

ABSTRACT

TREDWAY, RON, A Merger Case Study of Learning and Change: Exploring the Relationships Between Learning Styles and Change Orientation to Enhance Learning Interventions. (Under the direction of Paula K. Berardinelli)

This exploratory case study investigated the relationships between change orientation [readiness] scores and learning styles, of individuals within an organization undergoing complex change – mergers and acquisitions (M&A). The intent to understand where a learning intervention could be applied in a prioritized manner, in the area of greatest need – low change readiness, and most dominant learning style, was achieved. The study therefore adds to the change integration, and M&A literature, an exploration of individual change and learning tendencies and their collaborative use in intervention design and development, within an observed M&A environment; a medium-sized east coast company in the health sciences profession.

Understanding change readiness and ways to positively influence change outcomes in organizations dealing with complex change remains a strategic factor in helping organizations realize synergies and achieve competitive advantage, especially in M&A environments. While learning interventions continue to be a primary strategy used by change organizations to influence effective change results, these organizations seek intervention efficiency and effectiveness. Learning interventions based on learners' [change recipients'] learning styles, helps ensure learning acceptance and application, which enhances organizational change integration.

Quantitative and qualitative data collection and analysis were included in the study design. Quantitative change and learning data were collected through an online survey, with items adapted by permission from the Organization Change Orientation Scale (Jones and

Bearley, 1986) and the Learning Style Inventory (Kolb, 1999), and analyzed using SAS 8.0 GLM. Qualitative data were collected through interviewing 10 randomly selected change recipients from the organization using a metaphor elicitation technique, and analyzed through coding to understand cultural norms, employee learning needs, organizational goals, and perception of the acquisitions.

Investigation involved; 1) determination of the critical learning needs perceived by organizational managers and non-managers to ensure successful acquisition integration, 2) the identification of change readiness scores and learning styles of change recipients, 3) determination of how these scores and styles were distributed across the population investigated, 4) assessment of the relationships between change readiness scores and the individual learning styles among change recipients in the organization, and 5) assessment of the relationships between change readiness scores and demographic variables - organizational entities, gender, age, race, function, management, and job change.

Concluded from the analysis, three frequently mentioned learning needs for acquisition integration were identified, supporting evidence of need for ongoing intervention development. Supporting intervention prioritization, one or more significant differences were found on each of the research questions. Change readiness scores of the original organization were significantly lower than the latest acquisition, and change recipients with the Converging learning style had significantly lower change readiness scores than those with the Accommodating learning style. Low readiness scores were also found among Males, Caucasians, and technical job functions such as IT-Programmers, while high readiness change scores were found among females, managers and change recipients over age 45.

The conclusions of this study have implications for understanding the change readiness level and learning style of change recipients simultaneously, as a technique for prioritizing and enhancing the development of learning interventions during complex organizational change. Three learning interventions were warranted in this situation, and learning intervention prioritization and development suggested for the organization based on these findings. Benefits to human resources, human resource development, organization development and line management leaders are implied, suggesting further application and research opportunities.

**A Merger Case Study of Learning and Change: Exploring the Relationships Between
Learning Styles and Change Orientation to Enhance Learning Interventions**

by
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A dissertation submitted to the Graduate Faculty of
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in partial fulfillment of the
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Training and Development

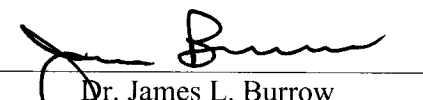
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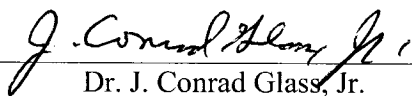
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Biography

Ron Tredway is a human resources and organizational development consultant with over twenty years of professional practice in multiple organizations. His involvement in starting, developing, reengineering, merging and acquiring, and shutting down business functions, has spanned military, telecommunication, banking, pharmaceutical, engineering, aviation and other organizations. Ron holds a Senior Professional in Human Resources (SPHR) certification from the Human Resources Certification Institute, and has served as an adjunct faculty instructor for three different universities in undergraduate, graduate, and continuing education programs associated with human resource management and organizational effectiveness over the last ten years.

Ron was born in Stuttgart, Germany to military parents who later settled in North Carolina. After graduating from Hayesville High School in western North Carolina, he too served in the military as an aviation electronics technician, supervisor and training manager. Subsequently Ron held several corporate positions of responsibility in human resources and line-management functions, before launching full-time into a consultative practice.

A passion for learning and leadership, as well as the development of others sparked Ron's educational pursuits to earn a B.S. in Business Administration from North Carolina Wesleyan College, and a Masters in Business Administration (M.B.A.) from Campbell University, and ultimately this doctoral program in Training and Development. All three were completed while working full-time.

Following his doctoral completion, Ron plans to continue helping organizations improve their human performance, especially around change efforts. His endeavors are intentionally aimed at balancing his spiritual development, family interaction, consulting service, and adjunct contribution.

Ron currently resides in Raleigh, North Carolina with his wife Cathy, and two youngest sons, Kyle and Scott. Their oldest son Aaron lives near Atlanta, Georgia.

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Chapter 1: Introduction

People are dealing with change in organizations all the time (Burke, 2002) and with increased intensity and complexity (Senge, 1990). Effective integration of frequent and complex organizational changes relies on human readiness to change (Burke, 2002), and the way in which the people involved learn what is needed, learn how they influence the change integration content and process, and learn how to make the change work (Burke, 2002).

Learning is inherent in the change process (Rajagopalan and Spreitzer, 1997) where organizations are integrating new processes, programs, technologies, structures, or other similar changes. Whether learning to cope with the agony of a downsizing requirement, or learning critical new steps of a reengineered customer relationship management process, or learning how to realize synergies from integrating two distinct organizations following a merger and acquisition (M&A), the individual learning focus is important to achieving successful organizational outcomes (Marks, 1994). According to Marks (1994), such learning is needed throughout the period following a merger announcement until full integration is realized.

Learning interventions influence change readiness of the change recipients (Marks, 1994), that is, those affected or impacted by the change in the organization. Individual change readiness is enhanced by; 1) knowledge of the change effort, 2) opportunity to reflect on the personal benefits and detriments of the change, and 3) opportunity to develop new knowledge, skills and attitude needed for successful performance following the change (Marks, 1994; Senge, 1990). All three of these change guidelines may be used for creating

specific interventions that consider needs and perspectives at the individual level, and can be aggregated toward a group norm for organizational assessment.

Learning interventions are most effective when individual learning styles are applied to the design and development of the interventions (McLoughlin, 1999). This helps ensure the needs and application of learning material match with the cognitive styles of those engaged in the learning process during the change integration. Matching style to the development of critical learning materials increases the usability of material (McLoughlin, 1999), and may have a positive effect on individual change readiness, based on how recipients perceive the change (Senge, 1990).

Effective learning interventions applied in organizations experiencing change lead to more effective change integration. Applied learning is realized in organizational results. When the results being measured are related to the change occurrence, then the applied learning produces positive change outcomes or behaviors (Marks, 1994), which help indicate successful change integration. When learning interventions are not effectively applied, organizational results are negative, meaning the financial goals are often missed, the products don't perform as well as expected in the market, and customer loyalty often diminishes (Marks, 1994).

Problem Statement and Background

Understanding relationships, if any, between learning styles and change readiness scores among individuals in an organization experiencing complex change, such as a corporate acquisition, may enable strategic development of learning interventions using Mark's (1994) three guidelines that enhance change integration. Such understanding could

offer insights that help human resource developers of learning or training interventions, prioritize design and development requirements, such as materials and delivery methods, and perhaps offer insights for new approaches to development specific to change integration actions for organization development professionals.

Burke (2002) has described change readiness theories, techniques, and measures of success. Galpin (1996), like Burke (2002), has further explored the human impact of change, and ways to address organizational issues such as achieving critical mass, that is, achieving enough human acceptance and buy-in by the change recipients that the change can occur with expected business results. Jones and Bearley (1986) associated change readiness with individual change behaviors they called change orientation. French and Bell (1984) have linked change and learning at the organizational level, to explain key attributes of the change process and key measures of human performance. Robbins (1997), and Bowditch and Buono (1997) have linked cognitive style, perception, and personality typing to individual change readiness. Kolb (1984), who developed and tested experiential learning theory and individual learning styles within an organizational context, also linked learning styles to learning intervention development supporting performance improvement outcomes [integration]. Yet the key thematic link between change readiness and individual learning style has not been empirically explored.

Developing learning interventions for all the major learning styles is theoretically desirable, in most learning situations. However, sometimes the resources, such as development time, activity variety, technology enablers, etc. are not available or cost effective for comprehensive development, especially during a merger. While it may be preferable to have a comprehensive learning styles approach (McCarthy, 1996) in

developing materials, activities and approaches (McLoughlin, 1999), could a method for determining design and development priorities be beneficial to curriculum designers, developers, and evaluators?

The Purpose and Questions

The purpose of this study was to examine the relationships among individual change orientation [readiness] scores, individual learning styles as a measure of new information processing, and select demographic attributes, of individuals within an organization undergoing complex change – mergers and acquisitions. The relationships found, are used to suggest development prioritization and activities of learning interventions, and to recommend possible OD/change interventions for the organization observed. This study therefore, adds to the change integration, and merger and acquisition literature, an exploration of individual change and learning tendencies and their collaborative use in intervention design and development, within an observed merger and acquisition environment.

Research Questions

The research questions investigated were as follows:

1. What are the critical learning needs perceived by organizational managers and non-managers to help ensure successful acquisition integration?
2. Is there a significant difference between Org1 (the original organization) and each of the other organizational entities with respect to their mean change readiness scores?
3. Is there a significant difference between four groups of change recipients, Accommodating, Diverging, Assimilating, and Converging, with respect to their change readiness scores?
4. Is there a significant difference in mean scores between learning style groups and the three aspects of change orientation?
5. Is there a significant difference in change readiness and impaired scores between the demographic groups of gender, age, race, job function, manager, and job change?

By investigating the relationships between learning styles and change readiness, this researcher sought to understand if there was an observable trend of one learning style having a higher, or lower, level of readiness associated with it among the population, which could be useful in suggesting learning intervention development, or prioritization of development for learning interventions. The conceptual framework is depicted as follows:

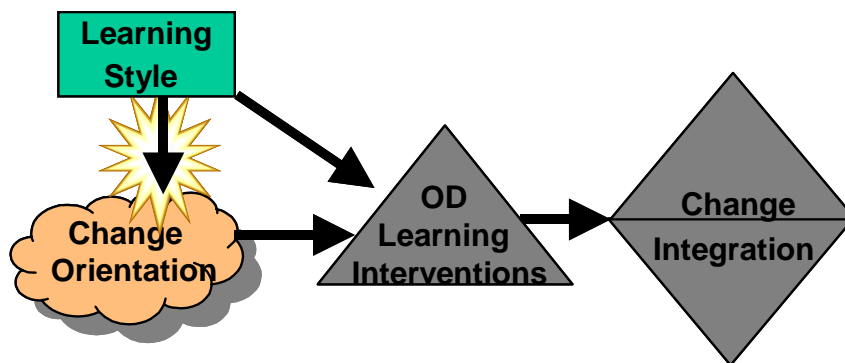


Figure 1.1 Conceptual Model-Organizational Change and Learning

Investigating the relationship between change readiness scores and the target and acquiring entities adds to the merger and acquisition literature on how individuals reacted to change in this particular context, and provides a framework for other such studies.

Investigating the relationship between change readiness scores and learning styles prevalent in the merger organization enables concise focus of learning intervention development, adding to the literature on training, organization learning, and organization development.

The demographic variables were investigated based on evidence of their importance found in the merger, change, and learning literature, as described in the literature review.

Limitations of the Study

The study focused on the relationships between the specific responses of change recipients in a merger organization on two defined instruments. Further, the investigation was aimed at examining the individual responses to learning styles and change readiness at one point in time. The intent was to understand where a learning intervention could be applied in a prioritized manner, that is, prioritized for application in the area of greatest need – low change readiness, and most dominant learning style.

Assumptions

Learning styles research describes the historical acknowledgement of learning styles as a variation on cognitive styles, which serves to reflect certain human characteristics inherent in the learning process, individually and within organizations. The use of a learning styles assessment instrument serves to identify key learning characteristics of change recipients useful in identifying preferred ways of information processing. This enables greater effectiveness presentation of strategic change goals and is relevant for the design and development of learning intervention material beneficial to the change integration.

The use of a change orientation assessment instrument serves to identify individual change recipient perception of change, and the recipients' self-reported behavior during the organizational change. Using the change orientation scores derived from the assessment, allows for both composite characterization of the group norms, and for identification of critical behavior characteristics that could be addressed during the development of learning interventions. A learning activity on behaviors associated with human resistance to change, using personal experiences from change recipients was one possible example.

Change integration, while distinctly different for each organization, represents the collage of organizational results associated with completing the change as specified and planned. The variety of ways to identify, to assess or measure, and to report the actual results of the organizational change effort are beyond the scope of this study.

Significance of the Study

Learning interventions that match learners' needs and are subsequently applied by those learners to daily job tasks and activities in organizations enable organizations to achieve optimal goals and gain competitive advantage. Such goal achievement and competitive advantage gain are key to successful organizational change efforts. By understanding the relationships between learning styles and change readiness of the change recipients, learning interventions can be developed in ways that more effectively match the learners' needs.

While other research has investigated individual learning styles (Kolb, 1984), change readiness attributes (Orth, 2002), change intervention goals and measures (Halmo, 2001; Hurd, 2001), and the linkage between learning styles and learning interventions (Silvey,

2002), no study was found that explored the relationships between learning styles and change orientation [readiness] scores of individuals experiencing organizational change. The outcomes of such a study, provides useful information for organizational leaders, organization development (OD) professionals, and instructional designers creating learning interventions that more closely align with the instructional style needs of the change recipients. The outcomes may also be useful in prioritizing development of materials and activities to support increased readiness levels in the change process.

Definition of Terms

The following terms used in the literature are included in this study. The reader may find that within each term some distinctions are identified between different authors, while carrying a contextually same or similar meaning.

Change integration – is the term used to describe a completed change, where the goals set forward by the organization are sufficiently met, and the organization is able to declare the organizational change (change effort) complete. While this implies all stated objectives and goals are met (Burke, 2002), there may be some objectives that are ongoing measures, beyond the scope of the change completion. An example might be a merger, where specific goals are set for the completion of structure changes, product portfolios being combined, and customer markets exploited based on the asset and capabilities of the two or more companies coming together. These completed goals may mark the “integration” of the change, while other business results, called synergies (Connor, 1992) expected of the merger may take several years to achieve. Change integration therefore suggests ‘project end’ for the organizational change. The term change implementation (French and Bell, 1984;

Carnall, 1991) and transformation (Senge, 1990; Carr, Hard and Trahant, 1996) are found to be used with the same meaning.

Change orientation – tendencies of individuals to behave in predictable ways in response to change within a contextual framework, e.g.: organization after merger announcement (McKee, 2000; Jones and Bearley, 1986).

Change process – relates to the steps or phases an organization, and therefore the individuals in it, go through in the transition from the current state, or status quo, to the desired future state, as envisioned to be how things are supposed to be after the change (Carr, Hard, and Trahant, 1996; Connor, 1992; Lewin, 1958).

Change readiness – describes the level of commitment by members of the organization, or change recipients, to fully implement the change process in such a way that the desired state is internalized in the daily behaviors of the organizational members. The opposite is resistance (Connor, 1992; Carr, Hard, and Trahant, 1996).

Change Recipient – is an individual involved in the change process in a way that makes her or him vulnerable to the outcomes of the organizational change. For example, the user of a new computer system would be vulnerable to new skills requirements. A middle manager, for example, could be vulnerable to an organizational restructuring change targeting level reduction and communication improvements.

Learning intervention – describes a type of organization development action, called intervention, which focuses on the learning needs of the individuals within the organization, for the purpose of improving organizational performance (French and Bell, 1984).

Learning styles – are categorical descriptions of how individuals learn, process new knowledge, and represent information (McLoughlin, 1999). According to McLoughlin

(1999), many researchers see learning style as a coherent whole that learners employ in their learning orientation, which may be attributed to underlying differences in personality and cognitive functioning. Kolb (1999a) offers a measure of four learning styles useful in identifying differences in learning needs among organizational members.

Organizational change – describes a set of activities or actions by the organization and its members, to embark upon a change in some aspect of the organization to meet strategic objects of the business. Examples include structural changes, technology changes, process changes, product portfolio diversification changes, leadership changes, policy and practice changes, and cultural changes (Burke, 2002).

Structural changes, which modify reporting relationships among the people in the organization, may appear in downsizing, restructuring, or revitalizing terms, while the intent is the same...move people in, out, or around. Technology changes are typically denoted by major equipment and/or software installations into the organization to enable or support the strategic business objectives. Process changes are often discussed as reengineering of business processes, to streamline process steps for greater efficiency in meeting strategic business goals (Carr, Hard, and Trahant, 1996). Merger, as a type of complex change, tends to involve combinations of these changes (Burke, 2002).

Acquisition - is the legal and accounting term for one business purchasing another, or its controlling interest (Gaughan, 1996) for the sole purpose of using its assets (market channel, supply chain, etc.) in its own business structure. When joint agreements are reached early in such a deal to foster the use of the best processes, methodologies and leadership from each of the two business organizations, it is commonly referred to as a merger (Collis

& Montgomery, 1997). However, some organizations, like the one in this study, prefer using the acquisition terminology.

Effectiveness - is defined in this study as the ability of the individual or organization to deliver on commitments in a timely manner to meet the strategic business requirements of the organization at the least cost and highest possible quality standard to maintain a competitive advantage. In other words, doing the right thing as well as doing things right (Bowditch & Buono, 1997), are both important.

Merger – A term used conclusively to describe the action taken to bring two distinct and separate organizations of different financial corollaries together into a single unit of shareholder equity (Robbins, 1997). The financial distinction is made relative to generally accepted accounting principles (GAAP), where the separate organizations are recognized by investment and taxation entities as having solely separate and distinct assets and liabilities for the purpose of sustaining individual portfolios in their organizations' mission. They may or may not be publicly traded at the time of their merger, although almost all historical cases reflect at least one out of the two to be publicly traded on a major stock exchange (Robbins, 1997; Gaughan, 1996).

Merger and acquisition, or M&A - is used interchangeably within the context of this definition, where M&A represents the full literary term found in research and writings throughout the business community, for bringing distinct business enterprises together. Merger has a sense of friendliness, acquisition a sense of distaste (McKay and Qureshi, 2001) in larger organizations, while acquisition is respected among medium to small organizations, such as the one in this study.

Target – another term used to describe the company being acquired. The term is most familiar since the early 1980s when multiple simultaneous deals were being investigated, as a way to quickly grow a business. The “target” of an investigation for possible buy-out was considered fitting of the definition, whether acquired or not. A variation of this terminology was found among the literature for the company studied, where the language “sought” referred to the targeted organizations (Collis and Montgomery, 1997; Robbins, 1997; Gaughan, 1996).

Chapter 2: Literature Review

This study is focused on examining the relationships between learning styles, as a measure of individual learning differences across an organization, and change readiness measured by individual change orientation, within an organization change environment – M&A. The literature reviewed as relevant to this study includes writings and publications specific to organization change, human reaction to change as it relates to individual and organizational readiness, organizational change interventions, learning theory, learning interventions as they relate to achieving organization change, and learning styles. Given the focus on merger type change, literature on merger and acquisition concepts is reviewed.

Organization Change

Organization change is as old as organizations and their formations (Burke, 2002). The first organization change found in the Old Testament (The Holy Bible, 1984) reflected the establishment of a pyramidal organization. Having led the Israelites in their escape from the tyranny of the Egyptian pharaoh, Moses as leader of the people dealt with many social system issues (Burke, 2002), and had thousands with direct access to him. Following the suggestion of Jethro, his father-in-law, they reorganized the distribution of labor to assist Moses in focusing on higher-level strategic matters. The Holy Bible (1984) states,

“What you are doing is not good. You and these people who come to you will only wear yourselves out. The work is too heavy for you; you cannot handle it alone... You must be the people’s representative before God and bring their disputes to Him. Teach them the decrees and laws, and show them the way to live and the duties they are to perform. But select capable men from all the people – men who fear God, trustworthy men who hate dishonest gain – and appoint them as officials over thousands, hundreds, fifties and tens. Have them serve as judges for the people at times, but have them bring every difficult case to you; the simple cases they can decide themselves. That will make your load lighter, because they will share it with you. If you do this and God so commands, you will be able to stand the strain, and all these people will go home satisfied.” (Exodus 18: 17-23, p.52)

Galpin (1996) also suggests change is not new to organizations. Mergers, downsizing, restructuring, and process reengineering have surfaced a greater level of consciousness toward technical, financial and operational changes in organizations. With the variety and complexity of organization change increasing, the study of organization change has gained momentum, in an effort to find what systematically seems to facilitate and enhance effective change (Burke, 2002), that is, the accomplishment of planned change goals.

Hellriegel, Slocum and Woodman (1989) use the term “management of change” (p.29), which they define as “adapting an organization to the demands of the environment and modifying the actual behaviors of employees” (p.29). They go on to suggest that if employees resist the change, and do not change their behaviors, the organization cannot change (Hellriegel, Slocum and Woodman, 1989). This relates to Burke’s (2002) notion that the study of organization change must also include, “...what leads to failed attempts at organization change” (p.19).

Change efforts are also “expensive, either in direct resource outlay or in the time and productivity loss associated with disrupted routines, particularly at the outset” (Jick, 1993, p.153). Related to time and productivity, Galpin (1996) suggests organizations have paid little regard, until recently, to the human aspect of change, resulting in manifested problems in labor relations and talent retention. There is, therefore, an important need to monitor a change effort, to find how people are responding beyond the numbers [financials] (Jick, 1993). This seems to relate to Burke’s (2002) perspective on finding what facilitates and enhances effective change.

Nadler and Tushman (1986) describe ten principles that can facilitate and enhance organizational change efforts, which include the following:

1. The diagnosis principle – aimed at analyzing the organization in its environment, understanding its strengths and weaknesses, and analyzing the implication of anticipated changes. Solid diagnostic thinking and applied learning is needed to meet the challenges of surrounding forces, and to anticipate responses.
2. The vision principle – where casting vision of what the organization will look like at a future date after the change is the main focus. Deals with rationale for why the change is occurring, articulation of importance for stakeholders, description of core values that drive the change, setting performance objectives, casting organization structure and processes, and describing operating style or norms.
3. The energy principle – reflects the need for a sense of urgency, in the midst of inherent resistance to change in organizations. It involves helping reorient people in the organization by anticipating responses and launching proactive information about assumptions likely made about the current situation.
4. The centrality principle – suggests the change must be so central (applicable) to the vision and strategy that people are compelled toward it. Employees must be able to see the clear connection between the organizational requirements and individual needs.
5. The three theme principle – characterizes change themes as needed, but should be limited, to prevent overloading the people. Consistency and believability make change themes more credible.

6. The magic leader principle – focuses on the leadership attributes as critical for successful change. Effective attributes are highlighted as envisioning, energizing, and enabling.
7. The leadership-is-not-enough principle –reflects the need for investment in an effective team, not just a single leader.
8. The planning-and-opportunity principle – suggests effective change is guided by a process of iterative planning. “Planned organizational change involves a good deal of learning ...and this learning can and should shape the development of the vision and reorientation.” (p.236)
9. The many-bullets principle – recognizes the need for interaction between organizational and individual behavior, and therefore use different devices to change behavior. The authors further reflect:

“This involves planned changes in strategy, organizational structure, processes, and individual skills, attitudes, and perceptions.” (p.237)
10. The investment-and-return principle – concerns the amount of effort and resources required to achieve a successful change effort.

Organizational Behavior

The theory related to organization change is drawn from organizational behavior. Organizational behavior (OB) is an applied behavioral science considered to be the “field of study that investigates the impact of individuals, groups, and structure have on behavior within organizations, for purpose of improving organizational effectiveness” (Robbins, 2001, p.6). Disciplines contributing to the field include psychology, sociology, social psychology, anthropology, and political science (Robbins, 1993, pp.17-19).

Robbins (1993) contends that although psychology studies human behavior around motivation, perception, and learning, and sociology studies people interacting in complex organizations, it is social psychologists that have investigated change and barriers to its acceptance [resistance] (p.18). Anthropology investigates cultural aspects of organizational life, while political science studies conflict structures pertaining to individual self-interest and organizational roles (Robbins, 1993).

Prevalent in the organizational behavior literature is the conceptual linkage between organizational change and organizational learning (Vasu, Stewart, and Garson, 1998). For example, Argyris (1990) suggests a learning metaphor to describe alternative change models, and Senge (1990) conveys the mental model, one of cognitive processing, of systems thinking, as a learning system within organizations, especially recognizable in change environments. While these models and perspectives of change and learning are explored relative to their impact on organizations, other OB literature describe the individual aspects of change (Galpin, 1996) such as reaction to change (Argyris, 1990), fear associated with change (Dellcave, 1996; Argyris, 1990), and organization dependency factors (Lewin, et al., 1944) by individuals experiencing organization change. Each are briefly described, and are important to understanding change orientation behaviors and the linkage to individual learning and learning style difference relationships. These constructs are supported by human behavior theory.

Human Reaction to Change

Argyris (1990) speaks of the dilemma of individuals in organizations who have the desire and intention to behave in one way, yet invariably behave differently when the risk

perceived is greater than the person is willing to assume. As such, the person is likely to cover up the true intended message and action, to gain a more favorable position with the recipients, and further cover up the cover up.

“Human beings are not usually motivated to produce what they do not wish or intend” (Argyris, 1990, p.87)

Argyris, in his research on overcoming organizational defenses (Argyris, 1990), describes the process of risk avoidance and hiding reality within organizations as “designing human errors” (p.71-75). Much like instilling a defect into a manufacturing production line, through faulty materials, malfunctioning equipment, process degradation or incompetent labor, the author refers to the introduction of human error into the behavioral interaction process of highly motivated and competent professionals. The two ways these errors happen in organizations are described as:

- (1) Individuals are not aware of producing error while doing so.
- (2) Individuals know they are producing error but have figured out a way to make the error look as if it was not an error.

This seems to parallel the Organizational Change Orientation Scale (OCOS) model developed by Jones and Bearley (1986), as reflecting non-functional and dysfunctional behaviors. Non-functional behaviors were associated with hiding [withholding] key information needed to make effective decisions, and dysfunctional behaviors were associated with sabotage [induced errors].

The Fear Factor

Reactions to change vary depending on organizational culture and related mindsets. One of the most common reactions is fear, according to Dellcave (1996). His article, “The Fear Factor,” discussed the implementation difficulties of moving sales people to an automation system, as a result of merging management and organizational changes in the

business. The difficulty was in attempting to move people who were content with current circumstances and job aids to processes and technology in which they were uncomfortable.

The fear found by Dellcave (1996) and Argyris (1990), is related to uneasiness in changing from what is known to work for the individual, to something unknown. The uneasiness can often turn to paranoia, which disrupts the work flow and negatively impacts the organizational effectiveness. Cited reasons for such a dilemma are the generational differences in which people have faced changes, how they perceive their outcomes based on prior experiences, and how the change is perceived in terms of personal value to them (Dellcave, 1996). It then appears age, as a depiction of generational differences, and prior change experience, such as job change, are important factors to observe in understanding change and learning relationships and are therefore included in the demographic aspect of this study.

The Dependency Factor

People also react to change based on their need and perceived fulfillment of psychological success and failures (Lewin, et al, 1944). The amount of psychological energy a person has for a task, is strongly influenced by the degree of psychological success and failure experienced. Therefore, the more successful, the more energy exists. Conditions in the environment, such as communication, management support, and training opportunities influence individual perception, such that a level of dependency on the organization is used to cope with incongruities (Perry, 1984, p72).

Recognizable ways individuals might exercise differing levels of energy include taking time off, leaving psychologically but not physically, expending the least amount of effort possible, increasing their dependence on the organization unrealistically, and by

reducing their dependence on the organization almost totally. All five examples are representations of levels of dependency by an individual on the organization. Taking time off would include absenteeism and prolonged time spent elsewhere. Psychological departure is recognizable as a person still performing in a role, yet it is clear to everyone their heart and passion are not in it (Chang, 2000). Psychological departure might depict non-functional behavior, while absenteeism could represent dysfunctional behavior (Jones and Bearley, 1986). Orth (2002), for example, in studying change-influencing factors in a financial organization, found a highly significant correlation between communication, supervisory support, learning interventions, and positive retention efforts.

Human Behavior Theory

The theoretical basis of this study includes the human behavior construct, and the channels that motivate sustained and desired behavior within the organizational environment. When dealing with the question of how people effectively adapt to merger related changes, answers can be found in human motivation theory (Robbins, 1997; Galpin, 1996; Carnall, 1991), with development toward global perspectives and situational perspectives.

Three broad classifications of theory offer insight on human behavior. One is static content theory, which looks at what energizes human behavior (Bowditch and Buono, 1997). A second is process theory, which looks at factors that channel or direct behavior. And a third is environmentally based theory, which focuses on sustaining or maintaining behavior over time. All have relevance for an adaptation to change in an M&A environment.

Maslow's model of hierarchy needs (Maslow, 1954) offers insight on individual feelings of security and acceptance, as a means of energizing individual behavior. These areas in particular are surfacing around merger integration, in the form of fear and role clarification. Recognition and identification of individual needs within an organization for the purpose of motivating behavior is important to successful integration (Hildebrand, 1996).

As a process theory, Vroom's (1964) model identifies three components that motivate a worker. First, it is commonly believed within the environment that increased effort leads to good performance. Second, that the perception exists that good performance will lead to certain outcomes or rewards. And third, that the perceived value of the outcome or reward will partially determine the motivation of action by the individual. In a merger, performance based outcomes and expectations may shift significantly (Burke, 2002), which impact individual motivation (Galpin, 1996).

The socially acquired needs theory (McClelland, 1961) is also applicable to this study. People have three basic needs that they develop and acquire from their culture [environment], which include the need for achievement, for power, and for affiliation. The strength of each need, and the extent to which it is fulfilled, help shape individual behavior. While an individual may develop a particular bias toward one of these needs over others, situations can influence the behavior. One such situation is the human change necessary to implement new structure, processes, and leadership in a merger of organizations. If one feels the change will detract from their achievement, due to no longer being recognized as an expert in their function, or from their power, when the organizational changes eliminate their role of being "in-charge", or from affiliation with others, when key contacts in organizations

are no longer viewed as the key influencers they once were (Katz and Kahn, 1978), they prefer to resist such a change.

Organizational Change Readiness

Behaviors associated with organization changes reflect resistance and readiness relative to the organization and individual (Robbins, 2001). Organizational readiness for change, that is, the organization is ready to manage and sustain the change, is depicted in Lewin's (1951) three-stages of unfreezing, movement, and refreezing. Unfreezing relates to dislodging the area that needs to change from the "norm" or routine so there's opportunity to do things differently. Movement, refers to changing the way things are done, while refreezing relates to integrating the change into the normal daily routine and sustaining it over time.

Nadler and Tushman (1986) also suggest that organizations go through stages when dealing with change. Their model seems to expand on that of Lewin (1951), to include awareness, experimentation, and understanding to be part of unfreezing, while commitment, education, and application appear to reflect movement. Integration into ongoing behavior reflects the same perspective as refreezing. Specific definitions in the model are as follows:

1. Awareness – organizational members become aware of the need for change, and seek to understand what the change is about.
2. Experimentation – on a small scale, efforts are made to try the change.
3. Understanding – greater understanding occurs from the experimentation, both good and bad.

4. Commitment – the leadership makes visible commitment to the change, through personal action.
5. Education – employees experience transfer of skills toward the new way.
6. Application to leveraged issues – the new approach and perspective is applied to key issues in the organization, which need resolution.
7. Integration into ongoing behavior – the new approach, or change, becomes a normal routine, or occurrence within the organization.

Bridges (1991) uses a model similar to Lewin (1951) to describe individual readiness for change (Robbins, 2001), suggesting three stages individuals go through in dealing with changes. Ending is the stage where the individual recognizes something has stopped or ended, and therefore will never be the same again. This marks the transition into the change, and the initial reactions, such as fear, dependency, and resistance mentioned before. The second stage, the neutral zone, is a stage where the individual experiences a lot of questions, to which answers are sought. New beginning is the third stage, where the individual recognizes possibilities about the change, and becomes more actively supportive rather than resistant to the change.

Resistance

Since “organizations and their members resist change” (Robbins, 1993), change readiness, could be viewed as a measure of the barriers to change, or in other words, the degree to which resistance is perceived and addressed. For example, West (1998) conducted a study of healthcare workers in VA, for-profit, and non-profit hospitals to test change readiness of the organizations implementing a new financial system. The factors considered

were related to cost, existence, quality, and outcome. Findings from the study identified potential obstacles [barriers] to the change effort, such as lack of resources, and in one case, in VA hospitals, lack of training.

Further, Kennedy (2002) conducted a longitudinal case study in a Fortune 100 manufacturing organization between 1999 and 2001 to test change readiness from a change response perspective. Using the change type, that is, short-term or long-term change efforts, and the change readiness literatures as a conceptual framework, the researcher linked two aspects of organizational change, change readiness and change type, such as merger, to the successful change outcome, or integration.

As Kennedy (2002) describes, organizational change is comprised of change type, readiness, process, and resistance to change, and studies the link between the first two. This study focuses on the resistance to change in individual behaviors, within a specific change type, and its influence on readiness.

The Kennedy (2002) study tested if a directive performance management style would be most effective with a long-term radical change and a supportive management style would be most effective for a short-term continuous improvement change in the organization. While the study failed to support the hypothesis, it highlighted the measure of change readiness as being four primary factors; leadership, management style, performance management systems, and communication intention. Communication [information processing] and manager style also appear in the learning and learning style studies (Johnson, 2001).

Other studies have addressed the individual readiness perspective within organization change environments. For example, Cunningham, et al. (2002) conducted a

longitudinal study of 654 hospital staff regarding the occupational risks of change, ability to cope with change, job-related problem solving and readiness for organizational change. The organizational change readiness component was related to individual propensity to accept and support change. Results indicated high change readiness scores, as used in this fashion, along with active job-related problem solving were the best predictors of participation in redesign activities during a long-term change effort. Similarly, Orth (2002) studied individual factors of organization change readiness among 500 state government employees involved in the implementation of a new performance evaluation system and a new performance-based pay system. Change readiness measures were on self-reported behaviors. The study found readiness for change, as a measure of behavioral attributes, to be the best predictor of commitment to change and support for change, as well as resistance toward the change. Specific behavioral attributes were those behaviors focused on ‘change support’ and ‘change resistance.’ These seem to correlate with the individual change behaviors, functional, non-functional, and dysfunctional used by Jones and Bearley (1986).

Change Orientation

The research on change orientation is focused on the behavioral attributes of individuals experiencing change that identify where the individual is moving toward or away from the desired change behavior. Orth (2002), suggests a two-factor model; support and resistance, where the individual behaviors either reflect more support and less resistance, or less support and more resistance to the change. Jones and Bearley (1986) suggest a three-tiered model of functional, non-functional, and dysfunctional. A high score on ‘functional’ behaviors would reflect a high level of support for the change, and most

likely aligned with Lewin's (1951) refreezing stage relative to the organization and Bridges' (1991) new beginnings stage relative to individual change. A high score on 'non-functional' would most likely represent movement and neutral zone stages of change respectively, while a high score on 'dysfunctional' would most likely suggest more resistance, and alignment with unfreezing and endings stages respectively. Both Lewin (1951) and Bridges (1991) suggest an organization, and an individual, must progress through the change stages in sequence, that each stage takes time, and that the time in each stage is different for each organization and each individual. Therefore, the study of individual differences, and the aggregation to the organizational level, is important to adding depth and breadth to understanding organization change, the people side of change, and complex merger changes.

Lourens (2002) for example, studied the change orientation and leadership attributes of 879 senior managers in five different organizations. The study found significant relationships between change-centered leadership orientation and emotional intelligence leadership attributes of self-motivation, empathy, and self-awareness. Also interesting, the demographic variables of race, educational level, number of people the leader is directly responsible for and functional group were found to be significant predictors of the change-centered orientation.

Change Interventions

Wendell French and Cecil Bell (1984) present Organization Development (OD) interventions as "planned change activities in which clients and consultants participate during the course of an organization development program" (p.120). French and Bell (1984) further define interventions in this way:

The term is often used to refer to any learning technique or method available to the practitioner. Thus, any one of the extant methods available, what Burke and Hornstein call “the social technology of OD,” is an intervention according to this use...The technology of OD consists of educational activities, methods, and techniques; some “things to do” and some “things to be sure not to do”; questionnaires, observation and interview schedules, and so forth. Any of these can appropriately be considered an intervention when it is used to bring about organization improvements. (p.121)

The emphasis on educational activities, methods, and techniques is supported by Burke (2002), who also makes a connection between change and learning, related to interventions and their use in bringing about change. French and Bell (1984) suggest there are “assumed underlying dynamics of change and learning” (p.133) useful and necessary in categorizing and choosing OD interventions, that is, interventions used to bring about change needed in the organization. Features of different interventions “that may be causally related to learning and change” are also presented by French and Bell (1984). These five features include feedback, awareness of changing socio-cultural norms or dysfunctional present norms, increased interaction and communication, confrontation, and education.

Organizational Awareness

French and Bell (1984) emphasize the need for further study of organization change and the development of effective OD interventions supporting the five categories introduced above. They contend,

We are only beginning to understand the underlying mechanisms of change interventions. As that knowledge increases, greater precision in the selection of intervention activities will be possible. The issue can be stated as follows: OD does in fact work; why it works is less well known and understood. (p.134)

In support of deeper understanding of OD change interventions, French and Bell (1984) further classified change interventions as those that focus on; 1) team improvement, 2) inter-group relations improvement, 3) personal, interpersonal and group processes, 4) comprehensive or total organization interventions, and 5) structural interventions. All are

stated to be intervention activities that are “techniques and methods designed to change the culture of the organization, to move it from ‘where it is’ to ‘where it wants to be,’ and generally enable the organization members to improve their practices so that they may better accomplish their goals” (p.138).

An example of the use of ‘inter-group relations improvement’ and ‘structural’ change interventions, was used in the study by Halmo (2001) to assimilate smaller groups, 16 Numic Indian tribes, into a larger group, an incorporated entity. The study looked at the 1) role of corporate and organizational structure in articulating the social relations between the contending groups, and 2) shifts in the distribution of power as a result of changing the environment. Overall findings were significant for culture change understanding, in helping the individuals involved in the change [recipients] work toward improved collaborative practices.

Burke (2002) relates to the work of Blake and Mouton (1968) when these researchers applied a six-phase grid model to organization change and referred to it as the “grid organization development” (Burke, 2002, p.37). As Burke highlights, the two most common barriers to organizational effectiveness considered by organizational managers in Blake and Mouton’s (1968) study were communication problems and a lack of planning. Seen as symptomatic and not causal (Blake and Mouton, 1968), these findings were determined to be as a result of a lack of effective strategy, and ineffective style and approach to supervision and management (Burke, 2002). Burke (1994) relates this to organizational learning.

Blake and Mouton never state it, but they apparently assume that, unless an organization learns how to communicate more effectively and plan more logically and systematically, its management will never be able to deal optimally with the specifics of running a business. (p.121)

Organizational Learning

The underlying premise presented by French and Bell (1984) related to these OD change intervention classifications can best be summarized in their attempt to “examine techniques involved in applying behavioral science theory and practice to changing and improving ongoing systems” (p.120), and to offer guidance on change intervention selection and use to support furtherance of learning. In guiding selection and use, French and Bell (1984) pose some situations and subsequent questions regarding application of OD interventions, which have a direct connection to learning.

We are dealing with individual behavior right now; how can this learning be translated to learning for the group?

We are dealing with group phenomena right now; how can this learning be translated to learning for the individuals?

We have just learned about a phenomena by experiencing it; what theoretical or conceptual material would augment this learning?

We are dealing with issues and forces impinging on this group from outside the group; what activities must be designed to facilitate more appropriate handling of these interface issues? (p.135)

The first situation links individual behavior concerns happening in the organization to organizational learning (Senge, 1990; Argyris, 1990), that is, learning that is happening in the organization as to how the behavior is accepted or tolerated. The second situation identified by French and Bell (1984) links the identification of group norms and behaviors, to the opportunity and need for individual learning. The third situation links experiential learning, that is, things learned from a specific experience, to interventions that enhance the learning. The fourth situation links the occurrence of external forces on the organization, such as system wide change (Burke, 2002; Senge, 1990) to the design and implementation of interventions that facilitate, or enhance, the implementation of the change.

The case study on organizational change by McMillan (2000) found evidence of change integration effectiveness within a chaotic and complex organization change context,

when applying new sciences change theories of learning and self-organizing as change interventions. These findings imply a need for further exploration of how individuals learn and behave within organization change environments where chaos and complexity can influence strategic change interventions.

French and Bell (1984) support the use of Michael Beer's (1980) decision making framework for determining selection and integrated use of OD interventions when dealing with organization change. These decision rules, which support the use of the Learning Styles Inventory and Organizational Change Orientation Scale (OCOS) assessments as distinct, and as a combined intervention, are described below.

1. Diagnostic data – interventions that will provide data needed to make subsequent intervention decisions should come first,
2. Maximize effectiveness – interventions that develop readiness, motivation, knowledge, or skills required by other interventions,
3. Maximize efficiency – interventions should conserve organizational resources such as time, energy, and money. (Interventions not needed by certain people or parts of the organization would be a violation.)
4. Maximize speed – interventions should maximize the speed with which organizational improvement is attained.
5. Maximize relevance – interventions that focus on immediate organization performance or task come before those aimed at individual and culture impact.
6. Minimize psychological and organizational strain – interventions that are least likely to create dysfunctional effects such as anxiety, insecurity, distrust, dashed expectations, psychological damage to people, and unanticipated and unwanted effects on organizational performance. (p.136)

French and Bell (1984) also suggest that successful OD change efforts require a strategy that can be articulated and made visible. They further say, “the [change] process can be facilitated by cognitive maps showing where groups have been in their learning experience, where they might go next, and so forth” (p.225). This conveys the need for a clear OD change strategy that includes assessment of learning that is occurring during the change process, as part of the open system perspective.

Relative to change management in change organizations, individual and organizational learning is a tool for influencing more effective change (Senge, 1990; French and Bell, 1984). By being attentive to the learning potential, opportunity, and outcomes, an organization can reduce its organizational defense pattern (Argyris, 1990) and influence adaptation more effectively. The defense pattern is the emerging behavior that results from accepting the status quo, or by leaving things to chance. Argyris suggests “applying learning principles” (p.68). Simple actions in meetings, performance of work, and informal exchanges of information can qualify as learning opportunities. The most critical factor being the change in action, or behavior, that occurs as a result of placing emphasis on the learning rather than the changing environment.

This focus and reinvigorating emphasis on learning, based on systems theory that all things work together in exchange and impact (Senge et. al., 1999), offers a challenging perspective to change organizations facing integration issues that affect the human capital of the business. Such an organization must seek specific insights from the perception of individuals within the integration activities, and seek to understand how learning plays a part in the change practice as a “learning process”(Senge, et.al., 1999, p.168).

Vincent Barabba (1995) makes a case for prioritizing learning interventions within the change organization. According to Barabba (1995), the organization must be increasingly judicious in deciding what it learns, and what information is relevant to it’s business, suggesting “to create value, we must not only learn, we must learn the right things” (p.161).

Learning

The learning literature pertinent to this study includes learning theory in general, and learning specific to adult learners in complex change organizations. It also includes the theory and practice of learning styles and learning interventions. Learning theory provides a basis for learning style relevance. Learning style application is useful in prioritizing and designing learning interventions.

Learning Theories

Three theories of learning outlined by Rothwell and Sredle (1992) highlight the theories important to the human resource development (HRD) professional practice, to organization development (OD) as a key function of HRD, and therefore to organizational change as related to OD. Behaviorism, cognitivism, and developmentalism, are described in Table 2.1, linking the concepts and theorists' associations of each.

Table 2.1 Learning Theories

Theory	Contextual Frame	Theorists
Behaviorism	Supports rigorous psychological research to explain and predict stimuli, behavior and consequence relationships. Attention is placed on present behavior, external observation of behavior, and pre-specification of measurable desired results. Learning occurs through observable and measurable behavior.	Ivan Pavlov, John D. Watson, Edwin Guthrie, Edward Thorndike, Clark Hull, Kenneth Spence, and B. F. Skinner
Cognitivism	Concerned with insight and understanding, using internal and personal stimuli and responses in the learning process. People have a major influence on their environment. Learning results from insight and recognition of relationships between distinct areas of a problem.	Edward Tolman, Kurt Lewin, Wolfgang Kohler, and Jerome Bruner
Developmentalism	Suggest positive human capacity to act on the environment rather than react to it. Learning results from self-direction in problem solving and meeting needs, influenced by individual experience and timing of those experiences.	Jean Piaget, Malcolm Knowles, and Carl Rogers

McDonald (1964) discusses learning theories differently, using the six categories; 1) recapitulation- based on the work of theorist Clark Hull, connectionism- linked to the

theorist Edward Thorndike, 2) pragmatism- linked to theorist John Dewey, Gestalt and field theory- based on the theories of Ogden, Hartman, and Lewin, 3) dynamic psychology- linked to the theorist Sigmund Freud, and 4) functionalism- linked to the work of Judd. Gage (1972) simply states three families of learning theories; 1) conditioning, 2) modeling, and 3) cognitive. Hilgard and Bower (1966) also group the theories differently, using 2 major families or groups; 1) Stimulus-response theories, which includes the works of Thorndike, Pavlov, Guthrie, Skinner, and Hull, and 2) Cognitive theories, which include Tolman's work and that of Gestalt psychologists (p.8). Kingsley and Garry (1957) use a similar grouping, where 1) association or stimulus-response theories include Thorndike, Guthrie, and Hull, and 2) field theories include Lewin, Tolman, and Gestalt psychologists. For the purpose of this study, the three theories identified in Table 2.1 are selected due to close association to the HRD field, and the grounding for adult learning principles explored, and will therefore be addressed further.

Ivan Pavlov conducted pioneering work in the study of classical conditioning (Lovell, 1980). His study of dogs responding to a conditioned buzzer stimulus he associated with a reward of food, an unconditioned stimulus, yielded a conditioned response of salivation by the dogs and an early theory of learning around stimulus-response associations. Supporting Pavlov's theory, Watson (1924) applied the stimulus-response association theory to a human subject, a small boy, teaching him to fear a white rat by association alone. Guthrie (1935) offered suggestions for altering a conditioned response through a learning process by tiring the learner with repeated stimulus, varying the stimulus presentation, and offering the stimulus under conditions where the response cannot occur. These are all works supporting the behaviorism theory that learning happens when there is a behavioral response

to a stimulus. Edward Thorndike (1928) furthered the behaviorism theory by developing the seven laws of learning, shown in Table 2.2, “and attempted to investigate how it is that specific responses became linked with specific stimuli” (Lovell, 1980, p.32).

Table 2.2 Laws of Learning – Thorndike

Law	Contextual Frame
The law of effect	Satisfaction strengthens a response, annoyance weakens the response.
The law of readiness	Readiness to act when stimulated and allowed to act brings satisfaction, while lack of readiness or inability based on forced response brings about annoyance.
The law of exercise	The response to stimulus is strengthened when used, weakened when unused.
The laws of multiple response	A response not leading to satisfaction will lead the learner to attempt other responses.
The law of prepotency	The learner selectively perceives the stimulus to which a response will be made.
The law of analogy	The response to a new stimulus is based on the learner's analogy with responses to similar but known stimuli.
The law of associative shifting	The learner can be taught to make a connection between a stimulus and a response even though the stimulus is not presented.

Hull (1952) conducted numerous laboratory experiments to test learning hypotheses, supported by stimulus-response learning perspectives, which he termed inputs and outputs, and inspired by systems theory, he projected a theory of intervening variables – the effects of environmental stimulus on the individual learner. Hull’s theory of the intervening variables; habit strength, drive, stimulus dynamism, and incentive, were built upon by Spence, who redefined the relationship between the variables to be additive rather than multiplicative. B. F. Skinner (1953) further theorized that some responses are not stimulated, in the classical conditioning other behaviorists suggested, yet those responses will be repeated if reinforced, which Skinner called operant conditioning. Such conditioning is also emphasized by Lovell (1980), who suggests that behaviors that bring about learning, include

positive reinforcement, negative reinforcement, and punishment, although “the linchpin [to operant conditioning] is positive reinforcement” (p.37).

Behaviorist theory suggests that human nature is primarily reactive, in that “people respond to certain stimuli in the environment” (Cranton, 1994, p.8). Using this approach, learning occurs through observable and measurable behavior, where changes in external behavior, produces changes in internal values, beliefs, and attitudes. Environmental stimuli initiated by instructors, peers, the organization, and the learning process evoke learner responses, positive or negative, which are reinforced by various rewards, viewed favorably or unfavorably depending on whether it produces the desired response and is available. Therefore, in many ways, the learner is a product of the environment.

Cognitivism learning theory, formulated by Gestalt psychologists, is individually focused rather than environmentally stimulated, and deals with insight and understanding of the learner. The learner is therefore an influencer of the environment. Gestalt theorists promote the insight and understanding of the pattern of relationships between stimuli and responses rather than confining learning to only the two elements. Wolfgang Kohler (1925) observed caged apes on a tropical island, as he experimented with their ability to obtain bananas placed outside their reach. The cleverness demonstrated through stacking boxes to climb higher and using a stick to reach farther, revealed how insight, or what Kohler defined as recognition of relationships that exist between discrete parts of a larger problem, (Lovell, 1980), led to further theory and research on Gestalt systems theory and the personal side of learning (Munn, Fernald, Jr., and Fernald, 1969, p.625).

Gestalt theory emphasizes perception as fundamental to learning. This is primarily around the process of discovering relationships, and the fundamental concept that

“individual change results from acute awareness” (Rothwell and Sredl, 1992, p.330). Gestalt psychology has proposed six principles related to individual perception, which may influence change readiness, as reported in Table 2.3.

Table 2.3 Gestalt Psychology Principles

Gestalt Psychology Principle	Conceptual Meaning
... of Direction	Stimuli appearing to be meaningful and forming a pattern will stand out against a neutral background, in a way that observers can perceive the pattern.
... of Contiguity	Stimuli occurring close together tend to be perceived as grouped together.
... of Embeddedness	A large figure with multiple stimuli will stand out from small figures with fewer stimuli.
... of Likeness	Similar objects will tend to be perceived together.
... of Joint Destiny	Objects that move together will tend to be perceived together.
... of Closure	The mind will tend to perceive experiences as complete or incomplete patterns.

An underlying assumption or belief in the Gestalt principles is that every psychological event or experience tends to be perceived as meaningful and complete (Knowles, 1978).

Edward Tolman theorized using experiments with rats in a maze, to test internalized associations between a goal, behaviors, and awareness of the environment in which the goal is located (Tolman and Honzik, 1930). By blocking certain routes between the entrance and exit of the maze, he observed the development of cognitive maps, that is the learning of which routes would work and which would not, as a learning process (Munn, Fernald, Jr., and Fernald, 1969). Learning, he contended, “occurs when expectations are aroused in connection with behaviors, within a unique environmental context” (Rothwell and Sredl, 1992, p.330). Cross (1981), and Knowles (1978) both refer to Tolman’s work as fundamental to understanding learning motivation. Wlodkowski (1993), although not citing Tolman’s work directly, refers to the motivation theory expressed by Cross and by Knowles.

Kurt Lewin's (1951) theory of learning supports Gestalt psychology and cognitive map learning, influenced by phenomenology, that is the belief that people interpret experiences and those interpretations are central to their existence (McDonald, 1964, pp.1-26; Kingsley and Garry, 1957, p.83). Within this context, Lewin concluded that the individual is at the center of life space, that is, everything that affects the individual's behavior, and the environment itself, has no inherent meaning. The way individuals perceive themselves and their environment is crucial to understanding and influencing behavior (Lovell, 1980; Dewey, 1963, p.42; Lewin, 1948). Lewin (1951) uses the term *valence* to mean the perceived value or attractiveness of a goal to an individual, and *barrier* to depict the perceived difficulty an individual might realize in achieving a goal. He further suggests human behavior is essentially goal oriented and purposeful, toward achieving high valence. While Lewin (1948) does not emphasize cognitive mapping, he does establish the foundation of experiential learning, that is, the transfer of learning through personal experiences (Mezirow, 1996, p.162), which also influences Kolb's (1984) learning styles model discussed later. Lewin's (1948) work is also the basis of action research in organization development (OD) (French and Bell, 1984; Corey, 1953; Lewin, 1946), which suggests that group learning occurs through the three step process of unfreezing old beliefs, restructuring those beliefs, and refreezing with new beliefs (Peters and Robinson, 1984).

Jerome Bruner (1966), a cognitive theorist, emphasizes the internalized nature of human learning as a progressive process in evolutionary terms, as opposed to a stimulus-response function. Thus an evolution in human development is suggested to occur in stages, such as development of motor skills, sensory abilities, and intellectual capacity (Knowles, 1978). Bruner (1966) also suggests human learning occurs through categorization of ideas or

concepts based on identifying the similarities of attributes through a coding system, such as the use of metaphors – in word and picture form. Learners’ ability to create and use such a coding system depends on their individual qualities of; 1) set - their readiness to perceive, 2) need - their motivation to learn, 3) species - their current expanse or breadth of knowledge about similar concepts, and 4) diversity - breadth of experience in applying the ideas or concepts.

Cognitive-learning theorists suggest human beings are highly adaptive to their environment and even capable of changing it (Cross, 1981; Knowles, 1978). Learners play an active role, through experiential and personal involvement in the learning process (Lewin, 1948). The role of an instructor or facilitator in cognitivism is to “create [and maintain] an environment that will lead to individualized learning” (Rothwell and Sredl, 1992, p.330.).

Developmentalism is influenced by cognitive theory and encompasses the developmental learning theory of modern researchers and writers who embrace human freedom to learn and capacity to act on their environment rather than react to it. These theorists emphasize learning as internal to the learner, where learning is natural and human nature is essentially growth-oriented.

Jean Piaget (1972), for example, identifies two primary ways children adapt to their environment, which Piaget believes, based on the work of Erik Erikson, applies to adult learners, called assimilation and accommodation. Assimilation relates to activities already learned while accommodation relate to a change in behavior resulting from environmental influence (Knowles, 1978). Both terms are also found in learning styles literature and research by David Kolb (1984), and used in this study.

Carl Rogers (1969), a clinical psychologist, also influences learning in education and training arenas, as a developmentalism theorist. His theories, based on the assumption that psychological counseling is a learning experience, suggest:

- learning is entirely internal, making teaching impossible and learning learner-centered,
- people learn what they perceive to be worthwhile,
- people resist learning experiences the learner perceives to threaten their self-concept, and
- self-concept becomes more rigid when threatened.

Knowles (1978) speaks of Rogers' approach as:

"We cannot teach a person directly, we can only facilitate his learning. A person learns significantly only those things which he perceives as being involved in the maintenance of, or enhancement of, the structure of self." (pp.41-42)

Rogers supports the notion that people learn so they can fulfill or satisfy an unmet need, and so they can gain greater freedom to achieve more aspects of their potential (Knowles, 1978).

Knowles (1978) furthers the developmentalism theory to focus on adult learners. He supports Rogers' theory that people are motivated to learn so they can achieve greater aspects of their capability (p.63).

Within the scope of this study, the learning focus is on adult learning within organizations. While it is recognized by this researcher that andragogy, that is the study of learning by adults (Cross, 1981, p.222; Knowles, 1970, p.38), has developmental roots in the area of pedagogy, or childhood learning (Cross, 1981, p.222; Knowles, 1970, p.39), the aim here is toward learners in organizational settings where complex organization changes may occur, like those associated with M&A actions.

Adult Learning Theory

Cross (1981), states that andragogy has been traced back to 1833, but popularized by Malcolm Knowles in the late 1960s (p.222). Knowles (1978) discusses andragogy as a “comprehensive theory of adult learning” (p.28), while Mezirow (1991) more specifically describes andragogy, as “helping adults elaborate, create, and transform their meaning schemes...” (p.201). He suggests andragogy is related to transformation theory, that of “actively encouraging critical reflection through which individuals can investigate the justification of their meaning schemes and perspectives” (Cranton, 1994, p.169). Knowles (1978) identifies five major points to andragogy; 1) increasing self-directedness, 2) learner as a rich resource for learning, 3) developmental tasks of social roles, 4) immediacy of application, and 5) problem-centered learning (Cross, 1981, p.224; Knowles, 1978, p.110), as reported in Table 2.4.

Table 2.4 Andragogy

<u>Andragogy: Learning is</u>	<u>Description</u>
...a result of self-direction	As a person grows and matures his/her self-concept moves from dependency to increased self-directedness
...influenced by learner experience	A maturing individual accumulates expanding experiences useful as a rich resource for learning, and a broadening base to which new learning can be related.
...influenced by timing of experiences	The readiness to learn for a maturing individual becomes decreasingly a product of his/her biological and academic development, and increasingly toward learning performance tasks in evolving social roles. Adults are most willing to learn when faced with specific life problems to which they seek answers.
...problem-oriented	Adults learn solely to meet needs and solve problems.

*Adapted from: *The Adult Learner: A neglected species, 2nd Edition.* (Knowles, 1978, pp.55-56)

Within the confines of these points, Knowles (1978) suggests that learning in adults is strictly internal and related to human development stages, described as progressive growth in ages zero to twenty-five, stability of growth in ages twenty-five through forty-five, and regressive growth in ages forty-five and older (p.157). Alan Knox, for example, contends

that rapid changes are more difficult for adult learners, who frequently are asked to make major adjustments in their lives, that is, types of adjustments they have never experienced (Knox,1977). Yet Merriam and Caffarella (1991, p.179) contend that even with a known memory loss during the aging process, there is no apparent impact on learning.

Knowles also describes the role of learner as “self-actualizing” and the role of instructor as “facilitator of learning” (Rothwell and Sredl, 1992, p.333). This supports the human behavior theories of Maslow (1970) in individual achievement of human needs, and Rogers, who along with Maslow, emphasizes self-actualization (Knox, 1977, p.324), that is the human fulfillment of life beyond survival through achieving inherent personal potential and successful individual living (Knox, 1977, p.322).

In alignment with Knowles’ perspective on the last stage of human development, it would seem reasonable to expect change recipients in organizations that are forty-five years of age and older to reflect a higher level of defense against possible loss in the organization change (Knowles, 1978; Pressey and Kuhlen, 1957), and thus a lower level of readiness to change in the M&A environment. Chapter 4 describes the findings to this presupposition, within this study.

The study by Cyril Houle (1961) of twenty-two adults concluded three classifications of adult learners; 1) goal-centered, or those whose learning experiences are based on goal-achievement itself, 2) activity-centered, or those involved in learning for the activity experience rather than the outcome or goal achievement, and 3) learning-centered, or those involved for the sake of knowledge gain itself. Cross (1981), asserts “his [Houle’s] three-way typology remains the single most influential motivational study today” (p.82). Houle’s research, is further supported by Allen Tough (1967), who studied motivation in adult self-

directed learning projects. In his study of thirty-five adults learners, the motivation for eighty-three percent to start and ninety-four percent to continue a learning project were based on a desire to use the learning to take action, relating to Houle's "goal-centered" learner. Another sixty-three percent started and forty-three percent continued learning projects based on puzzlement, curiosity, or a question, which may relate to the activity-centered learner as well. Cross (1981) also highlights the three key findings from Tough's (1967) research; 1) a learner has more than one reason for engaging in learning, 2) adult learners are motivated by the pragmatic desire to use or apply the knowledge or skill, and 3) adult learners engage in learning with three starting patterns-seeking what meets a need, beginning with a question, and deciding to spend more time learning (pp.84-85). These second and third findings reflect similarities to Houle's three learner classifications.

Adults tend to initiate their own learning in response to life-events, and their motivation to learn increases as the number of life-events increase (Wlodkowski, 1993). Such life-events may include marriage, divorce, parenthood, promotion, or job transfers (Merriam and Caffarella, 1991, p.144), personal trauma, career setbacks, changing jobs, business mistakes, and subordinate performance problems (McCall, Lombardo, and Morrison, 1988, pp.88). Mezirow (1991) conveys "rather than merely adapting to changing circumstances by more diligently applying old ways of learning, adults discover a need to acquire new perspectives in order to gain a more complete understanding of changing events...transformative learning in adulthood" (p.3). Generally adults are especially open to learning before, during, and after a significant life event (Rothwell and Sredl, 1992, p.337), or what some call patterns of change or transitions (Merriam, 1984; Bridges, 1980, p.5).

Learning and Change

Three learning theorists in particular have explored learning as a process of change and growth from a psychological perspective. David Kolb (1984) focuses on learning as an adaptive process in which learners are continuously and holistically involved. His four-part learning model, which includes experience, reflection, abstraction, and experimentation, suggests learners can effectively adopt deeper approaches to learning by grasping experience and transforming it. He contends that through learning, people expand their range of emotions, increase their awareness of complex conceptual schemes, and enhance their behavior. Kolb agreed with developmentalism learning theory, in his view that “being able to hold complexities and resolve and integrate the dialectical in how one thinks, feels, sees, and acts is a mark of development.” (Taylor, Marienau, and Fiddler, 2000, p.23). Such ‘dialectical’ suggests transformation or change (The American Heritage Dictionary, 1991).

Mezirow (1991) and Freire (1993) emphasize transformative learning where individuals are able to be informed, experience discourse on issues, reflect on individual assumptions and bias, and recognize distortions in meaning in such a way that engenders change in intellectual, emotional, behavioral, and perceptual realms (Taylor, Marienau, and Fiddler, 2000). Freire’s (1993) work with individuals of illiteracy, poverty, and political repression deals with the relationship between dialog and reflective participation, for the purpose of empowering individuals to overcome their oppression and work toward social change. Supporting this theory, Mezirow (1991) emphasizes emancipatory learning – that which frees the learner from limiting beliefs, and allows the learner to enter an informed and reflective decision to act.

Merriam and Caffarella (1991) go further in suggesting “the more we know about adult learners [such as learning styles and change readiness], and the changes they go through [their tendency to deal with such change], including how these changes motivate and interact with learning, the better we can structure learning experiences that both respond to and stimulate development” (p.119). While Courtenay (1994) challenges assumptions about adult development, Merriam and Brockett (1997) contend adult development models are “pieces of a puzzle in advancing our understanding of how adults learn and change” (p.146).

Learning Styles

The need for individuals to learn on a continual basis is universally accepted today (Barabba, 1995). Both rapid technological change, and the accelerating rate at which knowledge increases require that individuals continue to learn at a fast pace. But do individuals within the change organization know how they learn? Barabba (1995) further suggests that individual learning is necessary for an organization to succeed in a dynamic and complex environment. For sustained, successful functioning as an organization, employees must not only learn individually, but their learning must contribute to the shared knowledge of the internal and external environments in which members of the enterprise, as individuals and as a group, think and work (Barabba, 1995). But do these individuals know how others learn within the change organization, and how it compares with his or her learning?

Individual Differences

Research on learning or cognitive styles evolved from the psychological research on individual differences (Curry, 1987). According to Hickcox (1995), distinct differences exist between North American learning style research and Australian and European learning style research. North American researchers have written about learner behaviors within learning situations. Levin (1986), for example, has written about “four cognitive principles of learning-strategy instruction;” while Thomas and Rohwer (1986), have written about “academic studying: The role of learning strategies;” and Kolb (1984), has contributed “from learning styles to learning strategies: The Executive Skills Profile” to the literature.

Learning styles are focused on improving the immediate and long-term results of teaching and learning episodes (Hickcox, 1995). The quality of the learning style used by students [learners] is likely to determine the quality of what is learned, and this can act as an outcome to compare [prioritize] various curricular approaches (Hickcox, 1995).

A learning style is a set of characteristics describing the ways the individual processes information, feels about learning, and behaves toward and in learning situations (Wlodkowski, 1993; Smith, 1982). Based on brain research, learning style is used synonymously with cognitive style (Wlodkowski, 1993, p.178), and may help regulate the direction, duration, intensity, and range of learning interventions, as well as the speed of learning performance (Messick, 1976). Adults in particular demonstrate “patterns of perceiving, remembering, thinking, and problem solving” (Wlodkowski, 1993). These patterns, shown as individual differences in learning styles across adult learners have implications for instructional designers, in designing learning that finds acceptance and meaning among diverse learners (McLoughlin, 1999). Research has shown that quality of

learning interventions is enhanced when designed to integrate individual learning styles (Rasmussen, 1998).

Emotions, or feelings, are also inherent in the learning process in that individuals are always emotional (Zajonc, 1984), although it isn't necessarily easy to perceive feelings among adults (Kidd, 1973) and some have a greater preference for emotion than others (Tucker, 1981). Learning styles help identify individual brain hemisphere use regarding intellect, emotion, and experience. Wlodkowski (1993) then concludes along with Shipman and Shipman, (1983),

“it is quite possible that learners who are involved in learning processes that are matched to their learning styles can more easily adapt to them as well as successfully perform their task requirements” (Wlodkowski, 1993, p.180).

Adapting to the learning process relates to individual readiness (Broad and Newstrom, 1992, p.74), motivation (Wlodkowski, 1993), and perceived outcomes (Merriam and Brockett, 1997, p.91).

Assessment and Application

Much of the research on learning styles has been conducted by psychologists using psychometric testing of intelligence and personality, with the results applied to designing learning interventions in educational and management settings (McLoughlin, 1999; Allison and Hayes, 1994; 1988; Curry, 1991). Although learning styles research has continued to sustain interest among cognitive psychologists, educators, HRD professionals and others, it is still viewed as limited (Wlodkowski, 1993; Wang and Lindvall, 1984), with no unifying concept or construct to integrate the field of study (Smith, 1982), and sometimes appears confusing due to the variety of terms used in education and training (McLoughlin, 1999).

Yet McLoughlin (1999) proceeds to clarify the terminology, citing the work of Curry (1991) and Riding and Cheema (1991), and promotes the use of learning styles as an effective tool in instructional design. The terms learning style, learning strategy, learning preferences, cognitive styles and cognitive strategies are differentiated by the degree to which they can be observed and articulated (McLoughlin, 1999), as described in Table 2.5.

Table 2.5 Learning Style Terms

<u>Term</u>	<u>Description</u>	<u>Assessment/Observation</u>
Learning preference	Learner favors or prefers one method of teaching over another.	Seek response from learner on preference.
Learning strategy	Learner adopts a plan of action in the acquisition of knowledge, skills, or attitudes.	Observe learner adopting a plan of action in acquisition of knowledge, skills, or attitudes.
Learning style	Learner adopts a habitual and distinct mode of acquiring knowledge.	Use questionnaire or psychometric test.
Cognitive strategy	Learner adopts a plan of action in the process of organizing and processing information.	Observe learner adopting action in the process of organizing and processing information.
Cognitive style	Learner develops a systematic and habitual mode of organizing & processing information.	Use questionnaire or psychometric test.

Two primary research traditions are related to learning styles, the psychological and the learning-centered. The psychological tradition is oriented in cognitive-perceptual research where individual differences of style are based on how learners approach tasks with a preferred strategy corresponding to a preferred mental set (Riding and Rayner, 1998). Two dimensions in which learners differ in this tradition are wholist-analytical, related to how the individual processes information, and verbalizer-imager, meaning how the individual represents information during recall (Riding and Cheema, 1991). Cognitive style can be depicted on a continuum, and independent dimensions are applied to instructional design by matching modes of the presentation of learning to the cognitive style of learners

(McLoughlin, 1999). The learning centered tradition, emerging from educational research (Riding and Rayner, 1998), is focused on the learner's active response to learning tasks and the learning environment, rather than on the intelligence and information processing characteristics of the learner (McLoughlin, 1999). McLoughlin (1999) describes how the learning centered tradition includes models by Kolb (1984) on experiential learning, Entwistle (1981) and Biggs (1979) on learner orientations to learning, and Keefe and Monk (1986) on cognitive skills and strategy development. Kolb's (1984) experiential learning model "offers an excellent framework for designing, developing, and delivering diverse learning experiences for adults, and offers instructional designers a tool for planning and designing learning activities" (McLoughlin, 1999, p.225), according to educationalists such as Rowntree (1992), Tennant (1988), and Mulligan and Griffin (1992).

Hickcox (1995) reviewed 21 learning style instruments for usability, subsequently categorizing them into a three layer system; core, middle, and outer.

...core presents learning behavior as controlled at a fundamental level by the central personality dimension. Middle layer—is related to information processing dimensions. Outer layer—is related to the interaction with the environment. (Hickcox, 1995, p 28)

Hickcox (1995) goes on to convey from the research review, "the use of learning style instruments is quite spread in the private sector. Trainers use them within human resource development seminars, particularly for communication skills, team building, conflict resolution, and intercultural communication." (p. 39).

Learning Interventions

Learning interventions are the purposeful actions taken to convey instruction that lead to a change in knowledge, skills, and attitudes (Knowles, 1978). The American Heritage Dictionary (1991) speaks of intervention as “to intervene or occur as an extraneous condition or characteristic” (p.672), as in the intervening between the current state, and that of desired learning, behavior, and performance outcomes. Danielle Riverin-Simard (1988) relates this to adult learning by conveying “when we help an individual [adult] learn, we are in fact intervening in the development of adult life (p.26). Riverin-Simard’s (1988) three-year study of 786 adults, 375 women and 411 men, across nine age strata offers insight on age-related experiences with intervention implications. For example, the twenty-three to twenty-seven year old is working off the “self-perception of his/her work role” (p.24) while the twenty-eight to thirty-two year old is “searching for a promising career path.” Either can motivate or hinder the learning process, depending on the intervention.

Learning interventions therefore include the activities, methods, instructional techniques, materials, and technologies used in the learning process, which have implications for learning objectives and subsequently evaluation of learning strategies. Learning intervention design should, therefore, be based on theories of instruction for adult learners (Claxton and Ralston, 1978, p.39).

Cillers (2000) explored learning interventions as the different pathways to accommodate learner development, or learner differences, to guide changes in organizations. The study explored the influence of transformation on the delivery of learning interventions needed for change in an organization. Cillers (2000) suggests strategic human resource development and learning interventions, are key to changing an organization.

Learning interventions were also used in the change efforts of a government manufacturing plant undertaking a major workflow redesign cited in the Silvey (2002) dissertation study. The findings linked individual, team, and organizational learning to strong pilot performance results. These results included a 55% increase in productivity, doubling of workers' flexibility to perform multiple functions, and a significant increase in team effectiveness. While these learning interventions were not specifically linked to learning styles, they were associated with team diagnostic instruments and participant observations aimed at understanding individual and group communication tendencies and preferences.

Another key finding was supporting evidence that ability to apply action learning within an environment is negatively impacted by the infrastructure for developing and sustaining team productivity, morale, and trust. The study suggested organizational change is enhanced by individual and team development (learning) and positive influences of the infrastructure, such as communication.

Intervention Design

Kolb (1984) suggests learning activities that match appropriate learning styles. Svinicki and Dixon (1987) suggest activities suited to learning phases, or modes, of Kolb's (1984) learning cycle that effectively match the learning activities to the phases of learning and thereby to the learning styles of organizational members targeted in the merger change. Toepell (1999), later applied the learning activities matching prescribed by Svinicki and Dixon, to learning needs in an Introduction to Health Studies course, subsequently reporting success and key learnings in support of such matching to gain and keep student attention,

referred to as “strategies to inspire students” (p.58). Activities suggested by Svinicki and Dixon (1987), and by Kolb (1984), are highlighted in Table 2.6.

Table 2.6 Learning Activity Suggestions

<u>Learning phase</u>	<u>Activities suggested</u>	<u>Learning style</u>	<u>Activities suggested</u>
Concrete experience CE (feeling)	films [video], games, fieldwork, laboratory work, observation	Diverging (CE & RO)	team-based case studies, group projects, brainstorming exercises
Reflective observation RO (watching)	journals, discussion, questioning	Assimilating (AC & RO)	reading assignments, lectures, analytical projects,
Abstract conceptualization AC (thinking)	building models, writing papers, creating analogies	Converging (AC & AE)	experiments, simulations, laboratory assignments, problem solving assignments
Active experimentation AE (doing)	case studies, projects, simulations	Accommodating (CE & AE)	team-based projects, group field work, unstructured assignments
<i>Adapted from Svinicki and Dixon (1987)</i>		<i>Adapted from Kolb (1999b)</i>	

These learning activities offer guidance on instructional, or learning, settings (Roberts, 1977) and methods (Shalock, 1976; Trent and Cohen, 1973). Applying a given intervention as these matching activities suggest, is not to proclaim one approach “superior to another” (Cross, 1976, p.112), rather to promote organizational change adaptation by individuals through increasing learner awareness of learning style preferences (Cranton, 1994; Brookfield, 1987) and “finding the delicate balance between supporting and challenging the learner” (Daloz, 1986). It is also intentional toward engaging the learner in a motivating way (Brookfield, 1987, p.83). As cited in learning theory literature, “individual change results from acute awareness” (Rothwell and Sredl, 1992, p.330).

Theories of Instruction

Three theories of instruction related to the adult learning theories mentioned previously include; objectives-centered, experience-centered, and opportunity-centered (Rothwell and Sredl, 1992), as outlined in Table 2.7.

Table 2.7 Instructional Theory for Learning Interventions

<u>Instruction Theory</u>	<u>Related Learning Theory</u>	<u>Instructional Focus</u>
Objectives-centered	Behaviorism	Measurable and observable instructional outcomes.
Experience-centered	Cognitivism	Learner experiences during the instructional process.
Opportunity-centered	Developmentalism	Matching learner needs to appropriate instructional experiences.

Objectives-centered instruction stresses the measurement of learning, and the rewarding of behaviors linked to the stated objectives. Objectivity comes in the form of stating the desired learning outcomes (Guthrie, 1935), correcting and rewarding learners' performance during the learning process using grade and assignment reinforcers (Skinner, 1953), and through instructors modeling the expected behavior (Bandura and Walters, 1963). Bandura in particular, also suggested the importance of gaining learner buy-in and commitment to change, which has implications on organization change effectiveness.

Experience-centered instructional theory emphasizes learners' understanding more so than behavioral change (Rothwell and Sredl, 1992), and problem solving more than knowledge accumulation. Based on the cognitive theories of learning and Gestalt psychology, instruction should focus on presenting a systems view, that is the whole process under discussion, followed by explanations of the relationships between and among the parts of the process, and how those parts relate as a whole. According to Bruner (1966),

instructors should encourage the predisposition of learners to learn, and structure the information so learners can easily assimilate it, as with the use of learning styles (Knox, 1977). Knox emphasizes; “a greater sense of self-direction can occur...as adult learners select educational activities that match their preferred learning styles...”(p.244). Tolman (1949) suggests the importance of structuring learning around problem-solving engagements, where creative ideas can be tested within the relative safety of the learning environment. Lewin (1958) suggests the intervention approach of unfreezing what is known, restructuring learner views and interpretations about that topic, then refreezing what was learned. This approach has also been used by Edward Schein (1994), as a “change management or integration intervention” (Nutt, 1992, p.197; Hellriegel, Slocum, and Woodman, 1989, pp.551-552).

Opportunity-centered instructional theory emphasizes activities that support learners’ recognition of their needs and readiness for learning (Cross, 1981, p.238). Knowles (1978) promotes the use of self-directed, autonomous, and group learning activities, giving learners the opportunity to pool individual insights and experiences, and to assess individual readiness to learn, solve problems, and face life and career changes affecting their work. Recognizing individual readiness to learn, by understanding learning preferences, is fundamental to David Kolb’s (1999b) Learning Style Inventory (LSI) described later. Carl Rogers (1969), like Knowles, supports learning activities that help learners understand their needs through reflective questioning. Piaget (1972) suggests tailoring instruction to individual learner needs, through learning experiences that allow both assimilation and accommodation. Recognizing assimilation and accommodation needs are also key aspects of the LSI (Kolb, 1999b), and supported by experiential learning theory (Kolb, 1984).

Curriculum Design

Designing curriculum based on the learning theories mentioned helps foster effective outcomes of learning among adult learners in organizations (Rothwell and Sredl, 1992, p.340). Curriculum design linking the learning outcomes to improving change integration outcomes is especially important during organization changes, such as M&A changes.

Curriculum design is concerned with eight factors outlined by Rothwell and Sredl (1992), which include goals and objectives, curriculum, organizational needs, learner needs, delivery methods, sequencing, implementation, and evaluation. Each is described in Table 2.8.

Table 2.8 Curriculum Design Factors

<u>Curriculum Design</u>	<u>Description</u>
1. Establish goals & objectives	Define the purpose, value and long-term goals for the learning.
2. Organize the curriculum	Focus the learning on individuals, work groups, job classes, departments, etc., given organizational needs.
3. Categorize the organization	Define who will receive what type of curriculum, given individual roles and organizational needs.
4. Assess learner needs	Determine what content will meet the needs of learners
5. Determine delivery methods	Determine delivery approaches, such as self-study experiences, computer-based learning, on-the-job learning mentoring, seminars, classroom instruction, group study, etc. that will best meet learner needs.
6. Determine sequence	Decide the order in which learner experiences should be offered, given logical prerequisite and scheduling considerations.
7. Implement curriculum	Implement learning experiences, which can be specifically tailored to unique characteristics of individual learners, and to work-related requirements of individual learners.
8. Evaluate curriculum	Measure the results of curriculum use, and modify as needed to ensure long-term impact on change efforts.

*Adapted from: *The ASTD Reference Guide to Professional HRD Roles and Competencies, Second Edition* (Rothwell and Sredl, 1992, pp.341-346)

Curriculum designed to incorporate the objectives-centered learning theory will structure learning experiences around specific job-related tasks, with sufficient opportunity to demonstrate acceptable behavior, while experience-centered theory leads to curriculum

designs where learning experiences focus on entire processes or larger tasks before smaller task, with sufficient opportunity to demonstrate understanding of the relationships between them. And curriculum designed to support opportunity-centered learning theory would link the learning experiences to significant life events of learners, such as job or role uncertainty surrounding M&A change.

According to Hickcox (1995), teachers and trainers need to broaden their awareness of learner preferences to more effectively stimulate student learning. Methods and curriculum are the two key aspects for teacher or trainer learning style application. Hickcox (1995) further conveys that the Kolb's Learning Style Inventory (LSI) is most typically applied to methods of design and curriculum development, in stimulating individual learning, and focusing [prioritizing] development. Prioritizing development of learning interventions is crucial for complex change environments (Burke, 2002), such as M&A environments. Understanding M&A complexities helps foster effective prioritization and development.

Mergers and Acquisitions

A merger is the combining of corporations where one corporation remains viable while the other goes out of existence (Gaughan, 1996). The acquiring company assumes ownership of the assets and liabilities of the resulting company, therefore supporting the perspective of acquisition - the act of control passing into the hands of the acquiring company.

Different terminology is found in use within the context of mergers and acquisitions, similar to cultural language found in other business realms. Bidding company and acquiring company are found to depict the same meaning in literature (Gaughan, 1996; Hawawini, 1990; McKay and Qureshi, 2001), which describes the company holding post-merger control of the combined assets. Target and acquired are common terms found describing the company from which control was assumed and existence dissolved.

Need for Synergy

Economic stimulus for the merger of target and acquiring organizations includes growth, competitive advantage, and business synergies (Zingheim and Schuster, 2001). Synergies among M&A organizations are defined as the added benefit of the deal after net gain from estimated future value of the organization post-merger (Hawawini, 1990). In other words, the post-merger processes, systems, talent, and market performance are expected to exceed the acquiring organization's performance in these areas had it remained separate. The top two reasons for failure to achieve these synergies include people problems and organizational problems related to people actions (McKay and Qureshi, 2001). Citing needed focus for effective integration to successfully achieve desired synergies, these

authors highlighted four key areas of the “people agenda” that build the case for further research on people in M&A environments. The four business issues around people include; retention of key people, identification and fulfillment of talent needs, motivation of employee performance, and culture alignment between the different organizations.

M&A Complexities

To complicate matters, mergers often result in additional mergers. When this occurs, restructuring of organizational assets is typical (Gaughan, 1996, p.365). Corporate restructuring may take on a variety of forms, from divestiture to split-ups. Cultures of two previously merged entities that amalgamate with another culture, where each had previously experienced a merger only a few years earlier, may find four cultures colliding. This is a huge undertaking for OD professionals attempting to orchestrate the change model to align the people to the strategy, and help the leaders deliver the synergies expected.

Mergers may be horizontal, vertical, or conglomerate (Gaughan, 1996). According to Gaughan (1996) horizontal mergers entail combining two competing companies, usually for the purpose of market expansion, or growth, and increased market power for meeting or beating remaining competition. Vertical mergers occur between buyers and sellers, customers and suppliers, or contractors and subcontractors, where their combined assets allow decreased cost in the supply chain, which in turn allow lower pricing, and subsequently greater competitive advantage than stand-alone operations. Conglomerate mergers reflect the combining of two companies that have no relationships like the two just mentioned, but involve diversification of the business portfolio to balance economic shifts and market fluctuations related to product and service demands (Gaughan, 1996, p.112).

Industry regulations by government have influenced mergers and acquisitions since their emergence in 1897. Antitrust laws regulating the competition in a free-market society has changed several times since the early years of M&A (Gaughan, 1996), with an ongoing attempt to prevent monopolies, company raiding, and other acquisitions by wealthy investors, that would ultimately stifle competition and put the price of goods in the hands of a few companies rather than the market as a whole. Such regulation has also helped foster unique cultures within organizations, where reactions of the people involved in planning acquisitions and the recipient of the changes have developed sensitivities to the climate either promoting the acquisition mentality, or resisting it for survivability.

The benefit to organizations engaging in M&A actions has theoretically always been positive, with a net aggregate gain for shareholders (Hawawini, 1990), or there would be no movement to accomplish so many of them. Yet there continues to be conflicting evidence of value achievement across many merging organizations. While a variety of causes for failure to meet desired objectives are discussed and debated, one cause is consistently surfacing in many references in literature regarding this topic. In organizations experiencing merger and acquisition integration, the change recipients can make or break the deal. Their actions and reactions can make the difference between success or failure in meeting the intended objectives of added value in the M&A transaction, as later defined.

There are three major components of the M&A process (McKay and Qureshi, 2001). Targeting is concerned with the initial planning and talks with the target, or organization being acquired. Transition focuses on the actual details of the written agreement and approval of the deal. Integration is aimed at bringing the organizations together in a cohesive way, once the deal is signed. This study is focused on the integration process.

The majority of unsuccessful deals can be traced back to poor execution of one or more of these stages, and the lack of clear linkage between them (McKay and Qureshi, 2001). The problem, as McKay and Qureshi (2001) point out, is the failure to carefully consider the people issues until later in the integration phase. Since these distinct phases may or may not overlap, there is often a different group of people involved in them, with different timelines and dynamics. These authors recommend early involvement by Human Resources professionals in performing due diligence on current and potential people issues and concerns, in order to realize the synergies expected from the deal.

M&A degradations (Shearer, 2001; Zingheim and Schuster, 2001; Atkins et. al., 2000; Kudla and McInish, 1999; Coult, 1999; Love and Gibson, 1999; Ruotolo, 1999; Sikora, 1998; and Sirower, 1998), the expansion of experiential learning practices depicted by Simons, Van der Linden, and Duffy (cited in Simmons, 2000), and the broadened scope of change management practices (Connor, 1992), imply changes in organizational structure, revised strategy, and organizational effectiveness measures are needed to ensure successful integration. Organization development (OD) interventions are needed to help individuals in the organization gain awareness of what is changing and why, clarity on what individual role each will play in the transition and beyond, and to assess measurable outcomes throughout the transition.

The Human Side

The human element is of significant importance to M & A organizational leaders, who strive to continue effective operation of the individual organizational entities, while integrating the two cultures into a fully sustaining and competitive single enterprise. Yet the human reactions that occur can make or break the outcomes of the change effort, as individuals seek to remain in the comfort of the pre-merger organizational alignment. Such reactions, as manifested in organizational behavior, can be linked to individual perceptions of the situational occurrences. With the advent of M&A activities taking place over a period of time, perceptions develop relative to individual learning about the events and actions. Learning therefore becomes a lense through which employees in the organization view the change.

Review Summary

Organizational change, growing in prevalence and complexity, is rooted in the organizational behavior literature. Research on organizational behaviors related to change in organizations has revealed the human reactions and behaviors to change, both positive (readiness) and negative (dysfunctional, or impaired), ways to measure these reactions and behaviors, like change orientation, and OD change interventions that help foster effective change outcomes related to awareness and understanding of these reactions and behaviors.

One type of intervention found to help influence change outcomes is learning interventions. Learning interventions are rooted in learning theory, specifically adult learning, which is most applicable to change recipients in a complex change organization. Adult learning literature suggests motivation of adult learners is linked to individual

experiences and cognitive preferences, such as learning modes and styles. This literature also links the development of learning interventions, as needed in a complex change environment – M&A, to the awareness and use of learning styles among adult learners in the environment.

The merger and acquisition literature, rooted in management science and organizational behavior theory, reveal the sensitive complexities of the M&A environment. The complexities described, such as high failure rates related to integration, suggest the need for further studies on change integration. The prioritization and development of learning interventions to foster stronger change outcomes is one aspect to study.

Chapter 3: Methodology

The research conducted in this study represents a case study of an organization change effort by a company, in the health services industry in the eastern United States. The phenomenon investigated was the relationship between individual change readiness, within the organization change context, and individual learning styles. Change readiness has been defined as the measure or degree of individually perceived acceptance or adaptation of a change occurrence (Carr, Hard, and Trahant, 1996). Individual change readiness, as measured by a change orientation scale, has been defined as the measure of individual tendencies toward acceptance and adaptation of change occurrences (Jones and Bearley, 1986). Individual learning style, as measured by a learning style inventory, has been defined as an individual's characteristic ways [or tendencies] of information processing, feeling, and behaving in and toward learning situations (Smith, 1982). Understanding relationships between learning styles and change readiness levels among individuals in an organization experiencing a major change may enable strategic development of learning interventions using Mark's (1994) three guidelines that enhance change integration. Such understanding could offer insights that help human resource developers prioritize design and development requirements, such as materials and delivery methods, and perhaps offer insights for new approaches to development specific to change integration actions for organization development professionals.

Framework

The framework for this study was constructed of the concepts of change readiness levels of organizational members, called change recipients, related to individual adaptation in organization change integration, and individual learning styles found among those change recipients. The investigation included; 1) the identification of change readiness scores and learning styles of change recipients in an organization experiencing complex organization change – corporate acquisition, 2) determination of how these scores and styles were distributed across the population investigated, 3) assessment of the relationships between change readiness scores and the individual learning styles among change recipients in the organization, and 4) assessment of the relationships between change readiness scores and common demographic variables. To enable such investigation, the following research questions were developed.

Research Questions

1. What are the critical learning needs perceived by organizational managers and non-managers to help ensure successful acquisition integration?
2. Is there a significant difference between the Org1 organizational entity and the other organizational entities with respect to their mean change readiness scores?
3. Is there a significant difference between four groups of change recipients, Accommodating, Diverging, Assimilating, and Converging, with respect to their change readiness scores?
4. Is there a significant difference in mean scores between learning style groups and the three aspects of change orientation?
5. Is there a significant difference in change readiness and impaired scores between the demographic groups of gender, age, race, job function, manager, and job change?

Research Design

This research, an exploratory case study (Borg and Gall, 1989, p.32), was designed for the purpose of describing relationships between the dependent variables change orientation [functional, non-functional, dysfunctional], readiness and impaired, and the independent variables for learning style groups [accommodating, diverging, assimilating, and converging]. Other demographic related independent variables included organizational entities [Org1, Org2, Org3, Org4, and Org5] for sought and acquiring organizational entities, as well as gender, age, race, functional role (HR, accountant, engineer, etc.), supervisory responsibility (manager, non-manager), and job change (relative to the acquisition). Based on analysis of the relationships, possible learning interventions, OD/change interventions, or both, are suggested for the organization studied.

Citing a specific example of two organizations merging, and testing for individual and organizational integration outcomes in the study, Dackert (2001) found differences in employees' perceptions of the integration between the "original organization," or acquiring, and that of the "target organization," or acquired. Also in the merger literature, the recent study by Da-Graca (2002) found significant differences in integration expectations-to-results outcomes between target and acquiring groups, suggesting an observation of both to be important to successful integration, that is, achieving the synergistic expectations. This study investigated relationships between the acquiring organization and multiple target organizations.

This study included quantitative and qualitative data collection and analysis in its design. Quantitative aspects were focused on the variables mentioned, and obtained through an online survey. Qualitative data and analysis provided insights into the organization within

the case study context, by capturing key attributes such as the operating environment or culture, the size and make-up of the employee population, key expectations and results of the organization's goals, along with time considerations and perception of the acquisitions. The qualitative data were also used in finalizing the demographic functional roles of the organization for the online survey comprising the quantitative research component.

The case study was chosen for the purpose of investigating change and learning relationships within a specific natural change setting of a complex change. The acquisition environment provided a complex organization change context, along with the convenience of multiple organizations experiencing the same organization change simultaneously, as one aspect of the investigation. As such, generalizations about data, analysis, results of the investigations, and subsequent recommendations are limited to a discussion of the organization, its setting, and the parameters of the investigation. This reporting adds insights to change readiness, learning interventions, OD/change interventions, and merger integration.

Target Population

Medium to large organizations were considered for the study due to geographic and functional complexities, the perceived need for more 'people-related' studies within medium to large M&A environments, and to help promote obtaining a sufficiently large enough sample. Organizations in the eastern United States were sought due to proximity and convenience for the researcher.

Possible populations for the study were sought through professional association contacts, by requesting organizational participation via such organizations as the Society for Human Resource Management (SHRM), the Organization Development Network (ODN),

and the American Society for Training and Development (ASTD). Other professional contacts were made through Merger Central (previously The Merger & Acquisition Journal), Linkage, Inc. – the Merger and Acquisition Conference, and The Conference Board – the 2003 Post Merger Integration Conference in New York. The company selected was first identified by a leading training professional and conference speaker, based on a collegial relationship and awareness of the acquisition complexities, where the study could add value.

The change organization used in the study was a medium-sized (500+ employees and >\$10 million in annual revenue) medical research and services company operating in the eastern United States, and experiencing multiple acquisitions within the last three years. Since complete integration of merger and acquisition organizational change can sometimes take up to five years (Blake and Mouton, 1968; Likert, 1967), the organization was faced with several integration challenges. This organization provided the necessary complexity, geographic dispersment, and proximity needed. All employees of the organization, considered change recipients, were eligible for participation in this study.

The population was comprised of 576 employees, at the initiation of the study, found in 6 regional offices and across 27 different locations, primarily in the eastern United States. 157 employees were remaining from the pre-acquisition original organization (Org1), while 80 and 11 remained from the first and second acquisitions (Org2 and Org3) respectively. 44 employees remained from the third, or most recent acquisition (Org4), while 284 were from employment started with the organization subsequent to the first acquisition, and were not part of any of the pre-acquisition companies (Org5).

Multiple functional roles, or jobs, were found in the organization, which allowed for multiple comparisons to the literature on learning styles and learning interventions. A listing

of generic multi-industry roles were developed at the beginning of the study, then revised for the population studied, based on input from the organizational prime – the contact person assigned to this researcher for company access. This added clarity for participants.

The organization's name was disguised, to protect its competitive advantage. The combined corporate organization will hereafter be referred to as BirOrg [disguised].

Sample

Within the structure of the population BigOrg, all regular full-time employees were invited to participate in the online survey aspect of the organizational study on change and learning. A random sample was selected for the one-on-one interviews, which represented managers and non-managers, at each major location/site, among all job functions, and all five organizational entities.

Names of all eligible change recipients, along with their organizational entity, hire date, and manager/non-manager status, were requested by this researcher from the organization's contact, and used for qualitative sampling. A simple random sample approach (Agresti and Finlay, 1997) was used to select participants from the list of names provided, to support a generalization use of the interview data (Swanson and Holton, 1997). This sample was inclusive of all functional groups within the organization, such as Executive, Human Resources, and Project Management.

The sample size targeted was 300. According to Borg and Gall (1989, p.233) citing Sudman (1976), the sample size for survey research should have a minimum of 20-50 in each subgroup to be analyzed. In this study, there were five primary subgroups from the population BigOrg; the organizational entities Org1 (the acquiring), Org2, Org3, and Org4

(the acquired), and Org5 (those joining without acquisition affiliation). Other subgroups compared, included the four learning style categories, the job function groups, and the demographic groups. Goodrich and Pierre (1979) cited by Borg and Gall (1989) suggest planning for 20% attrition. Therefore the recommended number of usable inventories, both of the LSI and the OCOS, needed to be at least 200. However, given the desire to test for medium effects in standardized mean difference within the relationships among the learning styles and change orientations, at a .05 alpha, an estimated 274 sample size was suggested (Light, Singer, and Willett, 1990). Further, to offset the potential for participant dropout, the targeted sample was rounded up to 300.

Instrumentation

Organizational Change Orientation Scale © (OCOS) Inventory

Jones and Bearley (1986) describe the Organizational Change Orientation Scale © (OCOS) as a self-report measure used by members of an organization to rate, on a scale of 1 to 6, their behavior tendency toward organizational change. The levels are depicted as 1=almost never, 2=seldom, 3=not very often, 4=sometimes, 5=very often, and 6=almost always. Change recipients select from these six possible choices, for each of the 36 items comprising the three categories; functional, non-functional, and dysfunctional, as depicted in Appendix A. The outcome is an identification of the individual's behavioral characteristics represented in each of the three categories.

Functional behavior, as identified by the OCOS ©, is most supportive of organizational transformational processes in organizations, such as making change happen, anticipating the need for change, problem solving, and personal self assessment toward commitment to change. Nonfunctional behavior neither supports nor resists organizational

change, through such behavior as; agreement without commitment, fence sitting, withholding support and moaning and groaning. Dysfunctional behavior involves resistance, and consists of: blaming and finger pointing, passive resistance, overt resistance, and sabotage behaviors. Items 1, 4, 7, 10, 13, 16, 19, 22, 25, 28, 31, and 34 on the survey instrument correspond to the “functional” category. Items 2, 5, 8, 11, 14, 17, 20, 23, 26, 29, 32, and 35 correspond to the “non-functional” category. And items 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, and 36 correspond to the “dysfunctional” category (Jones and Bearley, 1986).

The OCOS©, developed by John Jones and William Bearley, originated from and replaced the Organizational Change Readiness Scale cited in *Mental Measurements Yearbook* (2002, online reference search for change readiness instruments). “The OCOS© has been in use by organizations for over 17 years and has significant face validity, especially with organizational leaders, managers and organization development professionals” (W. Bearley, personal communication October 17, 2002). Although Jones and Bearley did not conduct a reliability study on the instrument beyond the OCRS, McKee (2000) tested the internal consistency of the OCOS© while conducting doctoral research using the instrument, whereby achieving a Cronbach’s alpha of .63. To further determine internal consistency of the OCOS©, this researcher calculated a Cronbach’s alpha of the online version used in this study, by surveying over 500 change recipients involved in a multiple acquisition organization change in the insurance industry in early 2004. An initial sponsor letter was sent to recipients across the organization requesting their voluntary involvement, and providing access and completion instruction to the online survey, all in the same manner as used in the primary study. 237 responses were received, with no missing data. Results from the OCOS© were analyzed using the PROC CORR procedure in SAS

8.2. Cronbach's alpha for the OCOS© inventory was .73. Each change dimension, functional, non-functional, and dysfunctional achieved a Cronbach's alpha over .70.

Two categories were derived from this model. Change impaired, was derived from adding the five disruptive behaviors from nonfunctional to the thirteen items in the dysfunctional category. Change readiness, was derived by subtracting the impaired score of each change recipient from their functional behavior score. According to Burke (2002), one's readiness to change is demonstrated in their adoption behaviors (functional) being stronger than their resistance (impaired) behaviors. These derivations are not intended to introduce a new model, or theoretical perspective, rather to simplify the comparison between groups by using a single measure of overall outcome-readiness, and a single measure of undesired organizational behavior-impaired. All category scores are reported, while the two derived scores are used for primary comparison of variables within the research design.

Permission to use the OCOS© was "granted for educational research, allowing a personally created online version" (W. Bearley, personal communication November 19, 2003) to this researcher. Access was password protected to limit participation and protect both the instrument and the participants. The original instrument, and instructions, were provided by the Human Resource Development Quarterly (HRDQ), at 2002 Renaissance Boulevard #100, King of Prussia, Pennsylvania, 19406.

Learning Styles Inventory©

The Learning Styles Inventory© (LSI) by David Kolb (Kolb, 1999b) identifies through individual self-analysis, a person's learning preference in one of four categories, or styles: Accommodating, Diverging, Assimilating, or Converging. These learning styles, account for individual cognitive and intellectual perspectives on learning and development, both inside and outside changing environments as depicted in Appendix B.

Instructions, for completing and self-scoring the LSI© instrument are contained in a 19 page booklet, along with a 2-page scoring sheet (Version 3). Self-analysis consists of 2 parts: The Cycle of Learning and the Learning Style Types. Each part utilizes the responses from the scoring sheet, added in four columns (categories) to determine plotting scores for each of the two graphs. Placement relevance for respondent scores is based on instrument testing and analysis of 1,446 adults ranging in age from 18 to 60 (Kolb, 1999a).

The Cycle of Learning (p.3, Version 3) provides a graphical representation of individual tendencies toward four constructs: Concrete Experience (experiencing), Reflective Observation (reflecting), Abstract Conceptualization (thinking), and Active Experimentation (doing). The Learning Style Types are depicted in a four-quadrant chart, with Converging on the lower left, Diverging on the upper right, Assimilating on the lower right and Accommodating on the upper left.

The instrument consists of twelve items for self-scoring. Each item is a sentence construct with four endings, which vary based on the statement in each item, by using a "best describes them" scoring. The respondent is instructed within the instrument to think about personal learning situations, and how they learned best in those situations. The

respondent scores each item: 4=best describes me, 1=least like them, with 3 and 2 reflecting gradually lowering likeness for them respectively.

The Learning Styles Inventory, along with Experiential Learning Theory on which it is based, has been used in 990 (Kolb and Kolb, 1999a) studies since its origination in 1976. These multidiscipline studies have included 206 doctoral dissertations, 535 journal articles, and 99 books and chapters on the topics, establishing significant face validity for the instrument use. Reliability coefficients for Kolb’s (1984) LSI© instrument were established by Kolb (1984) through calculation of Cronbach’s alpha scores for each of the categorical elements of the instrument, as listed in Table 3.1.

Table 3.1: Cronbach’s Alpha on LSI

Learning Element	Cronbach alpha - Standardized Scale
Concrete experience	0.82
Reflective observation	0.73
Abstract conceptualization	0.83
Active experimentation	0.78
Abstract-Concrete (AC-CE)	0.88
Active-Reflective (AE-RO)	0.81

The first version of the LSI was released in 1976 and received wide support for its strong face validity and independence of the two ELT dimensions of the learning process (Marshall & Meritt, 1985; Katz, 1986). Although early critique of the instrument focused on the internal consistency of scales and test-retest reliability, a study by Ferrell (1983) showed that the LSI version 1 was the most psychometrically sound among four learning instruments of that time. In 1985 version 2 of the LSI was released and improved the internal consistency of the scales (Veres, Sims, & Shake, 1987; Sims, Veres, Watson, &

Buckner, 1986). Critiques of this version focused their attention on the test-retest reliability of the instrument, but a study by Veres, Sims, and Locklear (1991) showed that randomizing the order of the LSI version 2 items results in dramatic improvement of test-retest reliability. This finding led to an experimental research and finally to the latest LSI revision, LSI Version 3 (Kolb 1999b). The LSI version 3 has significantly improved psychometric properties, especially test-retest reliability (see Kolb, 1999b).

Permission to incorporate the LSI into the online survey for this study was “granted” (November 19, 2002, by signed agreement on file at HayMcBer, Boston, MA). Access to the online survey was password protected to limit use to educational research participants only, per agreement.

Data Collection Procedures

Merger organizations were actively solicited for participation in this research, given parameters stated previously. Emails were sent to the research and special interest group primes for SHRM, ASTD, ODN, Linkage, Inc., and the Conference Board explaining the research topic and status, and requesting their assistance in finding a merger organization which might be interested in sponsoring the research. Emails were also sent to three organizations already expressing interest but unconfirmed. Each lead was followed up with a phone call to the organization, along with an email summarizing the research scope, requirements, and benefit to the organization. Each inquiry was tracked by organization name, contact and response. Several organizations initiated participation in the study, but disengaged between the review of survey items and the invitation to organization change recipients for participation. Feedback suggested the change orientation language to be

uncomfortable for employees of their organizations, and therefore more intrusive than intended. Modifications to this approach included references to organizational behavior literature on the normalcy of resistant behavior and the benefits of knowing where it exists. Subsequently, multiple organizations engaged for full participation. The selection of a specific organization for this study, referred to as the sponsoring organization, was based on proximity convenience and organizational availability to start and complete the research process sooner, availability by an assigned organization prime to provide participant information and support, and by the potential interest and availability of organizational members to participate in the interviews.

Preceding the actual engagement with the sponsoring organization to begin participation in this study, approval by the Institutional Review Board (IRB) for the use of human subjects in research studies, was requested and obtained. IRB approval is documented in Appendix C.

Once the sponsoring organization was identified, an initial meeting was established to review mutual expectations, research parameters, contact and researcher roles and responsibilities, and communication strategies for the duration of the research. Those present included the top Human Resources executive sponsoring the research, an organizational prime assigned by the executive, and this researcher. The Sponsoring Executive assumed the role of communicating the initial participant invitation and the review of study requirements. The Organizational Prime assumed the role of being the ongoing point of contact for assistance in arranging the interview meetings, providing the employee listing from which a random sampling was performed, and for obtaining key organizational documents and entrance when needed to observe the parameters of the organization. This researcher

assumed the role of communicating the information and participation needs, conducting the study, maintaining the confidentiality and integrity of the business, and communicating the findings.

An initial employee list was requested from the Organizational Prime containing the employee name, length of service (used to depict whether pre-merger), pre-merger affiliation as marked in the HRIS, and current supervisory status (manager or non-manager), of all full-time employees eligible to participate in the study. Excluded from the list were contractors, typically from government agencies for the life of a contract, and temporary staff, supplied by workforce agencies. Subsequently, a requested update to the list included employee location. These data were used for two purposes: establishing the baseline detail of employees in the organization, and for random selection of ten interview candidates.

While the HRIS contained data on age, gender, and race, these were not requested due to HIPPA compliance guidelines, and were instead solicited voluntarily from the individual participant, which is allowable under HIPPA. What was derived from the requested list, by this researcher, was a high-level organizational profile depicting approximate numbers, or percentages of male and female employees, employee locations, average length of service by organizational entity, and of manager/non-manager status. These data were used in comparing the survey participants and the randomly selected interview participants, and to help describe the organization and its environment (Agresti and Finlay, 1997).

Survey

The online survey, depicted in Appendix D, was developed by this researcher, in collaboration with a paid Web Design professional, and published to

<http://www.changeandlearning.org/acquisitions>, a site established solely for the purpose of this research. The site was established with a private internet service provider (ISP), distinct from the sponsoring organization, the researchers employment, and the educational institution, at the researcher's expense. The ISP was known by the researcher to provide the integrity and confidentiality of potentially sensitive healthcare information, with a commitment to do the same for this research, and was able to establish the site quickly, and ensure technical support was readily available.

The online survey design included an introductory greeting to the 3-part survey, and entry only through an acceptable username and password, assigned confidentially to the sponsoring organization, by this researcher, to help ensure data integrity. The password system was used to allow trial users to test the survey, and potential sponsoring organizations to view the survey, while providing a tracking mechanism for this researcher. The online survey design was comprised of eight pages after the introduction. The first two pages gathered the demographic data, followed by three pages that gathered change behavior data, twelve items per page, followed by two pages gathering learning preferences. The final page thanked change recipients and provided a link to email this researcher with any feedback or questions regarding the study. Incorporated into the change orientation section, was the ability to click on, or select, words or phrases which could be misinterpreted, and obtain a pop-up screen with the appropriate definition. Also incorporated into the online survey design, was a selectable pop-up screen for an explanation of the research study and its relevance, under the link called 'Research,' and instruction for completing the 3-part survey under the link called 'Instructions.' Both of these selections appeared at the top of all eight pages, and could therefore be selected by the change recipient at any time during the

process, without backing up to a previous screen. Transitions from one screen to another were designed as follows. Entering the assigned username and password, and selecting the 'Next' button at the bottom of the screen would initiate the process, and transition the change recipient to Page 1. If an incorrect username, or password, was entered, the initial screen would reappear, and Page 1 would not be accessible. With Page 1 accessed, all demographic items required completion, and the 'Next' button at the bottom of the page selected before a screen transition to Page 2 would occur. If an item was skipped, and "next" selected, the same screen would reappear with the selected items still selected, along with a message prompt at the top of the page in red suggesting: " You failed to select a Function." This prompt, was followed by a statement in green typeface suggesting; "Please respond to the skipped questions/statements, and select 'Next'." This procedure was repeated on all remaining pages, except for one variation on Pages 3-5. On these pages, related to the change behaviors, the procedure required modification to meet the IRB requirement to make these statements non-mandatory. Therefore, the survey design included for these pages, a single reminder prompt for each incomplete item. If the item was skipped after the prompt, and 'Next' chosen again, the screen would transition to the next page in the survey. Pages 6 and 7, deemed non-intrusive, required all items to be completed, following the same procedure as Pages 1 and 2. Page 7 also contained a 'Submit' button at the bottom, rather than 'Next.' Upon selection of the 'Submit' button, data for all items populated the database, assigning a sequential number to the change recipient, based on timing of submission. The final screen, or page of the survey, provided a thank you for participation, the researcher's contact information and email link, and a button to 'Close' the session.

The survey data, when completed by change recipients, were populated to a Microsoft Access database maintained on the ISP confidential server. Only this researcher and a single ISP administrator had passcode authorization to the database after the participation began by the sponsoring organization.

An initial email was drafted by this researcher, collaborated with the Executive Sponsor, and sent by the Executive Sponsor to all change recipients identified in the employee list mentioned above. This email, depicted in Appendix E (with organizational identity disguised with stated naming convention), stated a two-week participation interval for change recipients desiring to voluntarily participate. A surge of responses occurred within the first three days, followed by a quick decline. Responses were monitored daily through report generation downloaded from the MS Access database, by this researcher. The Organizational Prime was asked to send a reminder email to all change recipients on the same employee list ten days later, to encourage participation and extend the deadline by one week. Again the responses surged for three days, and quickly declined. However, due to technical difficulties with the website during the third week, a third and final email appeal was drafted by this researcher, and sent by the Organizational Prime, to the same list of employees (n=576), expressing the need for stronger participation and timely response to complete the study, and extending the deadline one additional week, while also reminding them the study “is totally voluntary, and completely confidential.” Again, the responses surged for three days, and declined. Upon reaching the final deadline, a memo was drafted by this researcher, to the Executive Sponsor and Organizational Prime, advising of the participation rate, by total number, by organizational entity, and by manager/non-manager status, as reported in Chapter 4.

Interviews

Individual interviews were designed to capture the context of the acquisition change environment among change recipients, specific to BigOrg, and to the different organizational entities. Therefore, change recipients were interviewed from all five entities. Based on potential differences in perspectives between managers and non-managers, and between pre-acquisition cultures, one manager and one non-manager was interviewed from each entity, with a preferred focus on the geographic location of the employee base for each pre-acquisition entity. For example, if the pre-acquisition employee base, or where the majority of employees worked, was Raleigh, North Carolina, then a preferred focus by this researcher was on interviewing a manager and a non-manager in Raleigh, for that particular entity. Two criteria were established for participation: the change recipient must have at least one year of service with BigOrg, or one of the acquisition organizations, and the person must be willing to voluntarily describe their experiences related to the acquisition activities.

Selection of interview participants was based on a random selection process using the employee listing described earlier. Names were listed in order of hire date, with most senior individual listed first, and so forth, with the most recent hire listed last. The list, provided in a Microsoft Excel spreadsheet, provided the pre-acquisition entity affiliation and manager/non-manager status. This researcher sorted the list based on organizational entity and manager status, creating ten separate worksheets with the data. Each sheet remained sorted by hire date rather than any demographic characteristic. Using a separate printout of each worksheet, a simple 3 by 7 random selection was conducted. Beginning at the top of the page, and counting down to the third name, that name became the first randomly selected participant. Counting down to the seventh name after the first selection provided

identification of the second potential participant, and so forth until ten names were identified from each list. This procedure was used for eight out of the ten lists. A slight variation was necessary for the non-manager list of Org1 and Org5. These lists used a 3 by $n/7$ approach, where n was the total number of names listed. All other steps were the same. This procedure ensured the same opportunity of selection for those names at the bottom of the list as those at the top. The first five names selected from each of the ten lists were then used to request contact information; phone number and email address, from the Organization Prime. Using this procedure allowed limited information dissemination by BigOrg, while maintaining confidentiality of those interviewed. BigOrg was told that any one of the five selected could be the person interviewed. The Organization Prime then notified the supervisor of all fifty identified in the selection list to ensure time away from their job to participate in the interview, if called upon and voluntarily chose to do so, was approved by the organization. During this step, the Organization Prime found two of the employees had recently terminated employment, therefore dropping them from the list. Upon receiving the contact information, this researcher called each person on each list, prioritizing based on proximity to the major location for the entity affiliation. For example, if from the five names identified for Org1, three were in Raleigh and two were in Wilmington, a potential outlying area, those located in Raleigh were called first, then the remaining names were called. The first change recipient to take or return the researcher's call, and to voluntarily choose to participate, was acknowledged as a participant and subsequently interviewed. On eight out of ten of the lists, the first or second person called expressed interest and willingness to voluntarily participate. In two of these, the first person called declined due to workload. Of the remaining two lists, none of the employees named were reachable by telephone, neither returned a call from the

message left within the allotted four days. Therefore, the second half of the random selection names, i.e.: names 6 to 10, for these two groups, were then submitted to the Organization Prime requesting their contact information. This information was received within 24 hours, and each name was called using the same prioritization process as described above. The remaining two participants were confirmed the following day, however, one called the next day to decline. The next person on the list was called, and commitment to participate was received.

Interviews were scheduled across a two-week period. The first week included interviews conducted in three different geographic locations and four company sites, with travel to and between locations required by this researcher. The remaining interviews were scheduled for the second week, but after the first interview, facilities were closed due to inclement weather – snow and ice. The final interviews were conducted the following week, in different geographic locations and three company sites.

Interviews followed a semi-structured interview guide, using a simple metaphor elicitation technique, as depicted in Appendix F. Each Interview Participant (IP) was asked in advance, when volunteering to participate and confirming their interview schedule, to bring 3-4 pictures that the change recipient would use in the interview process. The primary research question in the interview asked: “What are your thoughts and feelings about the acquisitions at BigOrg, and the changes resulting from those acquisitions?” Each IP was asked to describe their pictures and how those pictures helped answer the primary research question. Probes were used when needed to determine culture characteristics and learning activities available or needed in the organization. Specific learning or training requirements for successful acquisition integration were probed toward the end of the interview.

Each interview was initiated by this researcher in greeting the IP, in gaining consent for voluntary participation, and in getting agreement to record the interview. The actual consent form, as approved by the IRB, was read to the IP, and their response to: “Based on what I have read, do you choose to voluntarily participate in this study?” was recorded on audio tape. Within the consent form was the statement: “If at any point in time you feel uncomfortable with a question, you may choose not to answer it. If you should at any point feel uncomfortable with the process, you may tell the researcher, and he will discontinue the interview and destroy the tape and all notes associated with this interview.” None of the randomly selected IPs chose not to participate in the interviews, nor did they express any concerns about the process. Each interview was concluded with a brief expression of thanks, stopping of the tape, and sealing the tape, and all notes taken in the interview in a plain white security envelop with only a coded label for the interview, based on the organization entity and manager status. For example, the employee interview from Org1 was sealed in an envelope labeled: CO1EE, for company 1 employee, and the Manager interview for Org1 was labeled CO1M. An invitation to ask any questions about the study was also offered after taping stopped.

Interview data were transcribed from audiotape to a Microsoft Word document, one document for each interview. Each transcription was coded the same way as the tapes and notes. Each transcript was summarized in three areas based on coding developed from the interview guide: demographics of participant, perspectives on the acquisition change, and perspectives on learning or training available and recommended. These data are reported in Chapter 4: Findings.

Data

Change

Data collected using the Organizational Change Orientation Scale (OCOS) was continuous (interval) based on actual responses to 36 items, on a Likert type scale of 1-6, with 1 being low, and 6 being high. 12 items provided cumulative scoring for each of 3 categories, where highest scores reflected the “primary pattern” of change orientation behavior, as a measure of change readiness. The categories and associated items are depicted in Table 3.2.

Table 3.2: OCOS Categories

<u>Category:</u>	<u>Description:</u>
Functional	Items* 1,4,7,10,13,16,19,22,25,28,31,and 34.
Non-Functional	Items* 2,5,8,11,14,17,20,23,26,29,32,and 35.
Dysfunctional	Items*:3,6,9,12,15,18,21,24,27,30,33,and 36.
*Cumulative score of 12-72 on each category	

To reflect specific areas on which to focus interventions, select Non-functional and Dysfunctional items were grouped/combined as category “Impaired.” Impaired is a cumulative score on items 3,5,6,8,9,12,15,18,20,21,24,27,30,32,33,35,and 36. Change Readiness is calculated as Functional minus Impaired cumulative scores.

Learning

Data collected using the Learning Styles Inventory (LSI) - Independent variable – were ordinal for the 12 items tested, categorical when aggregated 12 items, with 4 ordered

choices, 48 total responses possible numbered: L1A, L1B, L1C, L1D, L2A, L2B,..L12A, L12B, L12C, and L12D. Items were calculated to derive each of the four categories as instructed by Kolb (1999b).

First, the “learning modes” of concrete experience, or CE, abstract conceptualization, or AC, reflective observation, or RO, and finally active experimentation, or AE were calculated. This was completed by adding the rank numeric scores from each item related to each mode, as listed in Table 3.3.

Table 3.3: Learning Mode Calculations

<p>AC = Sum: L1B, L2B, L3A, L4D, L5C, L6D, L7C, L8B, L9D, L10D, L11C, & L12A. CE = Sum: L1A, L2C, L3D, L4A, L5A, L6C, L7B, L8D, L9B, L10B, L11A, & L12B. RO = Sum: L1D, L2A, L3C, L4C, L5B, L6A, L7A, L8C, L9A, L10A, L11B, & L12C. AE = Sum: L1C, L2D, L3B, L4B, L5D, L6B, L7D, L8A, L9C, L10C, L11D, & L12D.</p>

Secondly, the AC-CE continuum scores, reflecting the change recipients’ orientation toward “thinking” and “experiencing,” and the AE-RO continuum scores, reflecting the change recipients’ orientation toward “doing” and “reflecting” were calculated. Calculations were completed by subtracting the CE total from the AC total, and by subtracting the RO total from the AE total, as portrayed in Table 3.4.

Table 3.4: Learning Mode Continuum Calculations

<p>AC-CE: If $AC-CE \leq 3$, then the change recipient was identified as “experiencing” If $AC-CE > 3$, then the change recipient was identified as “thinking” * The distance from 3 on the continuum suggests the strength of the learning mode, (e.g: -10 is stronger experiencing, 19 is stronger thinking).</p> <p>AE-RO: If $AE-RO \leq 5$, then the change recipient was identified as “reflecting.” If $AE-RO > 5$, then the change recipient was identified as “doing” * The distance from 5 on the continuum suggests the strength of the learning mode, (e.g: -10 is stronger reflecting, 19 is stronger doing).</p>
--

The learning styles, Accommodating, Diverging, Assimilating, and Converging, as were determined from these calculations. Each style is listed in Table 3.5, along with the coding used in SAS 8.2.

Table 3.5: Learning Styles Determination

<u>Learning Style:</u>	<u>Determination:</u>	<u>SAS 8.2 Coding:</u>
Accommodating	If $AC-CE \leq 3$ and $AE-RO > 5$ then	“LearnStl = 1”
Diverging	If $AC-CE \leq 3$ and $AE - RO \leq 5$ then	“LearnStl = 2”
Assimilating	If $AC-CE > 3$ and $AE-RO \leq 5$ then	“LearnStl = 3”
Converging	If $AC-CE > 3$ and $AE-RO > 5$ then	“LearnStl = 4”

The demographic variables used in this study included entity, function, gender, age, race, manager status, and job change status. Coding for these variables are listed in Appendix G.

Data Analysis and Statistical Procedures

Data were analyzed using statistics procedures including an independent samples *t* test, to test for group differences among variables (Agresti and Finlay, 1997; Hatcher and Stepanski, 1994; Agresti, 1984), and an analysis of variance (ANOVA) for single criterion variables of interval data (readiness) and multiple variables of nominal data (organizational entities, function, manager). A multiple analysis of variance (MANOVA) was also used to compare multiple dependent variables simultaneously, and compare mean subgroup scores. Graphic plotting and analysis of change scores and learning categories were also utilized.

To help answer the research questions, a series of descriptive, comparison, and association statistics were conducted (Hatcher and Stepanski, 1994). Frequency distributions of the variables were depicted, using percentages. Further descriptive analysis included mean scores of change readiness for each organizational entity, the learning style profiles by entity, and select demographic variables within the study design.

Means for each of the change orientation categories overall, and by learning style were depicted. Also reported were the standard deviations of the change scores, to reflect how widely the responses vary around the mean. To answer each quantitative research question posed, the null hypothesis tested and the statistic used are as follows:

2. Is there a significant difference between the Org1 organizational entity and the other organizational entities with respect to their mean change readiness scores?

H₀: There is no statistically significant difference in the mean change readiness scores of Org1 and, those of Org2, Org3, Org4, or Org5.

To test for the null hypothesis “There is no significant difference between Org1 and the other organization entities with respect to their mean change readiness scores,” an independent samples *t* test was performed, using SAS 8.2. The *t* test, which tested for group differences, generated a *t* statistic and corresponding *p* value, or probability of obtaining that *t* statistic. If the *t* statistic was high, and the *p* value was < 0.05 the null hypothesis was rejected, and a conclusion drawn that there was a difference between scores. This means there was only a 5 in 100 chance that a *t* statistic of this value would be obtained if the null hypothesis had been true.

3. Is there a significant difference between four groups of change recipients, Accommodating, Diverging, Assimilating, and Converging, with respect to their change readiness scores?

H₀: There is no statistically significant difference in the mean change readiness scores of change recipients with the learning style Accommodating, Diverging, Assimilating, or Converging.

Using the LSI questionnaire responses, all randomly selected change recipients were assigned to a learning style group, e.g: Accommodating, Diverging, Assimilating, or Converging. These group assignments were used in comparing change readiness and impaired orientation scores between the groups.

To test the null hypothesis “there is no difference between the four learning styles with respect to their mean scores on the dependent variable change orientation in the merger population,” an analysis of variance (ANOVA) statistic was performed using the SAS System’s General Linear Model (GLM).

This was first done by computing an F statistic using the GLM procedure, and checking for the size of the F statistic and the associated p value. A large F statistic with a small p value, less than .05, would indicate a statistically significant difference between the Learning Style groups. Where this occurred, the null hypothesis was rejected, and a tentative conclusion stated that in the population at least one of the four groups differs from at least one of the other three groups.

To determine which groups were significantly different from each other, the multiple comparison procedure Tukey’s HSD test (for honestly significant difference) was performed using the SAS system PROC GLM. This test “is especially useful when groups studied have unequal numbers of observations” (Hatcher and Stepanski, 1994, p.214), which may occur

in sampled groups of similar job professions where diversity in learning styles may not be prevalent (Kolb, 1984).

4. Is there a significant difference in mean scores between the learning style groups and the three aspects of change orientation?

H₀: In the population, there is no statistically significant difference in mean scores between learning style groups and the three aspects of change orientation (functional, non-functional, dysfunctional).

To test the null hypothesis “there is no difference between learning style groups when they are compared simultaneously on the dependent variables,” the multivariate analysis of variance (MANOVA) statistic was performed using the SAS System’s procedure General Linear Model (GLM). MANOVA produced a single F statistic for the model (all three dependent variables-functional, non-functional, and dysfunctional) derived from a Wilk’s lambda test. Where the F statistic was significant (p value < 0.05) the null hypothesis was rejected, and a conclusion made “there is a difference between learning style groups and at least one of the change orientation dependent variables.” Where the F statistic was not significant (p value > 0.05), the null hypothesis could not be rejected, and no further interpretation of the model was conducted. The conclusion was “there is no significant difference...”

To determine where the difference did exist, the F statistic of each of the three dependent variables (functional, non-functional, and dysfunctional) was reviewed for significance. The Tukey multiple comparison test, performed by the SAS procedure above, was then be interpreted to determine which pairs of groups were significantly different from one another.

5. Is there a significant difference in change readiness and impaired scores between the demographic groups gender, age, race, job function, manager, and job change?

H₀: In the population, there is no statistically significant difference in mean scores between the dependent variables (readiness, and impaired) and the independent demographic variables gender, age, race, job function, manager, and job change.

To test the null hypothesis “there is no difference between the dependent variables (readiness and impaired) and the independent demographic variables gender, age, race, job function, manager, and job change,” the multivariate analysis of variance (MANOVA) statistic was performed using the SAS System’s procedure General Linear Model (GLM). MANOVA produced a single F statistic for the model (both dependent variables - readiness, and impaired) derived from a Wilk’s lambda test. Where the F statistic was significant (p value < 0.05) the null hypothesis was rejected, and a conclusion made “there is no significant difference between the dependent variables (readiness and impaired) and the independent demographic variables gender, age, race, job function, manager, and job change. Where the F statistic was not significant (p value >0.05), the null hypothesis could not be rejected, and no further interpretation of the model was conducted. The conclusion was “there is no significant difference...” To determine where differences did exist, the F statistic of each of the two dependent variables (readiness, and impaired) was reviewed for significance. The Tukey multiple comparison test, performed by the SAS procedure above, was then interpreted to determine which pairs of groups were significantly different from one another. Results are described in Chapter 4.

Chapter 4: Results

Introduction

Two hundred forty five surveys (43% response rate) were completed online at www.changeandlearning.org/acquisitions. Four of the surveys were unusable due to missing data in substantially all items. The remaining 241 (n=241) comprise the overall sample size. The results from the 241 responses are described in the following paragraphs, and depicted in tables and figures included. Individuals that responded to the survey, are referred to as change recipients, as previously defined.

Ten interviews were completed, which consisted of one manager and one non-manager from each of the five organizations comprising the merger and acquisition case environment. Summary of interview responses are described in the following paragraphs on Question 1 findings.

Descriptive Statistics

Of the change recipients responding, one hundred fifty-two were female (63%) and eighty-nine male (37%). Seventy-six managers (32%) were among them, along with one hundred sixty-five non-managers (68%). Ages included fifteen under twenty-five (6%), thirty-eight between twenty-five and thirty (16%), forty-four between thirty and thirty-five (18%), forty-seven between thirty-five and forty (19%), thirty-one between forty and forty-five (13%), twenty-six between forty-five and fifty (11%), twenty-one between fifty and fifty-five (9%), and nineteen over fifty-five (8%). While the majority of change recipients self-identified as Caucasian (77%), others were African-American (11%), Hispanic (3%),

American Indian (1%), African (5%), and other (3%). Forty-three (18%) of the change recipients reported they had changed jobs related to the acquisition.

Eighty-five change recipients responded from Org1 (35%), thirty-three from Org2 (14%), five from Org3 (2%), nineteen from Org4 (8%), and ninety-nine from Org5 (41%). All entities responded at 35% or higher. For an analysis of response rates by organizational entity, see Appendix H. Among the seventeen functions across the organizational entities, the greatest number of change recipients were part of Project Management (16%), IT-Programming (12%), Administrative Support (11%), Other (10%), Health Communications (7%), and Peer Review Support (6%) job functions. All others were below 5% by function, as depicted in Appendix I. Previous job functions reported by change recipients included Other (16%), Project Management (15%), IT-Programming (11%), Administrative Support (10%), Health Communication (7%), Peer Review Support (5%), and IT-Computer support (5%). All others were below 5% by function, also reported in Appendix I.

Change

Mean change scores, with standard deviations for the organization are reported in Table 4.1. Functional behavior scores ranged from 13 to 70, with a mean score of 50, rounded to the nearest whole number. Non-functional scores ranged from 23 to 59, with a mean score of 39. Dysfunctional scores ranged from 13 to 45, with a mean score of 27. Impaired scores ranged from 19 to 67, with a mean score of 38. Readiness scores ranged from -32 to 42, with a mean score of 12.

Table 4.1: Mean Change Scores for BigOrg

	BigOrg (n=241)			
	Mean	SD	Low	High
Functional	49.80	10.04	13.00	70.00
Non-functional	38.98	6.46	23.00	59.00
Dysfunctional	26.71	6.92	13.00	45.00
Impaired	38.21	10.21	19.00	67.00
Readiness	11.59	14.56	-32.00	42.00

The mean change scores and standard deviations grouped by change behavior are reported in Table 4.2. Eight out of thirteen functional behavior items resulted in mean scores above 4.00, on the 6-point scale. The highest functional behavior scores were recorded on items C1 (4.72), C34 (4.57), C10 (4.48), C4 (4.45), C19 (4.37), and C25 (4.32) consecutively. All others were between 4.22 and 3.00 consecutively. Standard deviations on these were moderately close, ranging from 1.12 (low) to 1.59 (high).

Table 4.2: Change Item Mean Scores by Change Behavior Type

BigOrg (n=241) Change Behavior	36 Change Items Surveyed											
	Functional	C1	C4	C7	C10	C13	C16	C19	C22	C25	C28	C31
M	4.72	4.45	3.00	4.48	4.22	3.96	4.37	4.15	4.32	3.66	3.98	4.57
SD	1.29	1.22	1.42	1.21	1.29	1.35	1.25	1.25	1.17	1.59	1.41	1.12
Non-functional	C2	C5	C8	C11	C14	C17	C20	C23	C26	C29	C32	C35
M	3.18	2.33	2.39	4.23	3.91	3.73	1.97	4.57	4.19	3.66	2.24	2.60
SD	1.43	1.19	1.27	1.29	1.26	1.36	1.15	0.92	1.21	1.30	1.26	1.40
Dysfunctional	C3	C6	C9	C12	C15	C18	C21	C24	C27	C30	C33	C36
M	2.10	2.84	1.63	1.91	1.92	4.00	1.91	1.95	2.51	1.47	1.57	3.03
SD	1.23	1.46	0.94	1.15	1.13	1.18	1.16	1.14	1.34	0.89	0.95	1.46

The mean non-functional behavior scores demonstrated the widest variation in scoring among items. Scores ranged from 4.57 (high) on item C23 to 1.97 (low) on item C20. Standard deviations were also broader than on functional behavior scores, varying from 0.92 (low) to 1.43 (high).

Dysfunctional behavior scores varied widely. The highest dysfunctional mean scores occurred on change items C18 (4.00), C36 (3.03), C6 (2.84), C27 (2.51), and C3 (2.10) consecutively declining. All others were below 2.0 on the 6-point scale. Standard deviations varied more on dysfunctional scores than on the others, ranging from 0.89 (low) to 1.46 (high). Change behavior items are included in Appendix D.

Impaired change scores are depicted in Figure 4.1. Scores for C18 were the highest, followed by C36, C35, and C6 consecutively. Items C3, C5, C8, C27, and C32 were also over 2.0, in sequence.

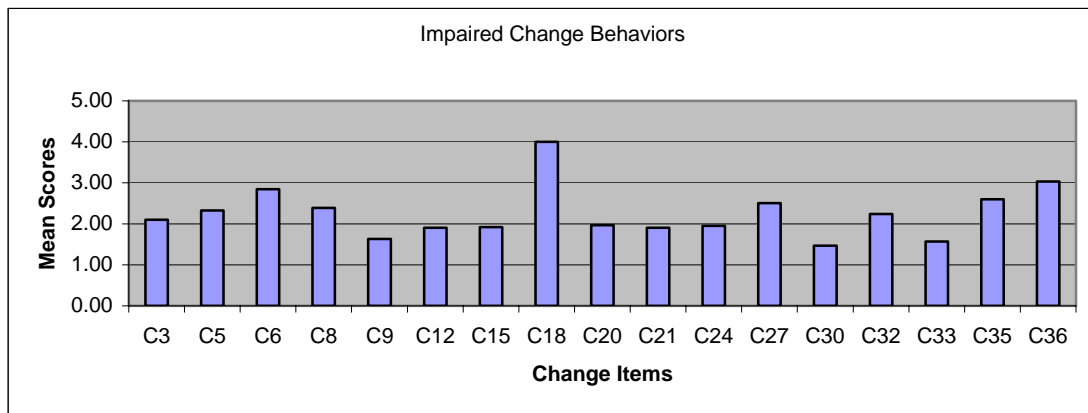


Figure 4.1: Impaired Change Behavior Mean Scores

Impaired mean change scores and standard deviations are reported in Table 4.3.

Dysfunctional items and five non-functional items are analyzed together.

Table 4.3: Change Item Mean Scores for Impaired Change Behavior

Change Behavior	BigOrg (n=241) 17 Change Items																
	C3	C5	C6	C8	C9	C12	C15	C18	C20	C21	C24	C27	C30	C32	C33	C35	C36
Impaired	2.10	2.33	2.84	2.39	1.63	1.91	1.92	4.00	1.97	1.91	1.95	2.51	1.47	2.24	1.57	2.60	3.03
	1.23	1.19	1.46	1.27	0.94	1.15	1.13	1.18	1.15	1.16	1.14	1.34	0.89	1.26	0.95	1.40	1.46

Change scores are further reported in the following paragraphs, by organizational entity, function, and manager status.

Learning

Based on the accumulated scores on the learning styles portion of the survey, the learning modes aggregated across change recipients responding are depicted in Figure 4.2. One hundred sixty-five change recipients indicated they use abstract conceptualization (68%) more so than concrete experience when processing new information. Seventy-six indicated using concrete experience (32%) more often than abstract conceptualization. Of these change recipients, one hundred thirty-four indicated they use active experimentation (56%) slightly more often than reflective observation. And one hundred seven indicated using reflective observation (44%) more often than active experimentation.

As the diagram illustrates, a balance between AE, CE, and RO were found. AC reflected the strongest new information processing, or learning mode, for BigOrg.

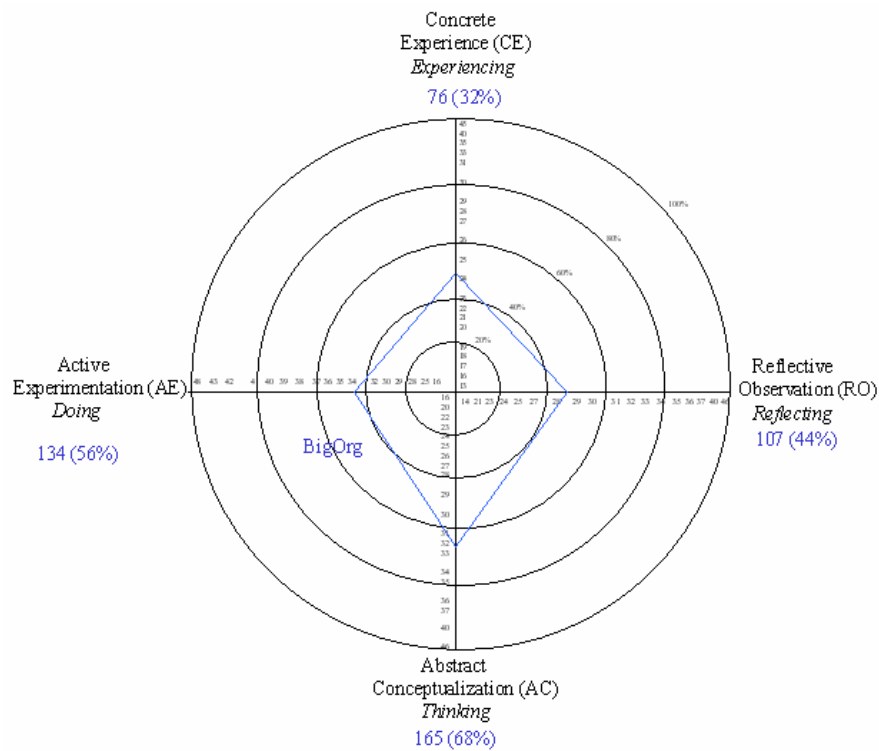


Figure 4.2: BigOrg Learning Modes Aggregated for Change Recipients (n=241)

Learning styles found among BigOrg change recipients were 49 Accommodating (20%), 29 Diverging (12%), 78 Assimilating (33%) and 85 Converging (35%). Figure 4.3 depicts the organizational profile of learning styles found in the organization, based on the sample. The aggregated calculations of AE-RO and AC-CE indicated a BigOrg dominant learning style as Converging. Additional profiling of learning styles is depicted for the five organizational entities and seventeen functions found in this study in the paragraphs that follow.

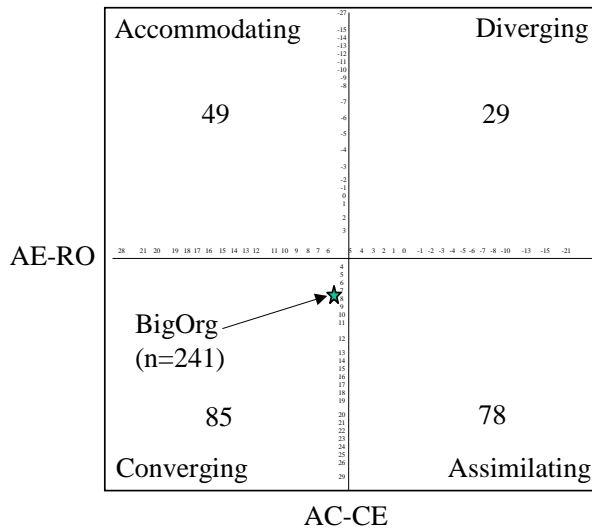


Figure 4.3: BigOrg Learning Styles Aggregated (n=241)

Organizational Entities

Demographic, change, and learning details for the five organizational entities are reported in Appendix J, as reprinted outputs from SAS procedure PROC TABLES. Org1 had the largest number of managers (39%) who responded to the online survey, followed by Org5 managers (29%), when compared to all entities. Org5 had the highest number of non-managers (47%) followed by Org1 non-managers (33%). All but Org5 had approximately 40% managers and 60% non-managers. Org5 had the highest difference between managers (22%) and non-managers (78%). Approximately 60% or more of all change recipients from each entity were female. Org4 had the highest number of females (84%). Most change recipients were between 30 and 45 years of age for Org1 (55%), Org2 (45%), Org3 (80%), Org4 (58%), and Org5 (45%). Org2 had the oldest population over 50 (30%), and Org5 had the youngest population under 30 (32%) compared to the other entities. Org1 demonstrated the most diversity on race, with twelve African Americans (14%), four Hispanics (5%), one American Indian (1%), five Asian (6%), sixty Caucasian (71%), and three Other (3%).

Org3 had the least diversity reported, with one Asian (25%), three Caucasian (75%), and one unreported. Org1 also had the largest number of change recipients in IT-Data entry and Warehousing (60%), IT-Programming (48%), IT-Web Design (60%), Project Management (33%), Executive (75%), and Scientist (57%) job functions. Org2 had the highest number of change recipients in Production and Graphics (50%) and Peer Review Support (43%) functions. Org4 had more change recipients in the Clinical Trials Support (67%) function than all other entities. Org5 excelled in the number of change recipients in Human Resources (63%), Other (46%), Administrative Support (54%), IT-Computer Support (50%), Statistics (70%), and Accounting/Finance (50%) job functions. Org1 and Org5 were tied on the number of change recipients in the Health Communications (41%) function.

Change readiness scores found across the five organizational entities are depicted in Figure 4.4. Org4 demonstrated the highest readiness, followed by Org5. Org3 demonstrated the lowest readiness, followed by Org2 and Org1. Org1, Org2, and Org3 scored lower on readiness than the overall BigOrg mean score, that is, the average of all entities together.

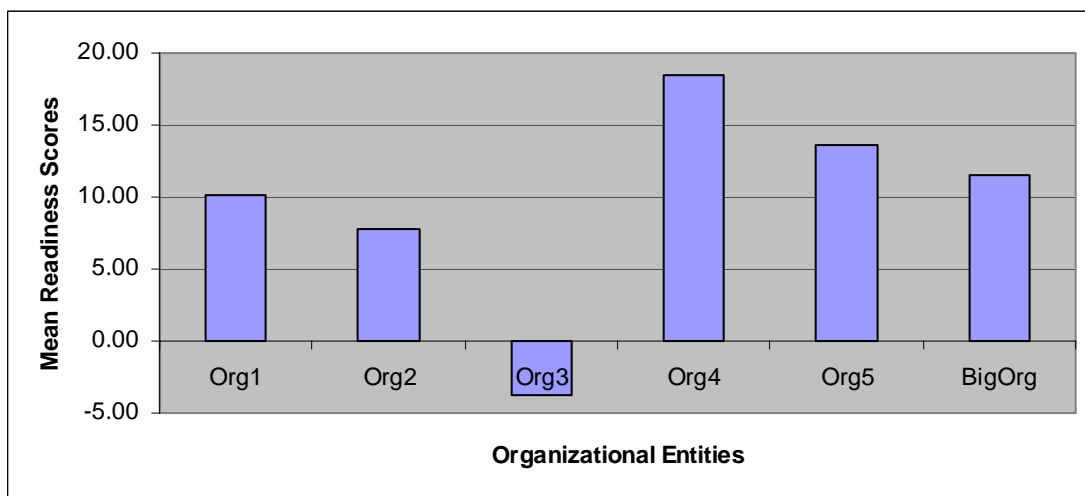


Figure 4.4: Mean Change Readiness Scores by Organizational Entity

Learning modes found in the organizational entities were all moderately consistent with the depiction for BigOrg, except for Org3.

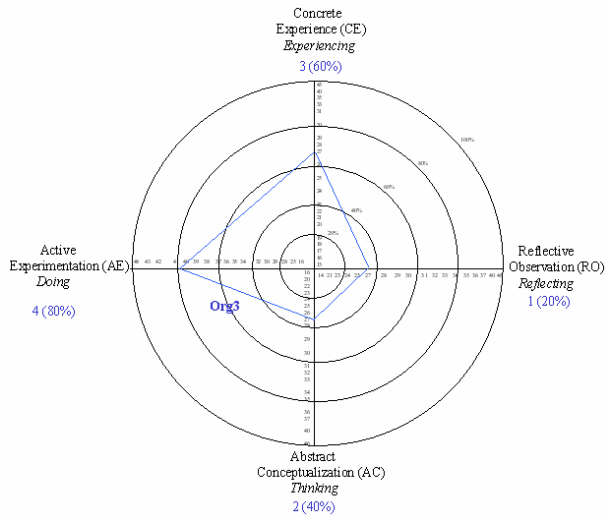


Figure 4.5: Org3 Learning Modes Aggregated for Change Recipients (n=5)

While all other entities demonstrated more use of abstract conceptualization, as depicted in Appendix J, Org3 indicated more use of active experimentation and concrete experience, as depicted in Figure 4.5.

Learning styles found in the five organizations and the aggregated BigOrg are depicted in Figure 4.6. Org3 demonstrated the accommodating learning style as dominant among change recipients, when aggregated as a group. The accommodating style of Org3 was the most distanced in proximity when compared to all the other organizational entities and to BigOrg. Org1 demonstrated a unique assimilating/converging combination, where both styles appeared equally dominating, when aggregated as a group. Org1 appeared in close proximity to BigOrg. Org2, Org4, and Org5 demonstrated a converging style, in common and in close proximity to BigOrg.

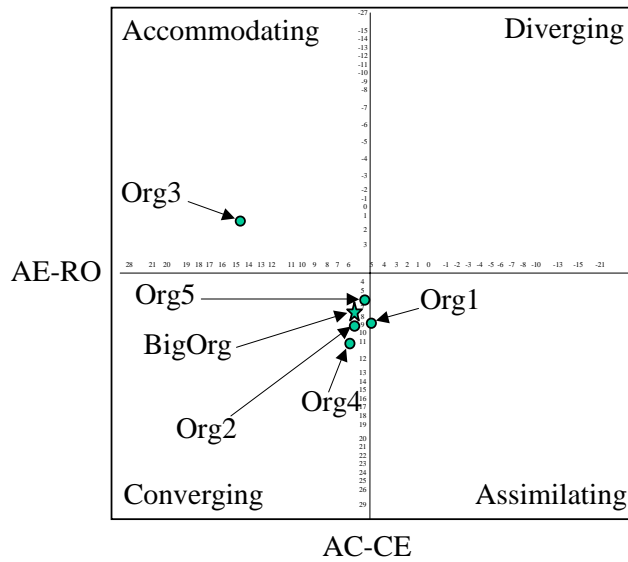


Figure 4.6: Learning Styles by Organizational Entity in Relational Proximity

Functions

The lowest change readiness scores across job functions were found among the Production and Graphics (80%), IT-Programming (79%), Scientist (71%), and IT-Web Design (70%) functions, as depicted in Table 4.4. The highest readiness scores were among the Peer Review Support (93%), Accounting/Finance (89%), and Sales/Marketing (88%) functions.

Table 4.4: Change Readiness Scores by Function

Function	Change Readiness Scores				Total
	<12 Percent	12 and > Percent	<12 Percent	12 and > Percent	
Human Resources	4	50%	4	50%	8
Administrative Support	9	35%	17	65%	26
IT Data Entry/Warehousing	3	60%	2	40%	5
IT Programming	23	79%	6	21%	29
IT Web Design	7	70%	3	30%	10
IT Computer Support/DBA	4	33%	8	67%	12
Production & Graphics	8	80%	2	20%	10
Peer Review Support	1	7%	13	93%	14
Project Management	15	38%	24	62%	39
Statistics	6	60%	4	40%	10
Clinical Trials Support	2	22%	7	78%	9
Health Communications	6	35%	11	65%	17
Executive	1	25%	3	75%	4
Accounting/Finance/Contracts	1	11%	8	89%	9
Sales/Marketing/Client Relations	1	13%	7	88%	8
Scientist	5	71%	2	29%	7
Other	12	50%	12	50%	24
<i>n</i> =					241

Production and Graphics was comprised of more males (60%) than females (40%), with most under the age of forty (60%), either African American (30%) or Caucasian (70%), and mostly non-managers (90%) versus managers (10%). IT-Programming was comprised of a close mix of females (48%) to males (52%), mostly under forty (90%) non-managers (93%), with more racial diversity than almost all functions, including African Americans (7%), American Indian (4%), Asian (10%), Caucasian (72%), and other (7%). The Scientist function was comprised of all non-managers, mostly Caucasian (71%) males (86%), over forty (72%), although Africans Americans (14%) and Asians (14%) were included. IT-Web Design was comprised of mostly Caucasian (70%) non-manager (90%) females (70%) under forty (60%), which also included African Americans (20%) and American Indian (10%). All four functions reported a small job change (10%) related to the acquisitions.

The Peer Review Support function included all Caucasian mostly female (93%) non-managers (79%) over forty (64%), with a moderately high number who experienced a job change (43%). Accounting/Finance was comprised of all under-forty, mostly female (67%) non-manager (67%) African Americans (22%) and Caucasians (78%), who reported a moderately high job change (44%) related to the acquisition. Sales/Marketing included all Caucasian, mostly female (63%) non-managers (75%) under forty (63%) years of age, who experienced a high level of job change (50%).

Learning style differences for the seventeen BigOrg functions are depicted in Figure 4.7. When AC-CE and AE-RO were calculated for each function, most change recipients appeared in the converging style (41%), followed by the assimilating style (29%) and the accommodating style (24%). One function, Health Communications appeared to have change recipients between the accommodating and converging styles. There were no diverging style change recipients apparent in the aggregated scoring for each function, meaning it was not the dominant style across that function.

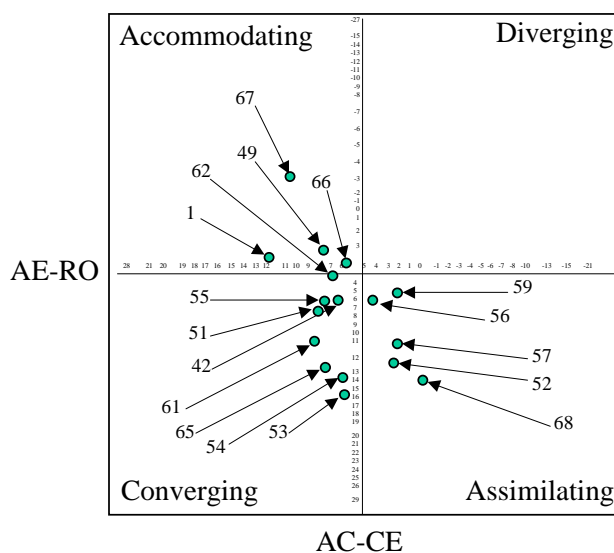


Figure 4.7: Learning Styles by Function in Relational Proximity

Actual learning styles found among change recipients in each of the low readiness and high readiness functions are depicted in Figure 4.8. Of the low readiness functions, three out of four have at least one or more learning styles not represented, when compared to the high readiness functions demonstrating a moderate balance of all styles. Within the Production and Graphic function, there were more change recipients within the accommodating style (40%) than within the assimilating style (30%) or the converging style (30%). The IT-Programming function had more converging style (41%) than assimilating style (38%), although the diverging style (17%) and accommodating style (4%) were included. Of those change recipients in the Scientist function, the majority was found to have an assimilating style (86%), and all others were in the converging style (14%). IT-Web Design change recipients reflected a majority having the converging style (70%), with all others having the assimilating style (30%).

For functions with high readiness observed, Peer Review Support had more of the converging style (43%) than assimilating (36%), accommodating (14%), or diverging (7%) styles. Accounting/Finance was comprised of equal numbers of accommodating (33%) and converging (33%) styles, along with a moderate balance of diverging (22%) and assimilating (11%) styles. Sales/Marketing was an expected high accommodating style (50%) with a moderate balance of assimilating (25%), diverging (13%) and converging (12%).

		Low Readiness		High Readiness	
AE-RO	Accommodating	55 – 4 (40%) 52 – 1 (4%)	Diverging 52 – 5 (17%)	Accommodating	Diverging 56 – 1 (7%) 66 – 2 (22%) 67 – 1 (13%)
	Converging	55 – 3 (30%) 52 – 12 (41%) 68 – 1 (14%) 53 – 7 (70%)	Assimilating 55 – 3 (30%) 52 – 11 (38%) 68 – 6 (86%) 53 – 3 (30%)	Converging	Assimilating 56 – 6 (43%) 66 – 3 (33%) 67 – 1 (12%) 56 – 5 (36%) 66 – 1 (11%) 67 – 2 (25%)
		AC-CE		AC-CE	

Figure 4.8: Learning Styles Found Among Low and High Readiness Functions

Specific findings regarding the relationships identified between change scores and learning styles, and between change scores and demographic differences are described for each research question. Each question and its associated null hypothesis are presented.

Research Question One

The first research question asked: What are the critical learning needs perceived by organizational managers and non-managers to help insure a successful acquisition integration? The responses from ten interviews, five managers and five non-managers, randomly selected from among all change recipients who had at least one year of service with BigOrg, provided the relevant insights.

Description of Participants

Interview participants (IPs) were comprised of 8 females and 2 males, of which 8 were Caucasian and 2 were African-American. 9 out of 17 of BigOrg’s major job functions were represented, including IT-Data Entry, IT-Programming, IT-Web Design, IT-Computer Support, Production and Graphics, Project Management, Clinical Trials Support, Health Communications, and Executive. All 6 major corporate and regional office sites were visited by this researcher, and culturally represented by the ten IPs. Other demographic data are listed in Table 4.5.

Table 4.5: Interview Participant Demographics

IP	Years of Scvc.	Education			NI	Site
		BS/BA	MS/MA	PhD		
1M	5.8	★				4
1E	5.4				★	2
1E2	4.1	★				6
2M	2.4	★				3
2E	4.5	★				3
3M	8.0	★	★			7
3E	8.0		★			7
4M	1.4	★				2
4E	2.2		★			2
5M	1.3	★	★			4
5E	1.0	★	★	★		5

Key: IP=Interview Participant; NI=Not Indicated; 1E2 backup.

Summary of Responses

Responses from interview participants were found to summarize into four major categories, and twenty subcategories related to training and learning interventions. These categories included interpersonal, knowledge, performance, and organizational aspects related to learning.

Among the five manager and five non-manager interview participants, approximately twice as many comments on the importance and need for interpersonal learning during corporate acquisition integration were conveyed by the non-managers. All five non-managers talked about the interpersonal aspects of dealing with change and building trust, while three out of five managers described similar importance in these areas.

The need for knowledge about the company, about the acquisition changes, and about key people involved, were consistently discussed by managers and non-managers as being important for integration. Managers tended to describe existing opportunities for acquiring knowledge within BigOrg, while the non-managers tended to express the desire to know more than the current opportunities afforded, especially around human interactions. Non-managers conveyed training time and one-on-one conversations to be the most adequate source of acquiring new knowledge about the acquisition changes, while managers described meetings as being their primary means of learning about the acquisition integration and the changes associated with the integration.

Managers suggested the need for more training on goal setting and performance measurement during the integration. Non-managers suggested a need for better clarity on expectations in new roles and within new team relationships to enable desired performance during integration. While the language and emphasis varied, both groups seemed to agree on

the need for more role, or job, integration through learning interventions, especially between integrating functions and processes.

Org1 and Org2 IPs commented more on learning about people, especially the diversity of people, and how to make relationships work to make the integration work. Org3, Org4, and Org5 IPs commented more on the interpersonal interactions necessary to know what is happening, how to get clarification, and where to find out about the benefits and opportunities afforded by the acquisition(s). Trust, as an interpersonal concern, appeared consistently among the ten IPs, although slightly different in organizational entity perspectives. Comments from Org1 and Org2 IPs centered more on 'learning to trust diverse people' while comments from Org3 and Org4 focused on 'hoping my trust doesn't get violated.' Org5 IPs only conveyed trust in terms of what they were hearing from others, yet deemed it as a needed learning intervention, not because of a problem in BigOrg, but as an organizational need due to the continuing BigOrg growth.

Nearly all IPs described the availability of BigOrg learning interventions, on such things as technology, project management, and stress management. Org1 and Org2 IPs described availability in terms of limited budget and limited time, while Org3, Org4, and Org5 IPs described availability in terms of looking forward to scheduling and attending them. One example of learning availability mentioned was a short program on managing change. Four out of ten IPs said there was a course available in BigOrg on 'how to deal with change,' where only two of these said they had attended the two-hour course, yet neither of these two could remember the name of the course.

In summary, the most consistent comments among all IPs on critical learning needs for acquisition integration were; 1) more opportunities to learn about change, in relation to

the differences among people, 2) opportunities to gain greater understanding of role expectations, through intra-functional and inter-functional group interactions and projects, and 3) continuous opportunities to engage in inquiry, that is, asking questions in a safe, non-threatening environment. While all of these needs were described as existing in BigOrg, and being addressed in some way, nearly all IPs expressed a desire to see further enhancement, especially as the company continues to grow through acquisitions.

Research Question Two

The second research question asked: Is there a significant difference between the Org1 organizational entity and the other organizational entities with respect to their mean change readiness scores? The hypothesis proposed to test these differences is as follows:

H₀: There is no statistically significant difference in the mean change readiness scores of Org1, and those of Org2, Org3, Org 4, or Org5.

Results were analyzed using an independent-samples *t* test for Org1 on each of the other entities. This analysis revealed a significant difference between the two groups Org1 and Org4, *t* (39.8) = -3.03; *p* = 0.042. The sample means are reported in Table 4.6, which shows that change recipients in Org1 scored significantly lower on readiness change scores than did change recipients in the Org4 group (for Org1, *M* = 10.07, *SD* = 15.15; for Org4, *M* = 18.53, *SD* = 9.817). The difference between Org1 and Org3 readiness was observed to be nearing significance, with *p* = 0.0506. No other significant differences were found between Org1 and the other entities, on mean readiness scores.

Table 4.6: Change Score Means and Standard Deviations for Organizational Entities

Change Scores*	Org1		Org2		Org3		Org4		Org5	
	M	SD	M	SD	M	SD	M	SD	N	SD
FuncBhav	48.21	10.17	49.52	8.82	47.8	5.84	52.21	7.3	50.89	10.81
NonFuncB	38.88	7.45	42.24	4.54	43.8	6.94	36.42	5.53	38.23	5.8
DysFuncB	26.51	7.49	28.36	6.34	36.4	8.71	24.32	4.88	26.29	6.45
Impaired	38.14	11.23	41.79	9.56	51.6	11.24	33.68	6.35	37.26	9.29
Readines	10.07	15.15	7.73	12.57	-3.8	15.15	18.53	9.82	13.64	14.49

*Actual coding nomenclature used in this study, for SAS 8.2 purposes.

The H₀ was rejected and conclusion made, there is a significant difference between Org1 and at least one other entity, Org4, on group differences between mean change readiness scores.

Research Question Three

The third research question asked: Is there a significant difference between four groups of change recipients, Accommodating, Diverging, Assimilating, and Converging, with respect to their change readiness scores? The hypothesis used to test these differences is as follows:

H₀: There is no statistically significant difference in the mean change readiness scores of change recipients with the learning style Accommodating, Diverging, Assimilating, or Converging.

Results were analyzed using a one-way ANOVA, between-groups design. This analysis revealed a significant effect for learning styles, $F(3,237) = 3.14$; $p = 0.0262$. The sample means are displayed in Table 4.7. Tukey’s HSD test showed that change recipients in Learning Style 1-Accommodating scored significantly higher on Readines change scores than did change recipients in Learning Style 4-Converging ($p < .05$). There were no significant differences between change recipients in the other learning style groups with respect to their readiness change scores. The H₀ was rejected, and it was concluded that there is a difference between learning styles when comparing between-group mean readiness change scores.

Table 4.7: Change Scores by Learning Style Groups

Change Scores	1-Accommodating		2-Diverging		3-Assimilating		4-Converging	
	n = 49		n = 29		n = 78		n = 85	
	M	SD	M	SD	M	SD	M	SD
FuncBHav	52.55	8.69	48.03	10.06	49.40	9.71	49.18	10.90
NonFuncB	36.29	5.55	39.52	5.72	39.90	6.95	39.52	6.41
DysFuncB	25.69	6.87	27.14	7.11	26.17	6.89	27.64	6.91
Impaired	35.55	9.36	39.03	10.36	38.18	10.59	39.48	10.14
Readines	17.00	11.45	9.00	13.40	11.23	15.58	9.69	15.02

Research Question Four

The fourth research question extended the analysis of change scores beyond change readiness to the effect on learning styles by the change orientation scores simultaneously. These included functional behavior (FuncBHav), non-functional behavior (NonFuncB), and dysfunctional behavior (DysFuncB). Question Four asked: Is there a significant difference in mean scores between the learning style groups and the three aspects of change orientation?

The hypothesis used to test these differences is as follows:

H₀: There is no statistically significant difference in mean scores between the learning style groups and the three aspects of change orientation.

Results were analyzed using a one-way MANOVA, between-groups design. This analysis revealed a significant multivariate effect for learning styles (LearnStl), Wilks' lambda = 0.93, $F(9,572) = 1.95$; $p = 0.0434$.

This analysis also revealed a significant effect for non-functional behavior (NonFuncB), $F(3,237) = 3.75$; $p = 0.0116$. The sample means are displayed in Table 4.7. Tukey's HSD test showed that change recipients in Learning Style 3-Assimilating scored significantly higher on non-functional behavior change scores than did change recipients in Learning Style 1-Accommodating, and change recipients in Learning Style 4-Converging scored significantly higher on non-functional change scores than did change recipients in Learning Style 1-Accommodating ($p < .05$).

Based on the findings, the H₀ was rejected. It was concluded that there is a significant difference between learning style groups on mean non-functional behavior scores. No significant differences were found for functional and dysfunctional change behavior scores between learning style groups.

Research Question Five

The fifth research question explored the demographic variables for differences in change readiness and impaired scores. Question Five asked: Is there a significant difference in change readiness and impaired scores between the demographic groups of gender, age, race, job function, manager, and job change? The hypothesis used to test these differences is as follows:

H₀: There is no statistically significant difference in mean scores between the demographic groups on their change readiness and impaired change scores.

Each of the demographic variables were tested separately by performing a one-way multivariate analysis of variance MANOVA using the SAS general linear model (GLM) procedure. The F statistic from the Wilks' lambda test performed were interpreted, and where significant at $p < .05$, the associated ANOVA results were interpreted based on their significance at $p < .05$. The analysis for each group is as follows:

Gender

Results were first analyzed using a one-way MANOVA, between-groups design. This analysis failed to reveal a significant multivariate effect for gender on readiness and impaired change scores simultaneously, Wilks' lambda = 0.98, $F(2, 238) = 2.56$; $p = 0.0794$. While nearing significance, the $p < .05$ was not achieved. Therefore, the H₀: There is no significant difference in mean scores between gender groups on their change readiness and impaired change scores, could not be rejected. It was tentatively concluded that there are no differences in mean change readiness and impaired change score between female and male change recipients in BigOrg. No further interpretation was made on the model.

However, given the closeness to significance in the model, a separate test using a one-way ANOVA, between-groups design was used. This analysis revealed a significant effect for gender on impaired change scores, $F(1, 239) = 5.12$; $p = 0.0246$. The sample mean scores are reported in Table 4.8.

Table 4.8: Mean Readiness and Impaired Change Scores by Gender Group

Change Scores	1-Female		2-Male	
	n = 152		n = 89	
	M	SD	M	SD
Impaired	37.08	10.30	40.13	9.80
Readiness	12.69	14.61	9.72	14.38

Tukeys' HSD test showed that change recipients in Gender 2-Male had significantly higher impaired change scores than change recipients in Gender 1-Female, at the $p < .05$ level of significance.

Age

Results for Age were analyzed using a one-way MANOVA, between-groups design. Sample means are reported in Table 4.9. The analysis revealed a significant multivariated effect for Age, Wilks' lambda = 0.90, $F(14, 464) = 1.77$; $p = 0.0404$.

Table 4.9: Mean Readiness and Impaired Change Scores by Age Groups

Change Scores	1- <25		2- 25 to 30		3- 30 to 35		4- 35 to 40		5- 40 to 45		6- 45 to 50		7- 50 to 55		8- >55	
	n = 15		n = 89		n = 89		n = 89		n = 89		n = 89		n = 89		n = 89	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
Impaired	37.08	10.30	40.13	9.80	40.13	9.80	40.13	9.80	40.13	9.80	40.13	9.80	40.13	9.80	40.13	9.80
Readiness	12.69	14.61	9.72	14.38	9.72	14.38	9.72	14.38	9.72	14.38	9.72	14.38	9.72	14.38	9.72	14.38

A significant effect was found for Age on Readiness, $F(7, 233) = 2.07$; $p = 0.0481$. Tukey's HSD test showed that change recipients in the group Age6 – 45 to 50 years of age

had significantly higher change readiness scores than those in the group Age4 – 35 to 40 years of age, at the $p < .05$ level. No other significant differences were found between the Age groups on readiness or impaired scores.

Ages were also grouped for further analysis, as shown in Table 4.10. Group 1- Under twenty-five, group 2- twenty-five to forty-five, and group 3- Over forty-five were tested the same way, where the results were analyzed using a one-way MANOVA, between-groups design. This analysis found a significant multivariate effect for AgeGrp, Wilks' lambda = 0.96, $F(4, 474) = 2.39$; $p = 0.0498$.

Table 4.10: Mean Readiness and Impaired Change Scores by Combined Age Groups

	1- Under 25		2- 25 to 45		3- Over 45	
	n = 15		n = 160		n = 66	
Change Scores	M	SD	M	SD	M	SD
Impaired	39.73	10.57	38.63	10.47	36.83	9.45
Readiness	7.87	16.29	10.18	14.91	15.88	12.46

Sample means are reported in Table 4.9. This analysis revealed a significant effect for AgeGrp on Readiness, $F(2, 238) = 4.22$; $p = 0.0159$. Tukey's HSD test showed that change recipients in the Over 45 age group scored significantly higher on Readiness than those in the Twenty-five to forty-five age group. No significant effect was found for AgeGrp on Impaired.

Race

Results for Race were also analyzed using a one-way MANOVA. This analysis found a significant multivariate effect for Race, Wilks' lambda = 0.92, $F(10, 466) = 2.05$; $p = 0.0271$. Sample means for the Race groups of BigOrg are reported in Table 4.11.

Table 4.11: Mean Readiness and Impaired Change Scores by Race

	1- African American		2- Hispanic		3- American Indian	
	n = 27		n = 6		n = 2	
Change Scores	M	SD	M	SD	M	SD
Impaired	31.89	9.99	40.33	8.80	36.50	4.95
Readiness	15.56	13.45	9.00	17.62	22.00	1.41

	4- Asian		*6- Caucasian		7- Other	
	n = 12		n = 185		n = 8	
Change Scores	M	SD	M	SD	M	SD
Impaired	39.33	11.30	39.03	9.91	36.25	12.46
Readiness	4.83	15.13	11.35	14.74	14.25	10.79

$n=241$ *Race 5-African had no responses.

The analysis revealed a significant effect for Race on Impaired, $F(5, 234) = 2.54$; $p = 0.0290$. Tukey's HSD test showed that change recipients in the Caucasian group have significantly higher Impaired change scores than those in the African-American group, at the $p < .05$ level of significance.

Manager

The MANOVA test on manager (SupvMgr) found a significant multivariate effect for SupvMgr, Wilks' lambda = 0.93, $F(2, 238) = 8.34$; $p = 0.0003$. The sample means are reported in Table 4.12.

Table 4.12: Mean Readiness and Impaired Change Scores by SupvMgr

	1- Manager		2- Non-manager	
	<i>n</i> = 76		<i>n</i> = 165	
Change Scores	M	SD	M	SD
Impaired	38.67	9.89	37.99	10.37
Readiness	14.86	12.61	10.09	15.18

The analysis revealed a significant effect for SupvMgr on Readiness, $F(1, 239) = 5.68$; $p = 0.0180$. According to the Tukey's HSD test, Managers scored significantly higher on change readiness than Non-managers, at the $p < .05$ level of significance. No significant differences were found on the Impaired scores between the two groups.

Function

Survey results from the question on function were analyzed using a one-way MANOVA, between-groups design also. This analysis revealed a significant multivariate effect for Function, Wilks' lambda = 0.69, $F(32, 446) = 2.81$; $p < .0001$. Sample means are reported in Table 4.13. A significant effect was found for both Readiness, $F(16, 224) = 4.08$; $p < .0001$, and for Impaired, $F(16, 224) = 2.02$; $p = 0.0129$. The Tukey's HSD for Readiness showed that change recipients in Function 52- IT-Programming have significantly lower change readiness scores than those in Functions 49- Administrative Support, 54- IT-Computer Support, 56- Peer Review Support, 57- Project Management, 62- Health

Communication, and 67- Sales/Marketing. Table 4.4 reported low and high readiness by function. The Tukey's HSD for Impaired showed that change recipients in Function 52- IT-Programming have significantly higher impaired change scores than those in Function 56- Peer Review Support. No other significant differences were found between functions.

Table 4.13: Mean Readiness and Impaired Change Scores by Function

Level of FUNCTION	The SAS System		The GLM Procedure		
	N	Mean	Std Dev	Mean	Std Dev
Human Resources	8	37.00	14.25	15.13	20.25
Admin Support	26	34.42	9.32	14.39	13.73
IT Data Entry/WH	5	34.00	13.29	10.40	7.99
IT Programming	29	42.45	10.99	-1.90	15.28
IT Web Design	10	40.60	10.88	6.40	17.32
IT Comp Suprt/DBA	12	35.50	7.26	16.50	10.34
Prod&Graphics	10	42.40	9.42	4.80	12.23
Per Review Suprt	14	30.86	8.47	20.86	8.24
Project Mgmt	39	37.87	10.05	14.92	12.31
Statistics	10	43.30	11.94	6.80	16.23
Clinical Trials	9	39.89	8.61	14.67	8.22
Health Comm	17	37.88	9.89	14.76	16.53
Executive	4	36.50	5.80	22.25	7.63
Acctg/Finance	9	36.33	7.31	15.00	7.37
Sales/Marktg	8	31.50	5.32	24.50	8.45
Scientist	7	39.86	6.18	0.85	11.91
Other	24	42.13	10.53	10.04	13.09

Job Change

The variable JobChng was also tested using the SAS GLM procedure. Results were analyzed using the one-way MANOVA, between-groups design. No multivariate effect was found for JobChng on Readines and Impaired. The sample means are reported in Table 4.14.

Table 4.14: Mean Readines and Impaired Change Scores by Function

Change Scores	1- Changed Jobs n = 43		2- No Job Change n = 198	
	M	SD	M	SD
Impaired	36.00	10.20	38.69	10.17
Readines	14.16	13.09	11.04	14.84

Summary of Results

One or more significant differences were found on each of the research questions within the study design. Each finding provided insight into the organization studied, BigOrg, regarding the relationships between change readiness and learning styles. Conclusions and recommendations are conveyed in Chapter 5.

Chapter 5: Conclusions and Recommendations

Introduction

Understanding change readiness and ways to positively influence change outcomes in organizations dealing with complex change remains a strategic factor in helping organizations achieve competitive advantage (Burke, 2002), especially in M&A environments (Marks, 1994). While learning interventions continue to be one of the primary strategies used by change organizations to influence effective change results (Senge et.al., 1999; Morhman et. al., 1989), these organizations continue to seek a balance between; 1) offering learning interventions and 2) ensuring those offered are the most efficient and effective in achieving desired results (Senge et. al., 1999). Learning interventions based on learners' [change recipients] learning styles, help ensure learning acceptance and application (McCarthy, 1996; Kolb,1984), which enhances organizational outcomes [integration] (Burke, 2002; Argyris, 1990).

This study investigated relationships between individual change orientation [readiness] scores, individual learning styles as a measure of new information processing, and select demographic attributes of individuals within an organization undergoing complex change – a multiple corporate acquisition environment. The relationships found are therefore useful, along with the interview summary findings, in suggesting possible learning interventions for development, and in prioritizing that development, for BigOrg [disguised], the organization investigated. Conclusions for each research question are provided, followed by application and further research recommendations.

Conclusions

Conclusion 1: Managers and non-managers consistently described three learning needs perceived to be critical in helping ensure successful acquisition integration.

Interviews of ten randomly selected change recipients, five managers and five non-managers, revealed a generally positive outlook for BigOrg's prosperity, and for effective integration of the current acquisitions, as well as those already expected for the coming year. While no major problems were revealed, suggesting a critical need within the organization overall, some specific examples of critical learning needs for ensuring successful acquisition integration were described.

Three critical learning needs for successful acquisition integration identified consistently among the interview participants (IPs) were; 1) more opportunities to learn about the change and about differences among the new people, 2) opportunities to gain greater understanding of role expectations, through intra-functional and inter-functional group interactions and projects, and 3) continuous opportunities to engage in inquiry, or asking questions about the change, in a safe, non-threatening environment. All three appear to support Marks' (1994) change readiness guidelines for effective organizational change. Specifically, needs 1 and 3 of BigOrg IPs support Marks' (1994) guidelines # 1 - knowledge of the change effort, and # 2 - opportunity to reflect on the personal benefits and detriments of the change. The second need described by IPs supports Marks' (1994) guideline # 3 - opportunities to develop new knowledge, skills, and attitude needed for successful performance following the change.

Seven out of ten of the IPs described at least one benefit to them personally, related to the acquisition experience. The most frequently mentioned benefits were; 1) more

opportunity for professional growth, through expanded projects and intra-company expanded roles, and 2) enhanced work-related benefits such as healthcare. Five out of ten IPs expressed some concern about the loss of a job, either their own, or that of a colleague, as a detriment of the change. However, most comments described the ‘job loss’ as related to project closure, rather than resulting from acquisition activities. One IP described the loss of her own job associated with the acquisition, yet expressed multiple benefits realized for herself and the organization. She was later rehired and therefore available to share her experience.

In summary, the needs described by IPs in BigOrg were not expressed as lacking in the organization, rather they were deemed critical for integration, and could therefore be further enhanced. These needs centered on enhancing opportunities to engage the new [acquisition] people and the existing [BigOrg] people in joint projects and activities that provide a productive way to balance meeting the business needs of the organization while also gaining more insight into the integration requirements, and in the development of needed knowledge and skills to effectively perform in the integrated role.

The medium sized, privately held, for-profit organization investigated was supportive of enhancing change integration through learning interventions. Consistent comments by the ten interview participants (IPs), substantiated their perception of BigOrg’s commitment to learning from the acquisitions so far, and applying the learning to future acquisitions, already planned for further growth of the organization. This reflects the ‘learning culture’ (Senge, 1999) of BigOrg.

Conclusion 2: Org1 [original organization] change readiness scores were significantly lower than Org4 [the latest acquisition].

A first step in enhancing change outcomes [integration] was to identify where undesired change behaviors [low readiness] exists in the organization (Burke, 2002; Senge, 1999). Assessing the target and acquiring organizations [entities] by comparison, tested the assumption that the acquired organization(s) demonstrate higher behaviors of resistance, as measured by low readiness, than the original organization doing the acquiring (Marks, 1994; Robbins, 2001). The opposite was found in BigOrg. The highest readiness scores were found between Org4, acquired within the last 6 months, and Org5, the non-acquisition change recipients hired. While Org1 scores were found to be higher than Org2, the first acquisition, and Org3, the second acquisition, they were significantly lower than Org4.

This phenomenon seems to promote the idea of optimism among Org4 change recipients, related to benefits of the change (Carnall, 1991; Argyris, 1990). In both Org4 interviews, repeated mentions of ‘hope’ were conveyed, as in ‘I hope it works out...,’ and ‘...I hope for the best [regarding integration].’ Hope and opportunity were mentioned more by Org4 IPs than any of the other IPs.

While an intervention could be applied to Org1, based on the low readiness finding, it may be more appropriate to consider an intervention for Org1, 2 and 3 combined, or for Org4 separately as a preventative measure. Org1 cannot be feasibly distinguished at this point in time, that is, separating the Org1 group for a particular intervention, without causing a potential organizational strain (Beer, 1980, p.136). Disassociating Org2, which occurred prior to the BigOrg name change, could generate dysfunctional effects among the change recipients.

A combined intervention, that is, a learning intervention for Org1, 2, and 3, or even for all of BigOrg, might include a “Key Lessons Learned From Our Acquisition Actions,” using data from an educational research study on organizational change and learning as the learning content. Since the dominant learning style found among change recipients in Org1 is a combination of the Converging Style and the Assimilating Style (Kolb, 1984), prioritization and development of this intervention could be focused on the presentation preferences of these styles. Doing so would also account for 68% of all BigOrg change recipients, as determined by this sample.

This learning intervention could include a presentation of the key concepts found in the change study, along with a structured activity to find two to three practical applications of the data findings. A case study activity describing the data for analysis, and a practical problem solving application would be an ideal intervention for these combined styles. Assimilating styles prefer lectures and readings that allow for reflection on their own experience (McCarthy, 1996; Kolb, 1984). Converging styles prefer experiments, assignments, and activities, which allows the change recipient [learner] to solve a problem or find a practical application for the concept (McCarthy, 1996; Kolb, 1984). Activity materials should include a well-structured description of the case, the key concept, and the details of what is known about the problem, along with who knows the details related to the problem. A list of questions that once solved, result in benefit for the change recipients and the organization, should also be included. Assimilating style change recipients like details and awareness of who knows and what is known about the details, while Converging style change recipients look for problems to solve and ways to achieve usefulness (McCarthy, 1996; Kolb, 1984). The activity should be structured to include adequate individual time for

reading and reflection, along with intra-group discussion, yet have an imposed deadline for specific tasks. Assimilating styles need time for understanding how the activity relates to their experience and the experience of others, while the Converging style prefers tasks and deadlines (McCarthy, 1996; Kolb, 1984).

In summary, a learning intervention in support of Org1, where the lowest readiness was found, or in the combined support of Org1, Org2, and Org3, where scores were lower than Org4 and Org5, or in support of the BigOrg combination would be best served by an intervention prioritized and developed for a combination of change recipients with the Assimilating learning style and with the Converging learning style. Only Org3 demonstrated a different learning style profile overall, that of Accommodating, but was not deemed significant in the combined intervention due to the small sample of Org3 (n=5), as only 2% of the overall organization.

Conclusion 3: BigOrg change recipients with the Accommodating learning style had significantly higher change readiness scores than those with the Converging learning style.

The Accommodating style was higher on readiness scores than the Diverging, Assimilating, and Converging styles. This supports the literature on Accommodating styles as being the most open and receptive to change (McLoughlin, 1999; McCarthy, 1996; Kolb, 1984; Claxton and Ralston, 1978). In recognizing the statistical significance between Accommodating and Converging, where the Converging style is most dominant in BigOrg (35%), and the literature on change, this result appears to offer justification of Accommodating style change recipients as change agents for the organization (Senge et al, 1999; Galpin, 1996; Jick, 1993; Nutt, 1992). Change agents, as those who help promote the

need for change and the benefits of the change (Nutt, 1992), are needed in merger integration (Marks, 1994). Results did not provide sufficient evidence of a need for intervention development for LSI groups based on readiness.

Conclusion 4: BigOrg change recipients with the Assimilating and Converging learning style had significantly non-functional change scores than those with the Accommodating learning style.

This finding further confirmed conclusion 2 above, which suggested prioritized development and application of learning interventions for BigOrg, or the individual entities should be focused on the Assimilating and Converging styles. While conclusion 2 was based on the dominant style combination within the organizational profile, this conclusion further depicted low readiness [high non-functional behavior] in the organization. Non-functional behaviors represent those behaviors of ‘non-commitment’ and ‘non-support’ among change recipients (Burke, 2002; McKee, 2000; Jones and Bearley, 1986). These passive resistance behaviors (Robbins, 2001; Jick, 1993; Nutt, 1992), or undecided behaviors (Burke, 2002) can move toward commitment [functional] or toward active resistance [dysfunctional] (Robbins, 1997; French and Bell, 1984). High non-functional behavior scores therefore represent opportunities to influence improvement in change outcomes among change recipients, by applying learning interventions. The same learning intervention described in conclusion 2 above could be applied.

Conclusion 5: High impaired change scores were found among Males, Caucasians, and IT-Programmers, while high readiness change scores were found among managers and change recipients over age 45.

Males in BigOrg scored higher on the impaired change score than their female counterparts. This suggests females in the organization have a higher readiness for change.

This finding supported Patricia Lunneborg's (1990) perspective that "women are extremely open to change and learning new things" (p.71), while "men are very conservative and dedicated to maintaining the status quo – resistant to change" (p.71). While this demographic variable was used to better understand the change recipients in BigOrg, it could not be used for learning interventions without violating Title VII of the Human Rights Act preventing discrimination on work matters, including the access and availability of training. The finding does serve a useful purpose in suggesting that perhaps the fear factor associated with change (Dellecave, 1996) is not as prevalent among females, a protected class under Title VII.

Caucasians within BigOrg had significantly higher impaired change scores when compared to African American change recipients. This appears to suggest the opposite effect found in the literature on minority racial groups in organizations, where the less dominant group, or minority race, tends to feel more threatened for existence (Robbins, 1997; French and Bell, 1984), which tends to result in resistance [impaired] behaviors (Burke, 2002; Robbins, 2001; Jick, 1993; Nutt, 1992). This seems to suggest, as found among IPs, a culture supportive of diversity, and a protected class not feeling threatened.

High impaired change scores found among IT Programmers reflected the need for a small-group intervention specific to this function. The dominant learning styles among IT Programmers were almost equally balanced between the Converging style (12) and the Assimilating style (11), followed by the less-dominant Diverging style (5) and Accommodating style (1). This unusual finding of dispersed styles within a given job function (Kolb, 1984), may be indicative of how the job was defined. For example, during one of the interviews, the IP described IT programming as database design and data

analysis, as well as program designs for systems. The former appears to align with Kolb's (1984) research roles in the Assimilating style, and the later appears more aligned with the computer science roles typically associated with the Converging style. While a learning intervention could be used similar to the one suggested for conclusion 2, perhaps a joint project among IT-Programmers would be an effective intervention. The same methods and materials described for conclusion 2 could be used.

Managers were found to have high readiness scores. This should be expected, where organizations rely on supervisors and managers to influence or motivate desired behaviors in the organization (Robbins, 1993), and act as change agent during complex change (Burke, 2002). This finding therefore supports these expectations in the literature.

Also found to have high readiness scores was the Age group 'Over 45' when compared to the 'Under 25' and the '25 to 45' groups. This finding was contrary to expectations based on Knowles' (1978) suggestion that adults experience regressive growth in learning (p.157) at ages over 45, and therefore may reflect a higher level of defense against possible loss in organizational change (Knowles, 1978; Pressey and Kuhlen, 1957). Sixty-six (27%) of change recipients in BigOrg were found in the Over 45 group. Of these, thirty-four were managers (52%), forty-five were female (67%). This finding could also suggest another possible consideration for change agents, for BigOrg, that of change recipients over 45 years of age.

Summary

This study revealed the benefits of having awareness of change orientation [readiness] behaviors and learning styles linked together, as depicted in Figure 5.1.

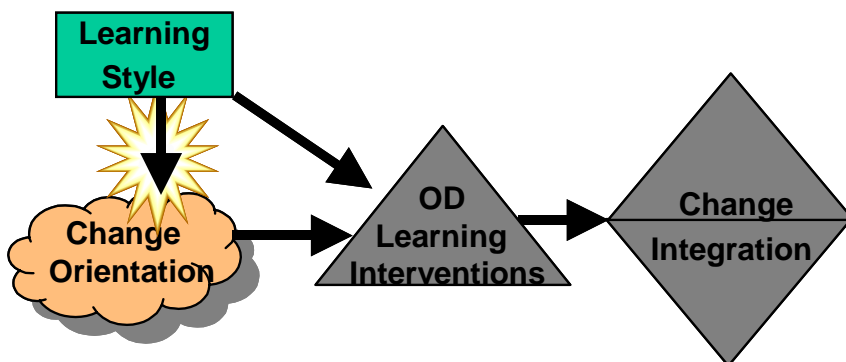


Figure 5.1 Conceptual Model-Organizational Change and Learning

The ‘low readiness’ change behaviors helped identify where potential OD/change interventions might be needed. The learning styles among those low readiness change recipients helped focus the intervention prioritization and development to change recipient needs in low readiness groups.

Three learning interventions were warranted, and learning intervention prioritization and development suggested for BigOrg based on findings from this study. The first was the learning intervention specific to the integration of the entities. Realizing from the study that earlier acquisitions, and the original organization, had lower readiness scores, seemed to suggest a need for understanding the effect of the unmet expectations (Burke, 2002; Marks, 1994) by new change recipients over time. The second intervention was also based on the overall organization, but related to understanding the dominant learning style for BigOrg, and using it to prioritize and develop an intervention to promote future changes. The final

intervention was specific to job Function 52-IT Programming, as identification of ‘high impaired’ behaviors.

Recommendations

Simultaneously assessing both change orientation [readiness] behaviors and learning styles should be considered by organizations undergoing complex change. The assessment appears to be a viable OD intervention for developing a stronger understanding of change recipients in the organization in areas that can be used in a variety of beneficial ways. One beneficial way is the prioritization and development of learning interventions to improve organizational change outcomes, or integration. Furthermore, this approach should be considered in merger and acquisition environments as part of the due diligence process of human capital. While it is important to understand what intellectual capabilities and key competencies exist in the organization, it is also wise to understand how the styles and behaviors of those human assets being acquired ‘fit with,’ or compare with those existing in the organization.

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The combination of these two assessment areas provided a good balance of inquiry for change recipients in BigOrg. Alone, the change orientation component may have appeared too intrusive. The learning style component helped link the desire for improving organizational effectiveness to the activity of learning, and therefore appealed to change recipients, who appeared eager to learn.

Intervention design should include awareness of individual differences, as a way of initiating further dialog. As found among the IPs, opportunities to ask questions and find

answers to those questions can be supported by focus group sessions on the change behaviors and learning styles found across the organization. Ongoing learning interventions applied in the organization can also utilize the learning styles data from the survey. For example, within the culture of this case study organization, meetings were deemed a learning opportunity. Leaders of future meetings could also apply the recommended intervention designs to enhance effectiveness of new information processing in those meetings.

Future Research

Further studies of the link between change orientation [readiness] and learning styles might consider multiple samples from multiple organizations across different geographic regions, and compare the findings to determine possible consistencies. While the mixed method offered considerable value in understanding the organizational change context, and should be an integral part of the approach, it might be enhanced by assessing the change orientation and learning styles of the IPs and specifically linking the interview comments to survey responses.

In studying M&A complex change, another demographic that should be included is the prior-M&A experience of change recipients and its effect on change scores. This was anticipated for this study but unfortunately missed in the online survey design.

Additional studies of M&A environments are needed. Acquisitions in the millennium are not like the hostile take-overs of past generations, rather a rational decision toward a rapid growth strategy. This was found to be especially true in BigOrg and in seven other multi-acquisition organizations that reviewed this study concept in its infancy.

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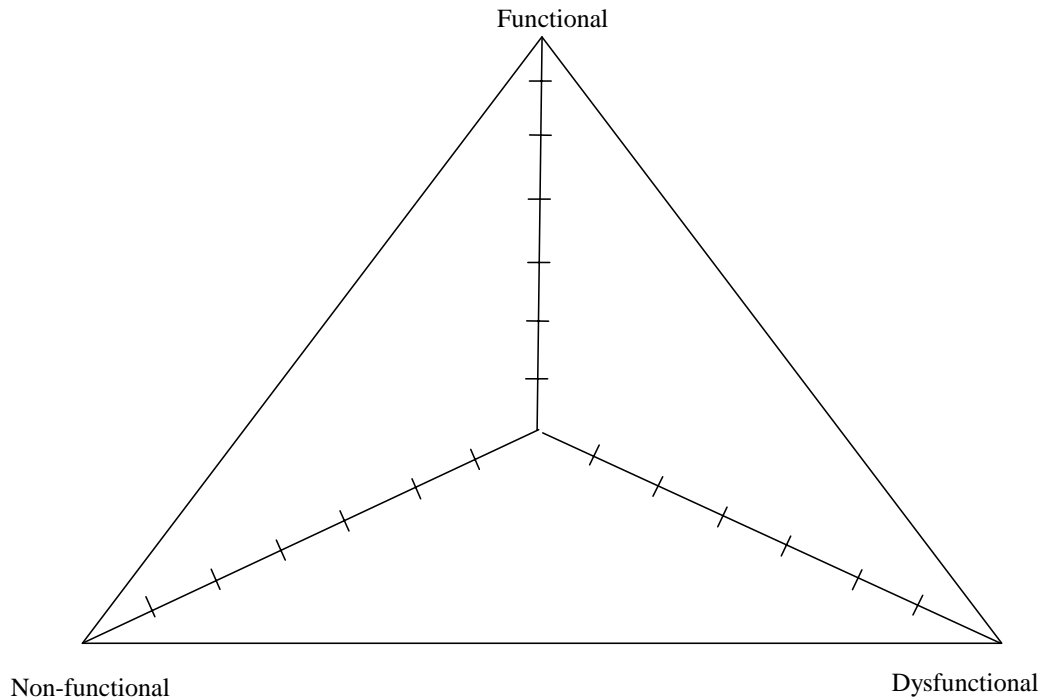
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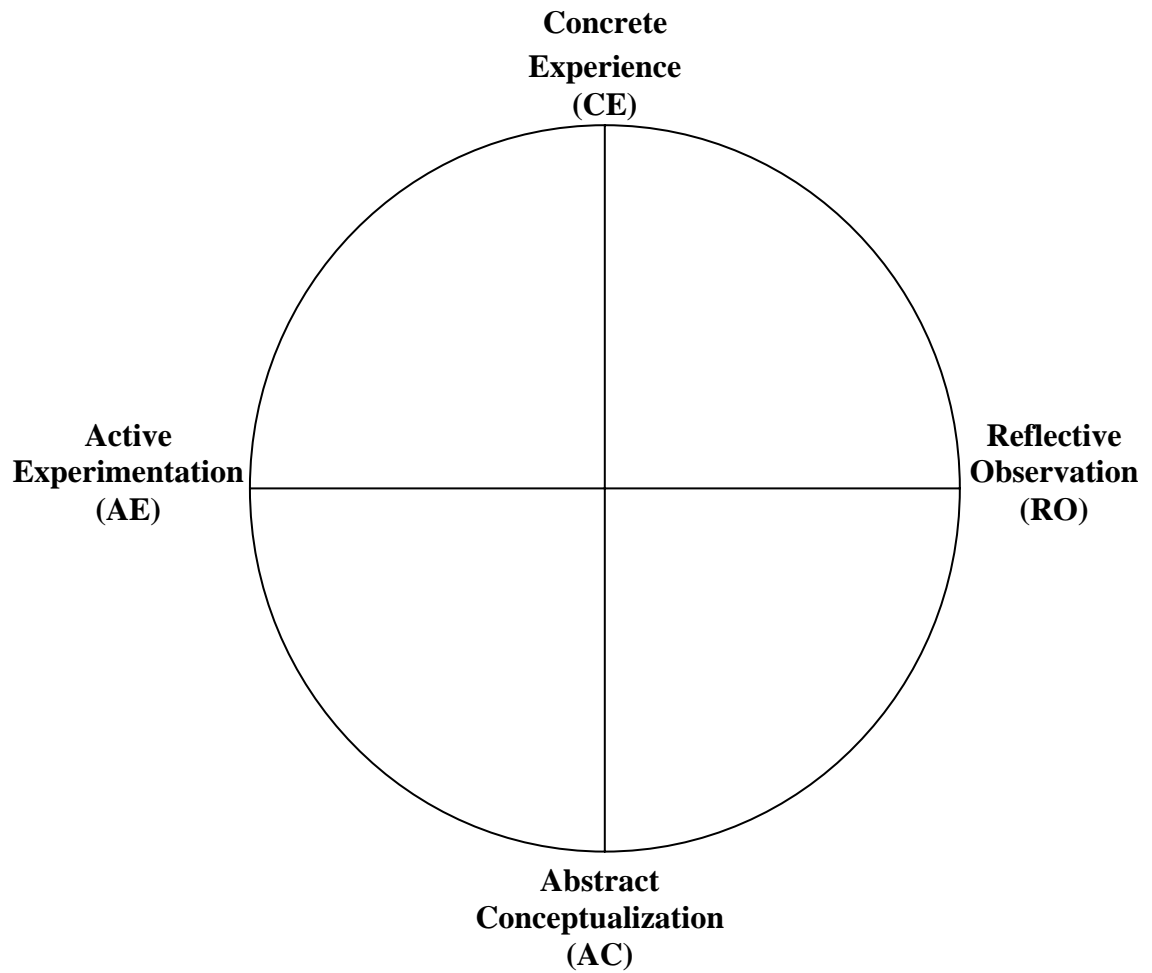
Appendix A: Organizational Change Orientation Scale (OCOS)



Functional:	Non-Functional:	Dysfunctional:
<i>1. Making change happen</i>	<i>5. Agreement without commitment</i>	<i>9. Blaming and finger pointing</i>
<i>2. Anticipating the need for change</i>	<i>6. Fence sitting</i>	<i>10. Passive resistance</i>
<i>3. Problem solving</i>	<i>7. Withholding support</i>	<i>11. Overt resistance</i>
<i>4. Self assessment</i>	<i>8. Moaning and groaning</i>	<i>12. Sabotage</i>

Adapted with permission from: Jones and Bearley, 1986. Organizational Change Orientation Scale (OCOS) User Guide.

Appendix B: Learning Styles Inventory (LSI)



Adapted with permission from: Kolb, 1999b. Learning Style Inventory, Version 3.

Appendix C: IRB Approval Letter

North Carolina State University is a land-grant university and a constituent institution of The University of North Carolina

Office of Research and Graduate Studies

NC STATE UNIVERSITY

Sponsored Programs and
Regulatory Compliance
Campus Box 7514
1 Leazar Hall
Raleigh, NC 27695-7514
919.515.7200
919.515.7721 (fax)

From: Debra A. Paxton, IRB Administrator
North Carolina State University
Institutional Review Board

Date: January 30, 2004

Project Title: Organizational Change and Learning

IRB#: 009-04-1

Dear Mr. Tredway;

The project listed above has been reviewed in accordance with expedited review procedures under Addendum 46 FR8392 of 45 CFR 46 and is approved for one year. **This protocol expires on January 29, 2005, and will need continuing review before that date.**

NOTE:

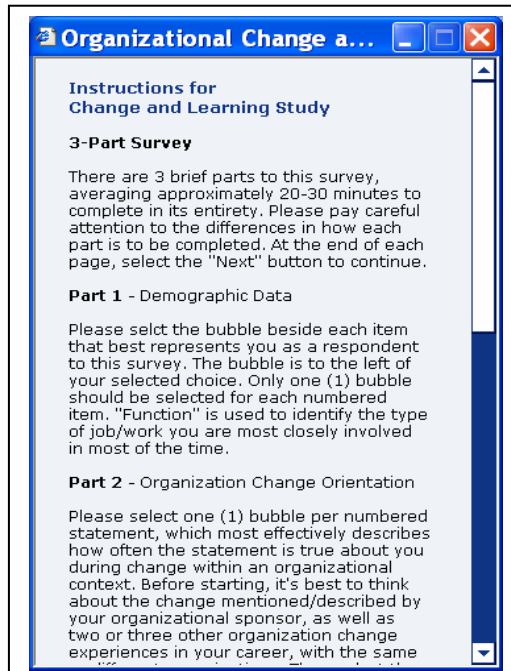
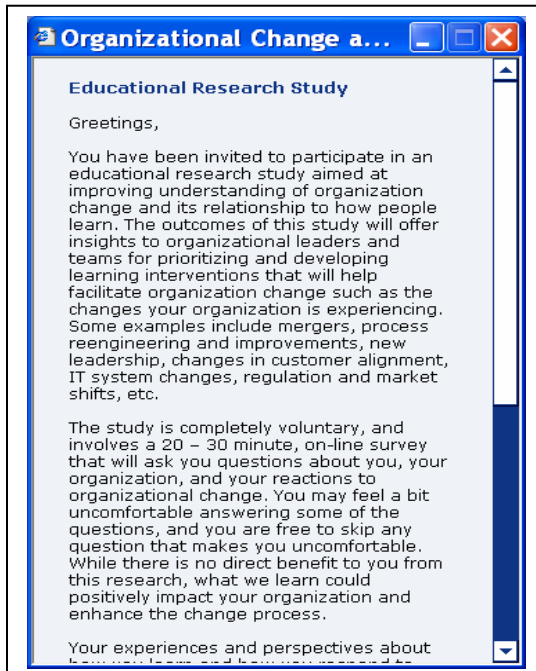
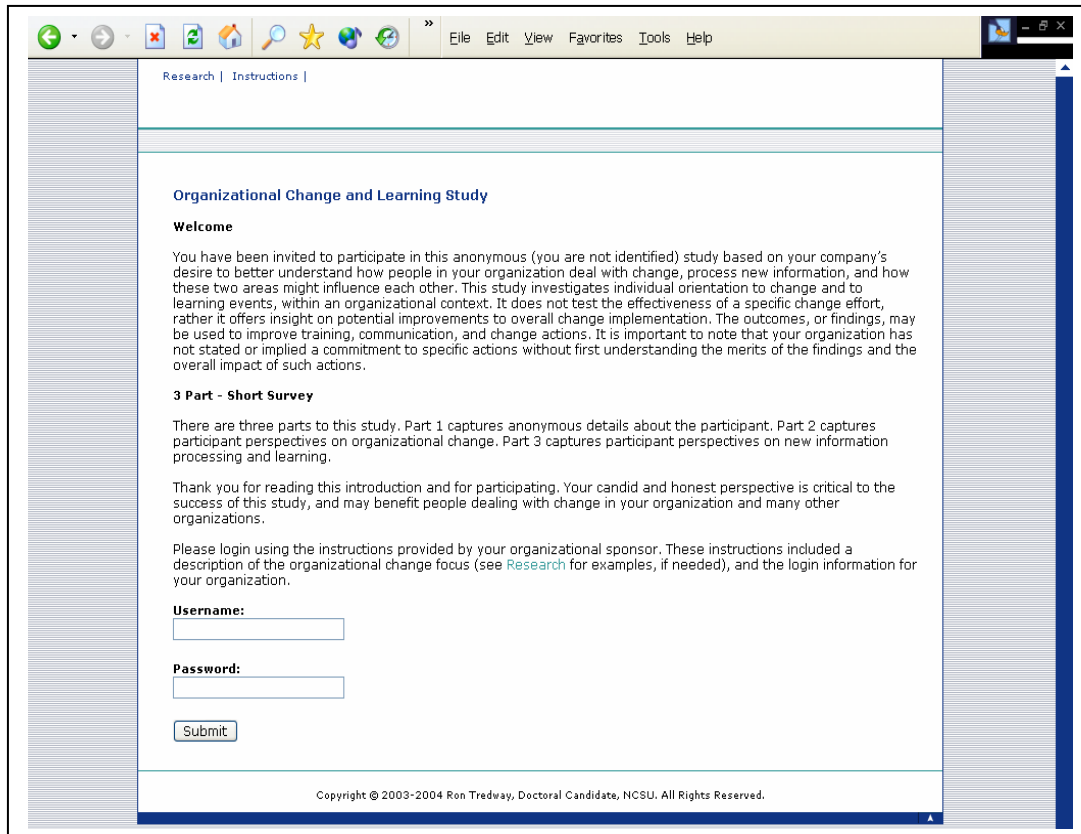
1. This board complies with requirements found in Title 45 part 46 of The Code of Federal Regulations. For NCSU the Assurance Number is: FWA00003429; the IRB Number is: IRB00000330.
2. The IRB must be notified of any changes that are made to this study.
3. Your approval for this study lasts for one year from the review date. If your study extends beyond that time, including data analysis, you must obtain continuing review from the IRB.

Please provide your faculty sponsor with a copy of this letter. Thank you.

Sincerely,

Debra Paxton
NCSU IRB

Appendix D: Organization Change and Learning Online Survey



Appendix D: Organization Change and Learning Online Survey-continued

Educational Research Study

Greetings,

You have been invited to participate in an educational research study aimed at improving understanding of organization change and its relationship to how people learn. The outcomes of this study will offer insights to organizational leaders and teams for prioritizing and developing learning interventions that will help facilitate organization change such as the changes your organization is experiencing. Some examples include mergers, process reengineering and improvements, new leadership, changes in customer alignment, IT system changes, regulation and market shifts, etc.

The study is completely voluntary, and involves a 20 – 30 minute, on-line survey that will ask you questions about you, your organization, and your reactions to organizational change. You may feel a bit uncomfortable answering some of the questions, and you are free to skip any question that makes you uncomfortable. While there is no direct benefit to you from this research, what we learn could positively impact your organization and enhance the change process.

Your experiences and perspectives about how you learn and how you respond to change would be beneficial to this study. Your responses are confidential, and no personally identifiable information will be collected. Results are only aggregated and shared at the organization level. Your individual results will not be visible alone, only in the context of your functional role. Also, the name of the organization is masked to protect its competitive position.

If you agree to participate, please get started right away by returning to the home page and entering the user name and password provided by your organization's sponsor.

Thank you for participating in this research study. I trust that you will enjoy the process.

Ron Tredway, SPHR
 Graduate Researcher
 North Carolina State University
trintab@changeandlearning.org

Instructions for Change and Learning Study

3-Part Survey

There are 3 brief parts to this survey, averaging approximately 20-30 minutes to complete in its entirety. Please pay careful attention to the differences in how each part is to be completed. At the end of each page, select the "Next" button to continue.

Part 1 - Demographic Data

Please select the bubble beside each item that best represents you as a respondent to this survey. The bubble is to the left of your selected choice. Only one (1) bubble should be selected for each numbered item. "Function" is used to identify the type of job/work you are most closely involved in most of the time.

Part 2 - Organization Change Orientation

Please select one (1) bubble per numbered statement, which most effectively describes how often the statement is true about you during change within an organizational context. Before starting, it's best to think about the change mentioned/described by your organizational sponsor, as well as two or three other organization change experiences in your career, with the same or different organizations. Then select the frequency (i.e.: 5-Most Often) that best represents how often you recall acting/reacting according to the statement. Remember, this is confidential, and your confident and candid responses are best able to ensure the effectiveness of this study and the resulting benefits to organizations experiencing complex change.

Part 3 - New Information Processing and Learning

*Note: These instructions are different! Please complete all four of the endings to each numbered statement, by selecting "1" for "least like me," "2" for "somewhat like me," "3" for "more like me," and "4" for "most like me." Please select a value for *each* statement ending, that does **NOT repeat the value selected** for any of the other three endings in that statement.

For example...

1. When I learn

<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
1	2	3	4	
I like to deal with my feelings				
<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1	2	3	4	
I like to think about ideas				
<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	
1	2	3	4	
I like to be doing things				
<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	
1	2	3	4	
I like to watch and listen				

* Notice there are no repeated value selections across the statement endings.

Appendix D: Organization Change and Learning Online Survey-continued

Research | Instructions |

Part 1: Profile of the Participant (Page 1 of 7)

1. Password Please re-enter password:

2. Gender Female Male

3. Age <25 25-30 30-35 35-40 40-45 45-50 50-55 >55

4. Race African American Hispanic American Indian Asian
 African Caucasian Other

5. Supervisor Manager: I supervise the work of more than 1 direct report
 Non-manager: I do not supervise the work of more than 1 direct report.

6. Function My primary job function currently is...
 Accounting/Finance
 Contracts
 Administrative Support
 Sales/Marketing
 Client Relations
 Human Resources

5. Supervisor Manager: I supervise the work of more than 1 direct report
 Non-manager: I do not supervise the work of more than 1 direct report.

6. Function My primary job function currently is...
 Accounting/Finance
 Contracts
 Administrative Support
 Sales/Marketing
 Client Relations
 Human Resources
 IT - Data Entry and Warehousing
 IT - Database Administration
 IT - Programming
 IT - Web Design
 IT - Computer Support
 Production and Graphics
 Peer Review Support
 Project Management
 Medical Specialist (e.g. Nosologists, etc.)
 Statistics
 Public Health
 Scientist
 Nursing
 Clinical Trials Support
 Health Communications
 Training
 Medical Writing
 Corporate Writing
 Executive
 Other

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Appendix D: Organization Change and Learning Online Survey-continued

Research | Instructions |

Part 1: Profile of the Participant (Page 2 of 7)

7. Organization Prior to my organization's acquisition/merger, I worked for... (see memo from your sponsor for instructions).

- Org 1
- Org 2
- Org 3
- Org 4
- Other

8. Previous Function My primary job function prior to my organization's acquisition/merger was...

- Accounting/Finance
- Contracts
- Administrative Support
- Sales/Marketing
- Client Relations
- Human Resources
- IT - Data Entry and Warehousing
- IT - Database Administration
- IT - Programming
- IT - Web Design
- IT - Computer Support
- Production and Graphics
- Peer Review Support
- Project Management
- Medical Specialist (e.g. Nosologists, etc.)
- Statistics
- Public Health
- Scientist
- Nursing
- Clinical Trials Support
- Health Communications
- Training
- Medical Writing
- Corporate Writing
- Executive
- Other

[Next](#)

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Appendix D: Organization Change and Learning Online Survey-continued

Research | Instructions |

Part 2: Organization Change Orientation (Page 3 of 7)

Instructions: Think about changes you have experienced in organizational settings, including the one described by your organizational sponsor, and how you reacted to those changes. Please complete the next 36 items by checking one (1) bubble per item, indicating how often the statement describes your reaction to change. There are no right or wrong answers, only your perception of your own behavior. Please be candid, your survey is anonymous.

1=Almost Never 2=Seldom 3=Not Very Often 4=Sometimes 5=Very Often 6=Almost Always

1. I try to find out right away how organizational changes might affect me.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6
2. I tend to minimize my involvement in organizational change.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6
3. I look for a person or group to fault when organizational changes bother me.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6
4. People who know me would describe me as proactive about change.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6
5. I tend to lament about organizational changes.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6
6. I hide my opposition to organizational change.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6
7. My response to organizational change is to ask, "What's in it for me?"	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6
8. I find myself complaining about changes in this organization.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6
9. I attempt to weaken organizational change with which I disagree.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6
10. I initiate changes that I believe are needed.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6
11. I express my points of view about organizational changes.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6
12. I interfere with or disrupt what I believe to be misguided organizational changes.	<input type="radio"/> 1 <input type="radio"/> 2 <input type="radio"/> 3 <input type="radio"/> 4 <input type="radio"/> 5 <input type="radio"/> 6

Appendix D: Organization Change and Learning Online Survey-continued

Research | Instructions |

Part 2: Organization Change Orientation (Page 4 of 7)

Instructions: Please check one (1) box per item, indicating how often the statement describes your reaction to change.
1=Almost Never 2=Seldom 3=Not Very Often 4=Sometimes 5=Very Often 6=Almost Always

13. I use systematic methods to make organizational changes work. 1 2 3 4 5 6

14. I take a neutral position on organizational changes. 1 2 3 4 5 6

15. I find others to be responsible for my difficulties with organizational changes. 1 2 3 4 5 6

16. I try to "stay two steps ahead" in expectation of needed changes. 1 2 3 4 5 6

17. A "wait and see" attitude about organizational changes usually suits me. 1 2 3 4 5 6

18. When I resist changes, I am open about it. 1 2 3 4 5 6

19. My major approach to organizational change is problem solving. 1 2 3 4 5 6

20. I withhold support for organizational changes. 1 2 3 4 5 6

21. I actively work against organizational changes with which I disagree. 1 2 3 4 5 6

22. I am the kind of person who makes change happen. 1 2 3 4 5 6

23. I tend to "go along with" organizational changes. 1 2 3 4 5 6

24. I tend to blame others for problems with organizational changes. 1 2 3 4 5 6

[Next](#)

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Appendix D: Organization Change and Learning Online Survey-continued

Research | Instructions |

Part 2: Organization Change Orientation (Page 5 of 7)

Instructions: Please check one (1) box per item, indicating how often the statement describes your reaction to change.
1=Almost Never 2=Seldom 3=Not Very Often 4=Sometimes 5=Very Often 6=Almost Always

25. I attempt to anticipate the need for changes in the work place. 1 2 3 4 5 6

26. I refrain from taking sides on organizational changes. 1 2 3 4 5 6

27. My normal reaction to organizational changes is passive resistance. 1 2 3 4 5 6

28. I look for potential barriers to goal attainment. 1 2 3 4 5 6

29. I follow rather than lead in organizational change situations. 1 2 3 4 5 6

30. I use covert methods to thwart unnecessary organizational changes. 1 2 3 4 5 6

31. I take a personal interest in evaluating upcoming organizational changes. 1 2 3 4 5 6

32. I refrain from actively supporting organizational changes. 1 2 3 4 5 6

33. I make visible attempts to resist organizational changes. 1 2 3 4 5 6

34. I look for solutions to problems created by organizational change. 1 2 3 4 5 6

35. I participate in gripe sessions about organizational changes. 1 2 3 4 5 6

36. I conceal my dissent to organizational changes. 1 2 3 4 5 6

Next

Research | Instructions |

Organizational Change a...
covert methods - hidden actions

Organization Change Orientation (Page 5 of 7)

check one (1) box per item, indicating how often the statement describes your reaction to change.
1=Almost Never 2=Seldom 3=Not Very Often 4=Sometimes 5=Very Often 6=Almost Always

25. I attempt to anticipate the need for changes in the work place. 1 2 3 4 5 6

26. I refrain from taking sides on organizational changes. 1 2 3 4 5 6

27. My normal reaction to organizational changes is passive resistance. 1 2 3 4 5 6

28. I look for potential barriers to goal attainment. 1 2 3 4 5 6

29. I follow rather than lead in organizational change situations. 1 2 3 4 5 6

30. I use covert methods to thwart unnecessary organizational changes. 1 2 3 4 5 6

Appendix D: Organization Change and Learning Online Survey-continued

Research | Instructions |

Part 3: New Information Processing and Learning (Page 6 of 7)

Instructions: Using the buttons provided, select "4" for the sentence ending that describes how you learn *best*, and so on down to "1" for the sentence ending that seems *least* like the way you learn. Be sure to rank all the endings for each sentence unit. **Do not double rank (e.g., two "3s")**.

*NOTE: Only one "1" used, only one "2" used, only one "3" used, and only one "4" used.

1. When I learn 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

I like to deal with my feelings I like to think about ideas I like to be doing things I like to watch and listen

2. I learn best when 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

I listen and watch carefully I rely on logical thinking I trust my hunches and feelings I work hard to get things done

3. When I am learning 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

I tend to reason things out I am responsible about things I am quiet and reserved I have strong feelings and reactions

4. I learn by 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

feeling doing watching thinking

5. When I learn 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

I am open to new experiences I look at all sides of issues I like to analyze things, break them down into their parts I like to try things out

6. When I am learning 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

I am an observing person I am an active person I am an intuitive person I am a logical person

[Next](#)

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Research | Instructions |

Part 3: New Information Processing and Learning (Page 7 of 7)

Instructions: Using the buttons provided, select "4" for the sentence ending that describes how you learn *best*, and so on down to "1" for the sentence ending that seems *least* like the way you learn. Be sure to rank all the endings for each sentence unit. **Do not double rank (e.g., two "3s")**.

*NOTE: Only one "1" used, only one "2" used, only one "3" used, and only one "4" used.

7. I learn best from 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

observation personal relationships rational theories a chance to try out and practice

8. When I learn 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

I like to see results from my work I like ideas and theories I take my time before acting I feel personally involved in things

9. I learn best when 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

I rely on my observations I rely on my feelings I can try things out for myself I rely on my ideas

10. When I am learning 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

I am a reserved person I am an accepting person I am a responsible person I am a rational person

11. When I learn 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

I get involved I like to observe I evaluate things I like to be active

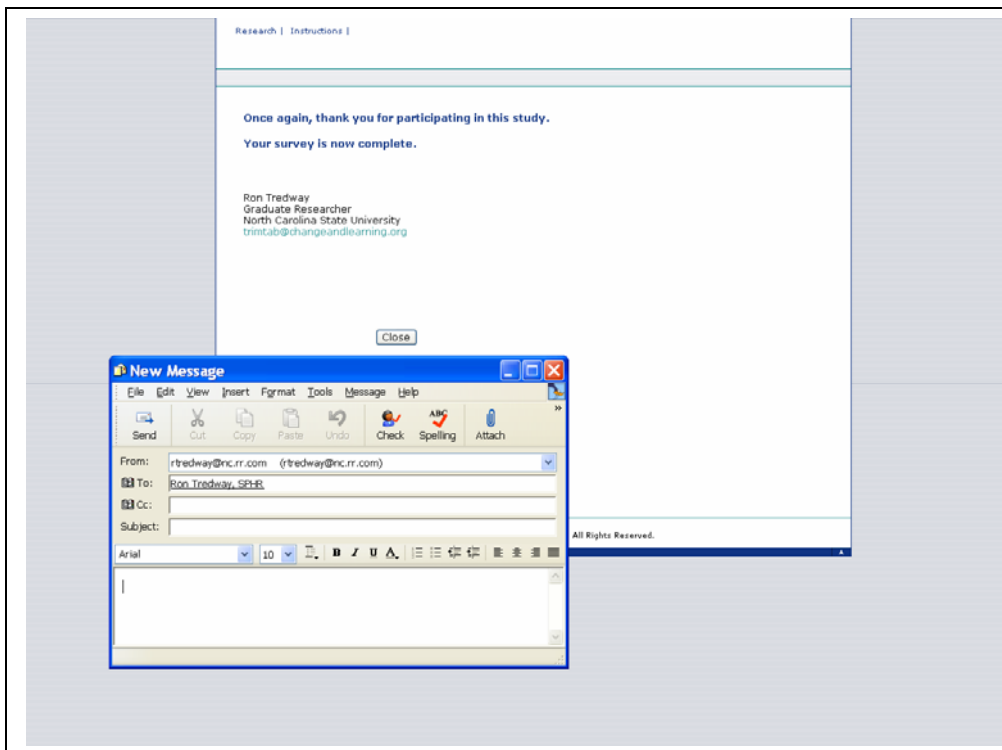
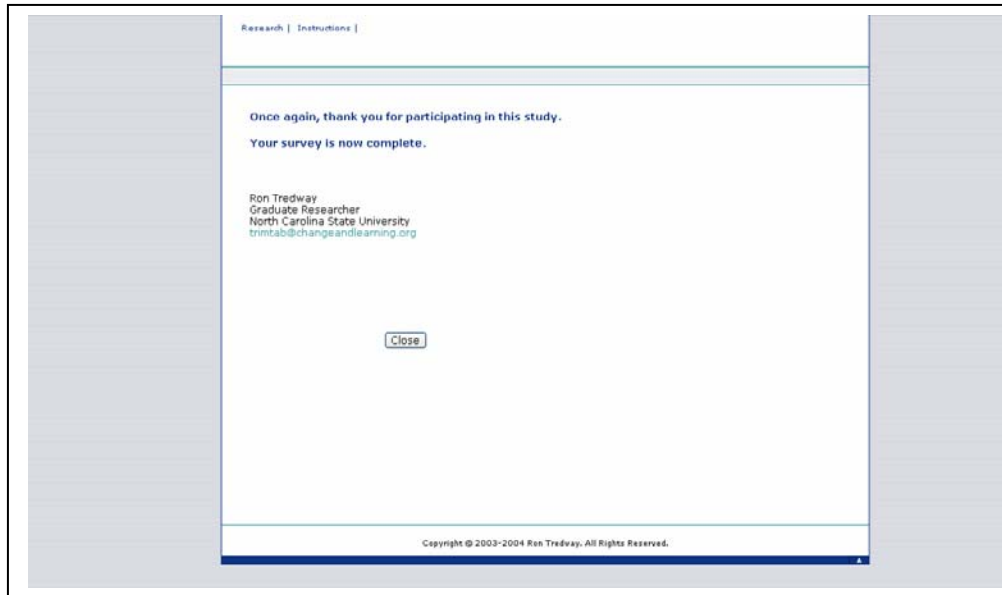
12. I learn best when 1 2 3 4 1 2 3 4 1 2 3 4 1 2 3 4

I analyze ideas I am receptive and open-minded I am careful I am practical

[Submit](#)

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Appendix D: Organization Change and Learning Online Survey-continued



Appendix E: Executive Sponsor email 1 Part 1 of 2

MEMORANDUM

January 20, 2004

From: *Executive Sponsor*, VP, Organization and People Development

To: Organizational Distribution

Subject: Organizational Research – Change and Learning

I would like to invite you to participate in an exciting and informative research project conducted by a doctoral candidate at North Carolina State University in collaboration with *BigOrg*. I find it exciting because of its relevance to improving organizational effectiveness and valuing people in the organization. The research is aimed at helping organizations like *BigOrg* understand the connection between learning and change among people like us, in organizations experiencing complex change such as the acquisitions and significant growth we have realized over the last 28 months, and continue to experience.

Participation in the research is completely voluntary, and involves about 10 - 20 minutes to complete an online survey created specifically for data collection on the topic. I feel confident it will be productive for us individually and corporately, as we seek to develop our understanding and capabilities regarding how we deal with change.

Thank you in advance for your timely participation. The site will only be available for 2 weeks from the day following this memo, so your early response would be greatly appreciated.

Please read the attached instructions for specific details on getting started and successfully participating as part of the *BigOrg* collaborative study. Generic instructions about the study and completing it can be found online.

Exec Sponsor

(Continued on next page)

*Naming conventions in *italics* were used to disguise the identity of the organization and thereby maintain confidentiality of the organization and its employees.

Appendix E (continued): Executive Sponsor email 1 Part 2 of 2

BigOrg Specific Instructions

Some key instructions for *BigOrg* participation are as follows:

1. The survey is confidential. Candid responses are needed for effective results.
2. The nature of “organization change” to keep in mind are:
 - a. the acquisitions of *Org2*, *Org3*, and *Org4*.
 - b. The rapid growth *BigOrg* has experienced, including acquisitions, over the last 28 months
3. When prompted for your Organization identity related to an acquisition...
 - a. select “Org1” if you were part of *BigOrg* (*Org1 Name-different from BigOrg*) prior to October, 2001
 - b. select “Org2” if you were part of *Org2 Name* prior to October, 2001
 - c. select “Org3” if you were part of *Org3 Name* prior to January, 2003
 - d. select “Org4” if you were part of *Org4 Name* prior to October, 2003
 - e. select “Other” if you were not part of *BigOrg* prior to October 2001, or any one of the acquisitions (i.e. was hired as a *BigOrg* employee).
4. When prompted for “Function” please select the function that most closely identifies the role you perform currently with *BigOrg*, and your role prior to becoming part of *BigOrg* (on second page of survey).
5. Access the survey at URL: <http://www.changeandlearning.org/acquisitions/>
6. Use the Username: ChangeandLearn (not case sensitive/ensure correct spelling)
7. Use the Password: 7015

Thank you for your prompt attention to responding.

*Naming conventions in *italics* were used to disguise the identity of the organization and thereby maintain confidentiality of the organization and its employees.

Appendix F: Interview Guide

Interview Guide – Change and Learning: Merger

Greeting:

Thank you _____ for participating in this study of organization change within merger and acquisition environments. Two areas in particular are involved in the study; how individuals within organizations deal with the merger change, and how individuals within organizations process new information, or learn. This study is intentionally looking at a very specific example of a merger and these elements, that of *BigOrg*. Your involvement in *BigOrg*, and *Org1* (or *Org2*, *3*, *4*, or *5*) enables you to describe inter-workings of the organization, and your learning experience. Since *BigOrg* uses the term acquisition, rather than merger, I will do the same. The purpose of this interview is to gain your insights in helping paint a picture of the organization, both pre-acquisition and post-acquisition, that will help those who read the study understand the change complexities of *BigOrg*. This session will be recorded to ensure accuracy in data collection and analysis, but de-identified using the convention of “Interview Participant (IP) 1” for example. I will start by reading the consent form, and recording your verbal response.

There are two parts to this interview. Part 1 will simply be to collect, or clarify, a few key demographic details about the organization in general. Part two will be used to capture your insights and perceptions about the organization relative to the acquisition. Confidentiality is maintained on your insights and perceptions to help ensure the integrity of the data. Do you have any questions before we start?

Part 1: (approximately 10 minutes)

1. How would you describe your role in *BigOrg* currently?
2. What experience do you bring to your current role, with and before *BigOrg*?
3. Which has been your preparation for your current role? (e.g.: education, training, etc.)

Part 2: (approximately 1.5 hours)

Primary Question:

What are your thoughts and feelings about the acquisition, and the changes resulting from the acquisition?

Possible Probes:

1. What types of learning opportunities have you been offered by *BigOrg* since the acquisition announcement?
2. What changes have had the most impact on the people? (positive and negative)
3. How would you describe the culture of *BigOrg* today? (e.g.: what are the norms people live by, how work gets done, how people communicate, how learning occurs, how leadership is viewed, etc.)
4. How would you describe the current success, or failure, of the acquisition to achieve the goals stated when the acquisition was announced?
5. What will *BigOrg* be most recognized for one year from now? Why?

Appendix G: Data Codes Listing

ID:	Single to three digit code, in ascending order: 1-245 (Number)
Gender: Single digit code, (Gender)	1=Female, 2=Male
Age: Single digit code, (Age)	1=<25 2=25-30 3=30-35 4=35-40 5=40-45 6=45-50 7=50-55 8=>55
Race: Single digit code, (Race)	1=African American 2=Hispanic 3=American Indian 4=Asian 5=African 6=Caucasian 7=other
Supervisor Role: Single, (SupvMgr)	1=Manager/supervisor 2=Non-manager/supervisor
Function: (Function)	1=Human Resources/Training/Corporate Writing 42= Other 49= Administrative Support 51= IT - Data Entry and Warehousing 52= IT - Programming 53= IT - Web Design 54= IT - Computer Support/ Database Administration 55= Production and Graphics 56= Peer Review Support/ Medical Specialist (Nosologists, etc.)/ Public Health 57= Project Management 59= Statistics 61= Clinical Trials Support 62= Health Communications/ Medical Writing 65= Executive 66= Accounting/Finance/ Contracts 67= Sales/Marketing/ Client Relations 68= Scientist
Organizational Entity: (Entity)	1=Org1 (Org1 prior to October 2001) 2=Org2 (Org2 prior to October 2001) 3=Org3 (Org3 prior to January 2003) 4=Org4 (Org4 prior to October 2003) 5=Other (joined BigOrg after 10/01, & NOT part of Orgs1-4.

Appendix H: Response Rates By Organization

	Managers			Non-Managers			Usable Totals:		
	Available	Responding	Rate	Available	Responding	Rate	Available	Responding	Rate
Org1	42	30	71%	115	55	48%	157	85	54%
Org2	17	14	82%	63	19	30%	80	33	41%
Org3	3	2	67%	8	3	38%	11	5	45%
Org4	8	8	100%	36	11	31%	44	19	43%
Org5	37	22	59%	247	77	31%	284	99	35%
TOTAL:	107	76	71%	469	165	35%	576	241	42%

Appendix I: BigOrg Demographic Data by Organizational Entity

The SAS System The FREQ Procedure
Table of OENTI TY by FUNCTI ON

OENTI TY(OENTI TY)	FUNCTI ON(FUNCTI ON)									Total
Frequency	1	42	49	51	52	53	54	55	56	
Percent										
Row Pct										
Col Pct										
1	3	7	5	3	14	6	5	1	4	85
	1.24	2.90	2.07	1.24	5.81	2.49	2.07	0.41	1.66	35.27
	3.53	8.24	5.88	3.53	16.47	7.06	5.88	1.18	4.71	
	37.50	29.17	19.23	60.00	48.28	60.00	41.67	10.00	28.57	
2	0	1	4	0	4	0	0	5	6	33
	0.00	0.41	1.66	0.00	1.66	0.00	0.00	2.07	2.49	13.69
	0.00	3.03	12.12	0.00	12.12	0.00	0.00	15.15	18.18	
	0.00	4.17	15.38	0.00	13.79	0.00	0.00	50.00	42.86	
3	0	3	0	0	1	0	0	0	0	5
	0.00	1.24	0.00	0.00	0.41	0.00	0.00	0.00	0.00	2.07
	0.00	60.00	0.00	0.00	20.00	0.00	0.00	0.00	0.00	
	0.00	12.50	0.00	0.00	3.45	0.00	0.00	0.00	0.00	
4	0	2	3	0	0	0	1	0	0	19
	0.00	0.83	1.24	0.00	0.00	0.00	0.41	0.00	0.00	7.88
	0.00	10.53	15.79	0.00	0.00	0.00	5.26	0.00	0.00	
	0.00	8.33	11.54	0.00	0.00	0.00	8.33	0.00	0.00	
5	5	11	14	2	10	4	6	4	4	99
	2.07	4.56	5.81	0.83	4.15	1.66	2.49	1.66	1.66	41.08
	5.05	11.11	14.14	2.02	10.10	4.04	6.06	4.04	4.04	
	62.50	45.83	53.85	40.00	34.48	40.00	50.00	40.00	28.57	
Total	8	24	26	5	29	10	12	10	14	241
	3.32	9.96	10.79	2.07	12.03	4.15	4.98	4.15	5.81	100.00

Frequency	57	59	61	62	65	66	67	68	Total
Percent									
Row Pct									
Col Pct									
1	13	3	2	7	3	2	3	4	85
	5.39	1.24	0.83	2.90	1.24	0.83	1.24	1.66	35.27
	15.29	3.53	2.35	8.24	3.53	2.35	3.53	4.71	
	33.33	30.00	22.22	41.18	75.00	22.22	37.50	57.14	
2	9	0	0	3	0	1	0	0	33
	3.73	0.00	0.00	1.24	0.00	0.41	0.00	0.00	13.69
	27.27	0.00	0.00	9.09	0.00	3.03	0.00	0.00	
	23.08	0.00	0.00	17.65	0.00	11.11	0.00	0.00	
3	0	0	0	0	0	0	1	0	5
	0.00	0.00	0.00	0.00	0.00	0.00	0.41	0.00	2.07
	0.00	0.00	0.00	0.00	0.00	0.00	20.00	0.00	
	0.00	0.00	0.00	0.00	0.00	0.00	12.50	0.00	
4	5	0	6	0	1	1	0	0	19
	2.07	0.00	2.49	0.00	0.41	0.41	0.00	0.00	7.88
	26.32	0.00	31.58	0.00	5.26	5.26	0.00	0.00	
	12.82	0.00	66.67	0.00	25.00	11.11	0.00	0.00	
5	12	7	1	7	0	5	4	3	99
	4.98	2.90	0.41	2.90	0.00	2.07	1.66	1.24	41.08
	12.12	7.07	1.01	7.07	0.00	5.05	4.04	3.03	
	30.77	70.00	11.11	41.18	0.00	55.56	50.00	42.86	
Total	39	10	9	17	4	9	8	7	241
	16.18	4.15	3.73	7.05	1.66	3.73	3.32	2.90	100.00

Frequency Missing = 4

Appendix J: Learning Modes by Organizational Entity

