</i>	63%		37%	Non-Dominant
<i>Extrovert</i>	76%		24%	Introvert
Patient	20%		80%	Impatient
Conformist	73%		27%	Non-Conformist

PERCEIVER

<i>Dominant</i>	70%		30%	Non-Dominant
<i>Extrovert</i>	76%		24%	Introvert
Patient	26%		74%	Impatient
Conformist	23%		77%	Non-Conformist

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