

**THE MOTIVATIONS-ATTRIBUTES-SKILLS-KNOWLEDGE
COMPETENCY CLUSTER VALIDATION MODEL
AN EMPIRICAL STUDY**

A Dissertation

by

JEFFERY ALLEN STEVENS

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

August 2003

Major Subject: Educational Human Resource Development

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August 2003

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ABSTRACT

The Motivations-Attributes-Skills-Knowledge

Competency Cluster Validation Model: An Empirical Study. (August 2003)

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This empirical research study had two main purposes with regard to competency cluster validation. First, this empirical research study was focused upon finding the gaps in the literature that existed pertaining to the Motivations-Attributes-Skills-Knowledge Inverted Funnel Validation (MIFV) competency cluster model.

The second purpose of this empirical research study was to introduce a new competency cluster validation model (MIFV). This model, if properly developed, should serve as a strong workforce development and performance measurement tool as well as a communication tool and a blueprint for success for employees. The MIFV is a sequentially upward funneling competency cluster validation model. The MIFV will provide an opportunity for the study participants to measure their efforts. In summary, the MIFV is a quantifiable model focused on workforce development and efficiencies.

DEDICATION

This dissertation is dedicated to my wife, Gloria, as well as my children, Amanda and John, whose love and support allowed me to meet this goal.

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For their guidance, advice and support, I would like to express my deepest thanks and gratitude to the members of my committee, Dr. Walter F. Stenning, Dr. Richard Cummins, Dr. Lloyd J. Korhonen, and Dr. Kenneth E. Paprock. My special thanks, admiration and respect go to Dr. Walt F. Stenning, my committee chairman, the person who guided me through dark hours during my experience at Texas A&M University.

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CHAPTER I

INTRODUCTION

The world for employees of today has evolved into a rapidly changing and highly competitive, knowledgeable worker environment. This environment is based on simple-to-complex and complex-to-simple processes that require varying degrees of competency cluster mastery (Noe, 1998). The validation with regard to defined competency cluster generally focuses on the extent, if any, to which businesses are investing sufficiently in learning to generate the growth and return-on-investment (ROI) needed to evolve as a society (Kennedy, 1993). The United States business community continues to spend billions of dollars on workforce development each year with little or no ROI (Hammer, 1996). However, the primary effort pertaining to training and workforce development focuses on work skill activities and little else. To this point, work skill development activities focus upon three major areas of training (Hammer, 1996). The areas are described as value-added work, mandatory and/or compliance edicts as well as non-value-added work (Hammer, 1996).

The majority of training efforts within the business community generally focus on value-added work as it provides the quickest ROI for a company's bottom line (Phillips, 1996). Value-added training is generally viewed as that training which immediately affects the bottom line of a company (Gall, 1986). As such, the majority

The style and format for this dissertation follow that of the *American Educational Research Journal*.

of value-added training generally focuses on sales training and/or technical training as well as machine specific types of training. This type of training generally relies on short-term results that generally are easily quantified by a company. While this type of training is generally a quick and short-term source of revenue generation, it does not position a company for future challenges nor is it often customized to a company and its culture (Cortada and Woods, 1998).

The second most prevalent form of training that most companies focus upon is requirements mandated by various licensing and compliance authorities. The most common form of mandatory training revolves around subject matter related to safety, legal risk and continuing education credits. While this form of training can aid a company in their effort to reduce risk related to their employee population, more times than not, it comes in the form of an “off-the-shelf package” (Hammel and Prahalad, 1996). Off-the-shelf training such as safety training generally takes the form of mass produced books, seminars, tapes, etc. This type of training generally does not address the complexity or uniqueness of specific workforces functioning within their business sector(s) (Hammel and Prahalad, 1996). Mandated or compliance forms of training, as value-added training does not prepare a company to compete in the current nor the future workplace (Boyett and Conn, 1991).

The last category of training offered to workers comes in the form of what is described as non-valued added training. Non-value-added training has traditionally focused upon some form of competency cluster mastery, such as customer service, as well as knowledge management, organizational development and other workforce development functions and/or efforts that are not easily quantified (Hesselbein et al.,

1998). Historically, the majority of companies within the United States generally consider this type of training as a time and material drain on their limited resources. Generally speaking, these companies are blinded to the valuable ROI associated with competency cluster mastery (Hammel and Prahalad, 1996).

Research has shown that this type of training will position a company to compete in the current and future workplace (Hammel and Prahalad, 1996). With the concept of preparing for the future workplace, the ability to define, analyze and manage competency clusters has become the key component pertaining to the success or survival within today's business environment as well as the business community of tomorrow (Boyatzis et al., 1995).

Purpose of Study

As the new century's workforce evolves, a significant amount of work, time and effort has gone into competency cluster modeling. However, many workforce development efforts have not addressed the complicated process of competency cluster validation models. A major gap in literature exists related to development of a defined process of developing comprehensive competency cluster validation models. Further, very little effort has gone into the validation of motivations and attributes with regard to competency clustering. To this point, the major purpose of this study will focus on the introduction of the Motivations-Attributes-Skills-Knowledge Inverted Funnel Validation (MIFV) competency cluster model.

It is important to note that many employers within the United States utilize some form of goal setting, performance plans workforce programs, etc. However, these types

of plans are void of the necessary tools to achieve goals, performance standards, and related information that are used to form a comprehensive competency cluster validation model. As such, the main purpose of the MIFV within this study will be to put forth a model that has the potential to validate competency cluster models. It is important to note that the MIFV may not be restricted solely to workforce development initiatives. As will be further delineated in Chapter V of this empirical research study, the MIFV has pertinent application potential in other general business and employee related areas.

Research Questions

1. What type of needs assessment and/or task analysis is in current use by your community college district?
2. What types of performance measurement system(s) does your community college district utilize as it pertains to a competency cluster validation process?
3. Has your community college district created relevant customized models within your competency cluster validation and/or workforce development partnership(s)?
4. To what degree are comparisons made between motivations-attributes-skills-knowledge within your community college district compared to your competency cluster validation process?
5. What techniques are used to follow the graduate's progress back to the workplace and assess the transfer of training?

6. When building training programs within your community college district competency cluster validation process, to what degree are the following foundations measured and developed related to the MIFV?
 - A. Motivations needed
 - B. Attributes needed
 - C. Skills needed
 - D. Knowledge needed

Statement of the Problem

The combination of a slow moving educational system focused on the elusive statistical chase of mandated testing and the business world's inability to move beyond the basic foundations of the post World War II training processes, has caused a crisis to emerge in the field of workforce development (Mohrman et al., 1995). Employers in the United States have created a vast number of jobs requiring higher skill levels than in the past. To this point, United States employers are having an increasingly difficult time finding qualified employees (ACT™ WorkKeys, 2003).

One of the most significant challenges to present itself within the field of workforce development as it pertains to the evolving business world of today relates to how to meet the demands of the United States citizen population. This is of particular interest with regard to the creation of effective global workforce solutions for social partnership and cooperation (Kennedy, 1993). As such, how does the current workforce meet the above-mentioned demands with scores falling, teacher shortages rising and

education administrators focused on arbitrary tests as opposed to preparing the next generation's labor pool? (Coleman and Cressey, 1990).

With the lack of valid and appropriate workforce preparation occurring within the primary and secondary educational systems, the overwhelming impetus for workforce development has become the responsibility of the community college districts throughout the United States. Further, the field of adult education and workforce development has become one of the most active fields within the United States business community (Hanna, 1988). Further, American businesses are annually spending billions of dollars in an attempt to develop a workforce through outdated processes that provide them with very little ROI (Collins, 2001).

A sound process to overcome the current challenges and shortcomings facing the development of the United States workforce pertains to competency clustering and thus competency cluster validation. The initial efforts within the United States pertaining to competency cluster mastery were focused upon competency-based instruction. This type of workforce development relates to the process of learning styles and exit requirements rather than entrance needs leading to a stated outcome (Stenning, 1999). This type of process further de-emphasizes competition among the learners and allows for differences among the individual learners (Korhonen, 1999). Lastly, this process began to incorporate task analysis as a part of the workforce competency cluster process (Elias and Cunningham, 1985). The standard approach to competency-based instruction is to set up a task oriented learning system, which is specified in terms of clearly observable motivational outcomes (Brookefield, 1991).

As this study evolved pertaining to the various aspects of the competency cluster validation process, three major gaps in the related literature emerged. First, the traditional means of competency clustering process generally focuses solely on knowledge skills and abilities, with an occasional insight into behavior and attitude aspects of a job. This process seems to be focused on an individual's readiness to learn and the combination of knowledge and skills of said learners (DeSimone and Harris, 1998). Further, this process has repeated itself time and again enlisting the likes of Gagne, Kolb, Lewin, Chaplin, and Bandura and others. However, this process is focused more on the time card punching workers as opposed to the new knowledge and complex process worker. As such, the previously mentioned aspects highlight the first major gap in the literature.

The MIFV will add two new dimensions as well as reorganize the sequence as it pertains to this body of research. The new dimensions will focus on motivations and attributes related to sequential competency cluster modeling. These new dimensions will be further delineated in Chapter IV of this study.

The second major gap in the literature is the order in which the knowledge skills and abilities and/or attitudes are sequentially listed. A new sequential process pertaining to competency cluster validation modeling will place the traditional first step in the process at the end of the model as will be further discussed in Chapter III of this study.

The third and most significant gap in the literature illustrates the lack of a competency cluster validation process. To this point, the MIFV's ability to validate the competency cluster process will fill in the gap with regard to this body of research.

A new competency cluster validation model will be proposed based on past work within the field of competency clustering research. Further, delineation the widespread workforce development opportunities will be made available through implementation of the MIFV competency cluster validation model. The research accumulated within in this study will allow for the implementation of a new and comprehensive workforce competency cluster model. Lastly, the model will serve as the next logical rite of passage pertaining to competency clustering process with regard to the society and business's social cooperation (Collins, 2001).

Significance of Study

The significance of this study will be the opportunity for community college districts, governmental entities, employers and other entities to implement the appropriate workforce development competency cluster validation models. The areas that are most likely to be positively impacted by a comprehensive competency cluster validation model will pertain to five major aspects within the participant community college districts.

The first significant aspect will explore a designated study group of community college districts with regard to their competency cluster processes. Further the designated community college districts will be studied related to their level, if any, of validating competency clustering processes.

The second significant aspect pertains to the ability of the participant community college districts to validate the multitude of competency cluster processes they deliver to their customers. This is important in that both the community college districts and client

businesses will be able to compare and contrast the various competency clusters. If this can be accomplished, the perception of the delivery model with regard to the community college districts will be greatly enhanced.

The third significant aspect will be that MIFV will provide the participating community college districts an opportunity to create a quantifiable database with regard to a historical view of their competency clustering successes. This database will provide an invaluable tool with regard to research as well as program development and enhancement.

The fourth significant aspect will be the opportunity for further research to be conducted within the empirical area of research. To this point, the MIFV introduces new components within the competency clustering process. Further, it represents a new competency clustering process as well as a new upward funneling sequential order that is quantifiable by its very nature.

The fifth significant point will introduce a competency cluster process, the MIFV. The MIFV will revolutionize the competency cluster process in that community college districts may measure their efforts within the workforce development process.

Assumptions

To explore the hypothesis as put forth within this empirical research study, several assumptions have been. First, it is assumed that the participating community college will have a knowledge base of the local labor pool and business community within their regional service area. This will provide the study with an invaluable insight

to the types of motivations, attributes, skills and knowledge needed to create selected competency cluster validation processes within the study group.

A second major assumption is that selected community college districts will have a clear understanding of the needs of the rapidly evolving workforce of today and the future. This clear understanding must not only encompass the local workforce but a general understanding of workforce trends as it pertains to the national workforce within the United States. This factor will be critical with regard to investigating trends in the work place as the MIFV model evolves.

The third major assumption focuses on the general concept of competency cluster validation modeling and its application to the business community, which the study's community college districts participants serve. This will be a critical component as the designated community college district official collects and returns the information.

The fourth major assumption will be that the study's participants have an understanding about the foundations of training and workforce development. This is a critical component in that a common communication process related to workforce development and training with regard to the creation of a MIFV cannot be ignored. Without a common communication process related to the above mentioned topics, this study runs the risk of failing to prove the stated hypothesis as well as failing to meet the standards related to the purpose of this study.

The last assumption focuses on the selected community college districts understanding of their regional service area client business strategies. The ability to understand the business strategies of the participant companies will purify the blind

collection of data. Further, it will provide a clearer insight into the validation of the study's hypothesis, the introduction of the MIFV model.

Limitations

The first major limitation pertains to the designated community college districts lack of knowledge related to the rapidly changing business world not only throughout their regional service area, but throughout the United States as well. The specific knowledge base of the respondents is a second major limitation. To this point, there is little or no literature related specifically to the MIFV, which poses a further limitation with regard to the designated community college district respondents.

Because this is an empirical research study, the concept may be somewhat ambiguous in nature as it relates to the designated community college district representatives. The specific limitation will be the accuracy of information collected by the study respondents. As such, the limited utilization of competency cluster validation such as the MIFV has not provided an adequate body of research for researchers to pursue in the future.

Assessing the collected data and clarifying the ROI aspect pertaining to the MIFV for the participant responses will serve as a limitation. The level of understanding the community college district participants will need to collect data for this study may be vague as well as under represented. The management of this limitation will focus on investigating the gap, if any, of ROI understanding currently possessed by the study participants. This will be important when ascertaining what level is needed to collect the appropriate data to prove the hypothesis for this study. When the various gaps are

identified, it will be imperative to close gaps to bolster the data collection process and thus the introduction of the MIFV.

The final limitation relates to the quantification of the numerous variables that effect the information collected with regard to the MIFV. This goes back, once again, to the lack of data to provide adequately a body of research related to a competency cluster validation model such as the MIFV.

Definition of Terms

Accountability: Responsibility to produce a promised result within a specified time (Cummins and Worley, 2000).

Attribute: Any property, quality, or characteristic that can be ascribed to a person or thing.

Change: Refers to the adoption of a new idea or motivation by an individual or company (Noe, 1998).

Competency: A specified set of talents an employee possesses or needs to possess to meet the objective(s) of a job and/or project (Boyatzis, 1982).

Competency Model: A model identifying the competencies necessary for each job as well as the knowledge, skills and personal characteristics underlying each competency (Dubois, 1993).

Core Competency: It is a competency that is a principal or critically essential competency for successful job performance for a given job at a given level within an organization (Dubois, 1993).

Cost-Benefit-Analysis (CBA): A comparative analysis of the cost of an item and/or activity versus the benefit derived from said item and/or activity (Phillips, 1996).

Development: Formal education, job experiences, relationships, and assessments of personality and abilities that help employees prepare for the future (Noe, 1998).

Evaluation Design: Refers to the who, what, when, where and how information is needed for determining the effectiveness of the training programs will be collected (Noe, 1998).

Formative Evaluation: Refers to evaluation conducted to improve the training process (Noe, 1998).

Goal: What a person and/or company hopes to achieve in the short, medium or long term time period (Belasco and Stead, 1999).

Human Resources: Those activities related to the management and development of the human factor within an organization (Phillips, 1996).

Job: A specific scope of duties and tasks requiring the completion of tasks (Noe, 1998).

Knowledge: The retention of previously learned material, skills, etc. (Linn and Gronlund, 1995).

Job Experiences: Refers to relationships, problems, demands, tasks, or other features that employees face in their jobs (Noe, 1998).

Learning Style: A style in which an individual best obtains and retains “knowledge.” Further, learning styles generally fall within the audio, kinetic and visual aspects in the pursuit of knowledge retention.

Model: A simplification of some phenomenon for purposes of study and understanding (Cummins and Worley, 2000).

Motivation: To compel or insight to action (Webster's Revised Unabridged Dictionary).

Objective: The purpose and expected outcome of training activities (Noe, 1998).

Performance Management System: A system implemented by an organization to manage the human factor within an organization. Note: Performance management systems vary widely in theory, scope and method.

Skill: Competency in performing a task or scope of tasks within a competency cluster validation (Noe, 1998).

System: A set of interdependent parts or processes that together make up a whole or system (Noe, 1998).

Training Effectiveness: Refers to the benefits that the company and the trainees receive from training (Noe, 1998).

Training Evaluation: Process of collecting the outcomes needed to achieve the stated objectives within a competency clustering process if training is to be validated as effective (Noe, 1998).

CHAPTER II

REVIEW OF LITERATURE

Introduction

Literature related to the MIFV is very limited in scope and sequence. The lack of literature is due predominantly to the infancy of competency cluster models. This chapter will provide a literary background with regard to the MIFV competency cluster validation model.

The Smith-Hughes Act of 1917 began the process of providing grant money to entities targeting specific populations for workforce development and educational efforts (Merriam and Cunningham, 1989). The progress of this grant process began the evolution of formal efforts related to workforce development. Further, this allowed DeWitt Clinton to create one of the first vocational trade schools that targeted ex-convicts in their attempt to reenter the United States workforce (Merriam and Cunningham, 1989). While these early efforts as well as ongoing grant based efforts are admirable, they have yet to address the challenges with regard to the various workforce competency-clustering models within today's general workplace (DeSimone and Harris, 1998).

In keeping with the above-mentioned premise, the ability for companies to focus their employees towards the mastery of competency clustering will be a formidable challenge in the workplace of tomorrow. However, prior to developing a competency

cluster validation model, it is important to review the various forms of literary works related to competency cluster models.

History of Training in the Workplace

Compulsory primary school, for the children of the United States, begins with the process of teaching language and math skills. The compulsory secondary schools within the United States build upon these skills (Macionis, 2001). However, the rapidly changing industries within the business communities make the current slow moving schools of today outdated as it pertains to the challenges facing the workforce of today and tomorrow (Judy and D'Amico, 1997). Because schools are slow to change and are so focused on mandated and unyielding bureaucratic tests, workforce development efforts have squarely fallen on the shoulders of the various community college districts within the United States (Boyett and Conn, 1991).

This burden has fallen on community colleges based on expertise, process, time and money as well as the inability of primary and secondary schools to meet the challenge of the current workforce (Macionis, 2001). Funding for compulsory schooling throughout the United States is disjointed at best, ranging from \$8,010 in Alaska per student per year to \$2,350 in Arkansas per student per year (Macionis, 2001). Even with consumer price index (CPI) adjustments, the funding disparity is wide and ominous with regard to the preparation of students to be competitive workers within a global economy through the compulsory school system of the United States (Potter and Youngman, 1996).

Bureaucratic involvement in the formal compulsory schooling process has put this system at a severe disadvantage when it comes to preparing the United States workforce for the challenges that will face them on the job of today and into tomorrow (Problems with Texas Schools, 2002). There are two compelling factors as to why bureaucracies have been a major hindrance as it pertains to the United States compulsory school systems. First, bureaucratic uniformity ignores the many variables throughout the local communities within the United States (Macionis, 2001). As such, the ability to match competency cluster models with the local student population and business community is essentially nonexistent (Boyatzis et al., 1995).

Educational bureaucracies generally define success by numeric ratings of ambiguous performance standards by individual schools and more specifically, school districts (Problems with Texas Schools, 2002). In the case of Texas, this concept is most noticeable within the Texas Assessment of Knowledge and Skills (TAKS) (Problems with Texas Schools, 2002). Further, schools are forced to teach and re-teach to the mandated tests imposed on them by bureaucrats which, more times than not, have students regurgitating test information instead of mastering competency clusters that will provide them a foundation for future learning challenges (Macionis, 2001).

By the mid-1980's more than 25 million adults returned to school for three compelling occupational purposes (Bristow, 1996). First, adults returned to school to gain basic workforce literacy so as to survive within the evolving workplace. To better compete for a career within the workforce, adults returned to school. Third, adults returned to school to gain career advancement skills and training (Bristow, 1996). This

number has dramatically increased over the last two decades due mainly to technology advances and ease of access to educational opportunities (Bristow, 1996).

To better understand what achievements need to occur when measuring the level of competency cluster mastery to compete within the workforce of today, as well as tomorrow, a brief analysis of learning endeavors should be illustrated. A series of practical and academic disciplines exist within our society to show rational principles within each realm of learning endeavors. These endeavors are supposed to translate into an orderly and functional society for its citizens. Science and engineering govern a citizenry's rational dealings with their physical world. The activities of buying and selling govern a society's process with regard to economics. Political philosophy and administrative science govern the realm of policy decisions and formal organization of a society. Lastly, society and business deliberately band together to follow common rules and reap the benefits of social cooperation. This rule of process allows society and business to make sense of their world (Collins, 2001) and provide the general society's vision of how its workforce should be developed and thus what competency clusters need to be deployed both in scope and sequence.

With the new millennium upon the workforce and business community, much discussion within the workforce development field has occurred. These discussions relate to the business world of tomorrow and how the business community will develop its workforce. As this phenomenon unfolds, two basic questions continue to dominate the workforce development horizon. "What will the new organization look like?" (Boyett and Conn, 1991). "When we know what the new organization looks like, how do we get there and thrive in tomorrow's business world?" (Zemke et al., 2000). These

two questions have been a source of many debates and have sent many organizations in a futile search of answers.

The answers that come back generally focus on workforce development or the lack thereof and more specifically on how new workers will master the various complex process competency clusters facing them in the evolving work place. With this in mind, many organizations are pondering just how they will develop the rapidly changing workforce of the 21st Century (Dent, 1998). Before this literature review can be completed, the various factors that will influence the workforce development of tomorrow must be explored. As such, it is important to review the development trends and actions that have effected change in the United States workplace over the last several decades (Smith, 1993).

Prior to the 1960's, the workforce was very homogenous with very little external pressure and/or internal competition for the white male dominated workforce (Ulrich et al., 1997). Furthermore, outside of certain foods, alcohol and luxury items, foreign goods were considered to be "junk" by the United States society (Dent 1998).

Unions were at the apex of their power and the white Anglo-Saxon male was virtually guaranteed a cradle-to-crypt career (Dyer, 1986). Based on these factors, employers did not feel that training, especially workforce development, was a critical need to stay competitive (Drucker, 1995). What occurred to forever change the workplace as it was known then and begin the process of workforce development?

Actually, it was not a single occurrence, but a series of significant events that impacted the United States workplace, as it has never seen before (Abbot, 1988). Many of the events impacting the workplace reflected a changing society and increasing

governmental intervention (Byars and Rue, 1997). These events began to diversify the United States, which in turn brought individuals and different groups into one place as a composite community of workers (Zemke et al., 2000).

Workforce development activities during this decade were generally composed of one-way, predetermined lectures focused on sales and technical proficiency. Very little effort went into exploring learning strategies or learner styles as well as their ability to master critical competency cluster models (Noe, 1998). To this point, the general business feeling at this time was, outside of mandatory training, formal learning should occur within the United States compulsory school system. Further, business and community felt that their tax dollars should be considered their investment and the ROI should be "job ready" workers (Noe, 1998). However, even with this mentality, the United States still spent more on training than any other country in the world at the time, while receiving a fraction of the benefit (Freeman, 1994).

The 1970's and 1980's were not as turbulent as the 1960's; however, these two decades still saw a number of significant events that changed the workforce (Hershey and Blanchard, 1993). The American economy was faced with increasing global economic competition, especially those related to energy, electronics, hard industries, and automobiles (Hershey and Blanchard, 1993). The competition was further fueled by the deregulation of many industries, which led to more companies entering the competitive business scene (Noe, 1998). Labor unions began to see their leaders prosecuted in alarming numbers for organized crime and misuse of union assets, which contributed to a significant amount of power and membership diminishment (Potter and Youngman, 1996).

The nature of the American economy began to focus on service sector jobs and move away from hard industry jobs. The American business sector would soon discover in the 1990's that it went too far away from preparing workers for hard industry jobs (Noe, 1998). The most significant event of these decades was the erosion of the paternal bond between the worker and the organization (Ulrich et al., 1997).

Activities such as downsizing, rightsizing, de-jobbing and moving jobs overseas led to a free agent worker environment and short-term careers for most workers with organization (Dent, 1998). Immigration into America began a shift from the traditional patterns of Europe and Latin America to the Pacific Rim as well as Middle Eastern countries (Cummins and Worley, 2000). Furthermore, the white male was no longer the largest segment of the United States population entering the workforce, as was the case in the past.

Organizations of the 21st century must be compelled to explore ways to maximize learning opportunities for their employees as they relate to competency cluster validation (Boyatzis et al., 1995). Any learning strategies implemented must stand the scrutiny of an ROI (Phillips, 1996). Further, workforce development activities must show a positive impact on the participating organizations through a cost benefit analysis (CBA) (Phillips, 1996). Once organizations discover strategies that they feel will work, said organizations must design a delivery system that maximizes the impact of the training for both the organization and the employee (Phillips, 1996).

Those organizations that ignore the make up and the developmental needs of the new workforce will run the risk of creating an organization that will be outdated or out of place (Bechard and Pritchard, 1992). If this occurs, an organization's life cycle will

be short or nonexistent (Belasco and Stead, 1999). Lastly, understanding the new workforce will better place a company in a position for success as well as a maximization of resources, profits and obtaining a better return on production and human capital (Goldsmith et al., 2000).

As a country evolves, society and business deliberately band together so as to create and follow a set of rules to reap the benefits of social cooperation (Collins, 2001). An active partnership of social cooperation is evident within the United States (Bechard and Pritchard, 1992). Has this partnership adequately readied this workforce to compete in a global business community as well as the work world of the future? (Schein, 1999). Before one can address these two very important questions, a historical review of the traditional primary and secondary compulsory education system United States must be first delineated.

The educational system in America has been distinctly shaped around cultural patterns of its people throughout its history (Merriam and Cunningham, 1989). This system has been true to the overriding culture of the United States as it began by educating the white males of privilege within the population and has diversified with the evolution and increasing demands of its culture (Macionis, 2001). The initial American compulsory educational system began with the American child's primary education (Merriam and Cunningham, 1989).

As described earlier, this compulsory primary education focuses heavily upon the process of teaching language and math skills. The next step in a child's secondary education builds on the foundation laid in the primary education evolution (Merriam and Cunningham, 1989). As such, little if any effort is put into the child's movement

towards assessing skills needed within the business world especially as it pertains to competency clustering (Macionis, 2001).

This malaise is exacerbated by the economic revolution and global economic turbulence that is occurring at a faster pace than ever before within the history of the United States. These events have left compulsory education in America lagging far behind other industrialized countries (Dent, 1998). The United States and other industrialized nations feel they are not able to take full advantage of the technological advances due to the inability of the workforce to master the complex competency cluster processes necessary to meet burgeoning technology challenges (Kennedy, 1993).

Major Competency Cluster Validation Theories and Models

Models and theories pertaining to the field of competency cluster models and theories are as numerous and diverse as the concepts themselves (Fielder and Mahar, 1979). This study will focus upon theory of learning efforts specifically related to those learning models and theories that will enhance the MIFV implementation efforts. Once again, as one views current competency cluster modeling efforts, the focus is heavily upon processes and systems as they pertain to rudimentary skills (Gates and Hemingway, 1999).

Gagne

Gagne (1962) argues that procedural material should be organized into a series of sequential steps that should be analyzed and divided into subunits. Within these series of sequential steps, the trainees must master each subunit before the entire procedure is

undertaken and thus validated as per the MIFV process (DeSimone and Harris, 1998). Along these lines, Gagne felt that tasks and thus knowledge could be learned more effectively if what are learned are divided subtasks that are arranged and taught in an appropriate sequence (Gagne, 1962). Further, he proposed that human performance could be divided into five distinguishable categories, each of which requires a different set of conditions for maximizing learning retention as well as knowledge transfer (Gagne, 1962). The five skills categories are defined by Gagne as intellectual, verbal information, cognitive strategies, motor skills and attitudes (Gagne, 1962). While these skills categories appear to be adequate, they are very different as well as falling short of the process proposed within the MIFV process.

Much of Gagne's impact pertains to his work related to knowledge, skills and abilities (KSA). He was able to obtain widespread acceptance of this model through his work with the United States Military. From this body of research, Gagne's KSA competency cluster model has become the standard for application within the business community (Gagne, 1985). However, the KSA model, unlike the MIFV model, does not validate a competency cluster model and this will allow the MIFV to impact the competency cluster body of research through its validation process, as no other model before. The KSA competency cluster model is related to a performance environmental system generally follows the sequential process listed below:

Job environment—The internal environment in which a workforce conducts its ongoing functions based on stated KSA (Gagne, 1985).

Laws and policies—The manner in which KSA's are created to meet the requirements placed upon it by governance entities as well as the policies set forth by the company (Gagne, 1985).

Organizational culture—The workforce created by the company that nurture and/or challenge the KSA processes (Gagne, 1985).

Gagne's impact on the field of learning has provided a significant foundation as well as directional impact on the development of the MIFV model. While these studies support Gagne's knowledge and skills aspects to a large extent, it comes into conflict with the order and depth of the KSA competency cluster process. Through the MIFV model, it will be illustrated that the skills and knowledge aspects will be reversed in order. Further, there will be additional components contained within the MIFV including the critical components of motivation and attributes. This information is based on the fact that it is possible to place five rocket scientists in a room with each having similar knowledge and skills but impossible to make them work together based on the motivators and attributes. This lends support to the hypothesis that motivators and attributes should be examined and measured prior to moving into the skills and knowledge sections.

Gestalt

Gestalt has developed several theories related to competency cluster validation modeling, which are similar to some of the strategies related to this study's proposed MIFV model. The concept of Gestalt essentially means the whole of a competency cluster and is focused on perceptual psychology (Shaffer and Galinsky, 1989).

Gestaltists have had very little impact on empirical research and have made few significant contributions to competency cluster process theory. This pertains to their focus with regard to replication of past research (Chaplin, 1993). However, the importance of this theory as it relates to the MIFV is its holistic approach to this field of study. The major feature of the MIFV as it relates to the holistic approach set forth by Gestalt lies within its continuum of linked MIFV moving in an upward funneling process with specific objectives and general organizational success requirements.

A prominent early Gestaltist was Kohler's who did groundbreaking competency cluster processing work with apes. He conducted tests in which apes were able to solve complex problems through the clustering of simple competencies. Kohler's achieved his results by proposing and gaining a measure of success with the following types of problems with apes:

1. Detour problems
2. Problems involving the use of ready-made implements
3. Problems in which the animal must construct implements
4. Building problems (Chaplin, 1993)

Kohler's ape studies provided insight to competency clusters, which provided support to the Gestalt psychologist's molar interpretation of behavior as opposed to associationistic and behavior elementalism (DeSimone and Harris, 1998). Kohler's results were subsequently used to support, as expressed by many of his contemporaries, the contention that learning of the insightful variety is essentially a perceptual reorganization or restructuring of the psychological field (DeSimone and Harris, 1998). This work has been debated, analyzed and revised by researchers for a number of years

(Anastasi, 1982). However, practitioners, for the most part, have ignored the behavior exhibited by the apes within the study (Anastasi, 1982).

Gestaltists are more attracted by the field of perception than learning rudimentary tasks. Gestaltists focus upon awareness as well as integration of body and mind. (Cohen et al., 1996). A key concept of the Gestalt Model is that the individual should accept personal responsibility so as to gain maturity within their career development journey. Further, there should be awareness of what they are experiencing and doing with regard to their learning process within their career (DeSimone and Harris, 1998). There is not a lot of interest in a person's general past as it relates to significant themes in the present functioning. Lastly, active participation in one's learning is a key component if change and growth are to occur (Anderson, 1993).

Lewin

Kurt Lewin conducted a considerable amount of groundbreaking work, especially with the United States Military, pertaining to competency cluster modeling (Wolfe et al., 1991). Further, Lewin devoted a great deal of effort and resources to devising a theoretical schema for representing environmental variables as they impinge upon individuals and their efforts to achieve specific competency cluster mastery (Chaplin, 1993).

It appears that the most significant piece of work conducted by Lewin with regard to competency clustering was related his Force Field Analysis model. As per Lewin's competency clustering process, mastery is achieved through the use of needs assessment and task analysis as well as identifying inhibitors and enablers. Within this

model, a process was put forth that allows one to identify, modify and master a level of competency cluster.

Bandura

The last significant aspect of competency cluster body of research pertains to Albert Bandura. His work placed him in the role of pioneer of the Social Learning Theory. Within the Social Learning Theory, Bandura espouses that there are three major aspects that relate to competency cluster modeling (Bandura and Walters, 1959). The three major aspects form a triad that espouses that human behavior is a continuous cycle of cognitive, behavioral and environmental influences (Bandura, 1975). This continuous and interactive cycle provides a solid foundation from which to build a competency cluster validation model bolstering the MIFV hypothesis.

Bandura was also one of the first to devise the concept of “chunk” learning process, which is in keeping with what the MIFV is attempting to refine and advance. Chunk learning pertains to a designated group and competency clusters are combined into group or chunk competency clusters (Bandura, 1962). Through his work in “chunking” learning, he delineated four major steps with regard to his chunking process.

First, attention seems to be the underlying factor of step one within Bandura’s chunking process. Modeling events and observer characteristics are the key aspects in the attention phase. The second step is focused on retention of material learned through encoding, cognitive organization as well as symbolic and motor rehearsal. Step three is motor reproduction, which is focused upon the individual’s ability to replicate what they have learned. Step four is focused on motivation, which coincides with the first level of

the MIFV. Further, this step coincides with step one in the MIFV as will further be delineated in this study. The motivation step focuses on external and internal reinforcement of said “chunk” learning process (Bandura and Ribes-Inesta, 1976).

History of Competency Clustering

Competency cluster modeling will be a critically important developmental system for the 21st century’s workforce (Cortada and Woods, 1998). Further, competency cluster modeling is quickly becoming the workforce development standard as well as measurement and performance management standard for the 21st Century (Boyett and Conn, 1991). Since the entire process of competency cluster modeling is still relatively in its infancy, this literature review will provide a solid foundation. Further, this empirical research study will provide the impetus to create an information foundation as it pertains to the development of the MIFV. However, literature related to the MIFV is lacking at this stage of the competency cluster model evolution, which provides a challenge in this study.

In order to begin the process of developing a competency cluster validation model, one must first define a competency. A competency is defined as “the ability to accomplish tasks, results and outputs” (McLagan, 1997, p. 40). The term competency is refined further into a job competency, which is described as underlying critical characteristics with regard to a person’s workforce activity, which result in effective and/or superior performance (Boyatzis et al., 1995).

Once one understands the basic definitions of the competency, progression can be made into understanding the types of competencies. To this point, there are four types of competencies identified within this empirical research study.

The first type of competency is identified as task competencies, which are manageable activities and procedures (McLagan, 1997). A second type of competency is identified as a threshold competency, which is an indicator of progress through a competency model process (Boyatzis, 1982). A third type of competency is identified as results competency, which are the results of the effort undertaken in the competency cluster model (McLagan, 1997). The last form of competency is an output competency, which is the product or service created by the competency cluster model (McLagan, 1997). Through these, a solid information avenue is provided for the development of the MIFV.

The next step in the creation of a competency cluster model is the identification of the key stakeholders' competencies as they relate to the competency cluster process being undertaken at the time (Lankard, 1987). This should be done through a detailed systems approach, which starts with needs assessment leading into a task analysis, which takes the full scope of what is attempting to be accomplished into consideration (Stenning, 1999). This is the most viable option toward identification of what needs to occur within a competency cluster process. Once the competencies have been identified as part of a competency cluster validation to be mastered, a selection process should be undertaken. This process should include interviews, critical incident reporting, goal setting and the creation of work planning processes (Carlisle, 1985).

Of the many competencies that will be needed for workers in the new millennium, the most important will be the competency cluster mastery of knowledge management and resource management. Knowledge management encompasses the ability to sift through, sort and quickly recall needed information for communicating it to various receptacle sources (Dent, 1998). This knowledge management onus will challenge employees to manage vast amounts of varied and “expiring” sources of information to be used in various briefing, competitive as well as collaborative environments both internally and externally to a company. Further, the employee within the new workplace must also exhibit the ability to process and distribute the appropriate information to key stakeholders as well as career decision makers in an expedient and evolving environment. A second competency that must be exhibited by employees will be their ability to utilize the vast array of resources at their disposal (Judy and D’Amico, 1997).

Resources must be managed in an accountable, virtual and just-in-time environment that will ebb and flow within the company’s changes. Further, these resources must be presented and managed in a cost-effective manner or CBA to various customer bases, both internal and external. These factors will challenge workforce development activities to focus on individual learning processes to be implemented that provide employees with the tools necessary to meet these new work complexities (Judy and D’Amico, 1997). Once the individual learning processes are ascertained, a designated competency cluster can be addressed, which will place the individual in a position to contribute within an organizational team setting.

Robert Gagne pioneered a substantial amount of the theoretical foundation for the direction in which the empirical research study is focused. This assertion is based on his work focusing on process as well as sequential and cumulative learning. Once the principles of learning are understood, Gagne feels training can be improved with a three step sequential process (Dent, 1998). The first step is a thorough task analysis in which a targeted task can be analyzed into a set of distinct component tasks. The second step in the process relates to component task achievement in which each component task must be fully achieved before the task may be performed correctly or mastered. In the last step of the process, the learning situation should be arranged so that each of the component task is learned in the appropriate order before the next task is attempted, leading to competency cluster validation mastery (DeSimone and Harris, 1998).

Motivation of the Workforce

Exploring the aspects of workforce motivation is a key component in competency clusters as well as the MIFV. The employment relationship and thus worker motivation was forever changed with the various restructuring of workforces undertaken by the United States businesses community beginning in the 1970's which continue through today (Hammel and Prahalad, 1996). These actions have taken a toll on motivation within the workplace (Dent, 1998). Based on this statement, as the workplace evolves, how can an organization create a positive and productive relationship with its workers?

The relationship mentioned above, must be accomplished prior to implementing a process to motivate a workplace (Dent, 1998). Before this question can be addressed,

an organization must attempt to discover what makes its workers tick and thus motivates them (Hammel and Prahalad, 1996).

Employees in the workplace of today will be motivated if they are given an opportunity to learn and be accountable for the activities for which they are key stakeholders (Hammel and Prahalad, 1996). Organizations must develop its workers to be “deciders” as well as a “doers.” This will allow a company to nurture valuable employees who will make or break a company in the workplace of today as well as the future, which will determine the life or death of a company (Smith, 1993).

There are several key factors that will delineate the worker of the 21st Century from the workers of past and present. First, the worker’s knowledge of technology will be at a much higher level than what is experienced by the workers of today (Gates and Hemingway, 1999). As such, competency cluster models must meet the evolving requirements facing the new knowledge worker. Technological advances will allow for much more flexibility and diversity related to learning opportunities. It will also allow for an expansion of quality-of-life opportunities, which has become a critical aspect in the work schedule of today’s worker.

Employees expect to be an active partner in the evolution of their organization (Hammel and Prahalad, 1996). Further, employees expect to be given direction complete with parameters from which to frame a suitable decision making process (Boyett and Conn, 1991). This will also pose a challenge to companies as they create competency cluster models to develop their workers. Within these parameters, a process must have the latitude and empowerment to gain the status of partner, associate, team

member or other favored buzzword employers use to describe their workers (Boyett and Conn, 1991).

The worker of today is more than willing to be accountable with regard to their functions. However, this challenge will only be accepted so long as they are given direction as well as timely and appropriate feedback pertaining to the efforts they undertake (Phillips, 1996).

Prior to taking on the mantra of accountability with regard to their functions, they must be motivated to the appropriate level so as to have the drive to participate in the adult educational system within America (Phillips, 1996). Adult education in the United States is described as an instrument for transmitting new values and for creating a sense of motivation to compel some form of action. Further, adult education is a natural extension of the formal learning process beyond the youth compulsory education. This is a very critical step for the worker to function in today's world of work (Merriam and Cunningham, 1989).

Among the major differences between the United States adult educational efforts and other industrialized nations is the accessibility of said adult education processes by the general population. Generally, in Great Britain as well as Japan, primarily the upper class of society attends the elite universities so as to pursue a prestigious career. This is contrary to the competitive college and university system within the United States where the citizen population has access to its higher education system (Macionis, 2001). However, within other countries there are still opportunities for other social classes to attend middle and lower tier schools as well as expansive vocational opportunities (Merriam and Cunningham, 1989). The open access of post secondary education in the

United States places it in a uniquely competitive position as it pertains to the education of adults.

The purpose of adult education derives from an adult's need to remain current in the wake of rapid change and increasing knowledge, which in itself is a significant motivator (Davidow and Malon, 1992). This motivation has two dimensions, one social and the other being material in nature (Merriam and Cunningham, 1989). As the adult education process and community evolves, one must ask to what extent does adult education equalize society. This is especially important as it pertains to critical economic factors that affected the United States (Davidow and Malon, 1992).

One of the earliest proponents of learning processes and thus de facto adult education was English philosopher, John Locke. Locke advocated a process for reducing complex ideas into simple concepts so as to allow the ordinary citizen to obtain necessary knowledge to function within the broader society (Merriam and Cunningham, 1989). This is very significant in that he began to explore a primitive form of competency cluster modeling.

Early efforts in adult learning and education can be traced back to apprentice training in the 18th century. This early form of workforce development occurred when shopkeepers were forced to educate and train their own employees due to the lack of adequate educational processes in place at the time (Merriam and Cunningham, 1989). One of the earliest attempts to formalize the learning process into a more formal education program can be traced back to Hoe and Company. This United States company created a factory school in 1872, which focused on training their employees to work within their company systems. Further, this early effort by Hoe and Company was

void of union and bureaucratic interference, which placed this company in a much better position to be successful than their competitors during this era (DeSimone and Harris, 1998). Like the apprenticeship efforts, the factory school idea included significant collaboration between the community and business.

Outside of the Hoe and Company workforce development efforts, early educational efforts were focused on agricultural education as well as farmer institutes (DeSimone and Harris, 1998). However, these efforts did not extend to the workforce in general. The nearly exclusive agricultural education began to change direction once urbanization materialized within the changing landscape of the United States. As urbanization began to gain momentum, industrial workforce education began to appear in the form of apprentice and master training much like its European counterpart (Merriam and Cunningham, 1989).

Formal adult education began as early as 1911 when the main educational efforts focused on promoting and disseminating knowledge amongst the people of the United States (Merriam and Cunningham, 1989). However, as was the case in Europe and other industrialized countries, early workforce development as well as technical educational efforts were elitist in nature and were limited to a very select few within the population. Further, the education system was shaped by distinctive cultural patterns as they have evolved within the United States (Macionis, 2001).

It has often been said, “Without purpose...you have no meaning.” This analogy fits very well within the competency cluster based workplace and thus adult education in general. Basic purposes of adult education generally included the ability to facilitate change in a dynamic society (Boyett and Conn, 1991). A second major purpose of adult

education serves as a foundation and support mechanism in maintaining a good social order and enhancing personal growth (Merriam and Cunningham, 1989).

There are various factors that will challenge any learning endeavor within the United States and must be addressed as well as overcome in order for success to be achieved. Adult education as well as workforce development is no different. Merriam and Cunningham (1989) list seven major factors that influence and motivate those involved in the adult education process. They are as follows:

1. Social citizenry
2. The many hats the adult learner wears
3. Economics
4. Religion
5. Demographics
6. Politics
7. Environment

The first area that must be addressed pertains to the manner in which workers are motivated or compelled to action. Employees in the new workplace will be motivated if they are given an opportunity to learn and be accountable as well as rewarded for the activities for which they are key stakeholders. Organizations must develop its workers to be “deciders” as well as a “doers” as this will allow a company to nurture valuable knowledge workers (Boyett and Conn, 1991).

There are several key factors that will delineate the worker of the 21st Century from the workers of the last century. First, the worker’s knowledge of technology will be at a much higher level than what is experienced today. As such, competency models

must meet the requirements facing the new knowledge worker (Cyrus and Conway, 1997). Technological advances will allow for much more flexibility and diversity related to learning opportunities. It will also allow for an expansion of quality-of-life opportunities, if it managed appropriately (Crosby, 1984).

Employees expect to be an active participant in the evolution of their organization. Employees also expect to be given direction complete with parameters from which to frame various appropriate decision making processes they will face (Boyett and Conn, 1991). This will also pose a challenge to companies as they create competency cluster models for their employees (Boyatzis, 1982).

Learning Styles

Learning styles are the foundation of career growth, organizational effectiveness, and performance measurement/management (Abbott, 1988). Matching competency cluster strategies with learning styles will be critical for a company's success in the evolving workforce as they attempt to master and manage the various competencies facing them on an ongoing basis (Dubois, 1993). Furthermore, organizations who can successfully meet this challenge will be able to capture business opportunities in a complex global market while those organizations that cannot meet the challenge, will flounder and go out of business (Potter and Youngman, 1996).

However, before an ideal model can be built, it is important to understand the various learning styles within the United States (Chaplin, 1993). This diverse workplace of learning is among the most active of the fields of research educational psychology

concerning competency cluster theory development (Chaplin, 1993). The understanding of learning styles will allow for effective competency cluster validation models.

There are various definitions attached to the term learning styles that vary in both scope and depth. There appear to be two definitions that were put forth by Jenkins and Keefe (Everett, 1995) that are pertinent with regard to the competency clustering process. Jenkins (1981) defines learning styles as the way people compile, process and information as well as solves problems (Everett, 1995). While Keefe (1979) defines learning styles as the composite of characteristic cognitive, affective, and physiological factors that serve as relatively stable indicators of how a learner perceives, interacts with, and responds to pertinent learning environment (Everett, 1995).

The concept of learning styles has been around the world of business as well as the concept of adult education for more than 100 years (Gagne, 1985). However, it was not until early in the last century that the concept of learning styles and their affect on workers and business began to emerge as a significant body of research (Keefe, 1979). The early researchers focused their efforts and resources predominantly on verbal and/or visual learning styles (Keefe, 1979).

In the 1930's, researchers began to include the study of a cognitive learning style as part of the overall concept of learning styles (Gagne, 1985). However, during this era the verbal and visual styles where still the major focus in the research of learning styles (Keefe, 1979). The focus of learning style research began to change rapidly after WWII when the study of the cognitive style became very popular relating an individual's ability to process information and their style of thinking (Knowles, 1984).

There are multitudes of factors that influence learning styles. Among the most important are genetic coding, environmental factors and maturity. There has been research that suggests an individual's learning style is influenced by their genetic coding as well as the individual's culture and environment. While there is research to support the genetic coding influence and its importance within this field, the literature noted will focus on the learner's maturing process as well as the environment in which they operate (Gregorc, 1979).

There has been a significant amount of research evolving what reinforces the learner's environmental outlook as well as personality, thus adding a new dimension and influence to the study of learning styles. This is evident by the multitude of learning inventories that focus upon personalities and their impact within the workplace. As the learner matures, there is a different progression of reliance on sensory modalities for learning (Allen, 1995). Furthermore, research suggests that an adult usually retains a preference for one mode of learning. However, the preferred mode is not always congruent with actual measured abilities within the workplace (James and Galbraith, 1985).

Research clearly shows that environment and maturity has a profound influence on learning styles with regard to adult education (Freeman and Medoff, 1984). Research undertaken by Anderson (1993) and DaGiau (1995) among others demonstrates the influence that increased understanding of one's self-concept and its effect on roles and relationships have upon career maturity. The learner's experiences are framed by the activities a learner undertakes throughout their journey through life (Freeman, 1984). The experiences shape an individual's outlook and thus their mental orientation, but the

same experiences may not influence their talents. As such, these two variables add a unique variation to competency modeling (Dubois, 1993).

Discovering one's learning style is a very difficult process at best and at worst can leave a learner confused and frustrated. Many excellent learning inventories have been created in the last few decades to assist an individual in discovering their learning style(s) (Anderson, 1993). The major impetus of this literature review of learning style(s) pertaining to the MIFV are auditory, visual and kinesthetic, which is quantified nicely in Hill's Cognitive Map (Hill, 1981). A second significant inventory that focuses on learning styles related to auditory, visual and kinesthetic styles is the Productivity Environmental Preference Survey (Dunn et al., 1982). Kolb Learning Style Inventory and Myers Briggs are two widely used personality inventory tools that also focus on auditory, visual and kinesthetic learning styles. These learning styles form part of the foundation supporting the creation of competency cluster validation models.

Summary of Research

Organizations of the 21st century must explore ways to maximize learning and workforce development opportunities for their employees as they relate to competency cluster processes (Cyrus and Conway, 1997). Any learning strategies that will be implemented must stand the scrutiny of a company's ROI. This ROI must show a positive impact on the targeted organizations (Phillips, 1996). Once companies discover various strategies which they feel will work within the current business community, they must design a delivery system that maximizes the impact of the competency clustering for both the organization as well as the effected employees.

Matching competency cluster strategies with learning styles will be critical for a company's success in tomorrow's workforce as they attempt to master and manage the various competencies facing them on an ongoing basis (Cortada and Woods, 1998). Organizations, which can successfully meet this challenge, will quickly be able to capture business opportunities in a fast moving and complex global economy. Those organizations, which cannot meet the challenge, will flounder until acquired or they go out of business (Rummler and Brache, 1995).

There are two other factors that will add to the above-mentioned challenges facing a company. First, society will place more pressure on companies to find ways to better develop the competency cluster models as it pertains to their workforces. A by-product of this pressure will be more governmental intervention as well as a heavily active legal docket focused on organizations failing to develop competency cluster models for their workforce (Byars and Rue, 1997). Second, Generations X & Y are very unique generations that will require employers to develop new workforce developmental strategies to attract and retain said valuable employees (Boyett and Conn, 1991).

Before one can explore what a company will look like within the new workplace, it is important to explore what the workforce will look like in the coming decades. The new organization must understand the changing dynamics of the new workforce as it positions for survival and/or future success as well as maximized utilization of resources and a better return on production and human capital (Andersen, 1997).

So what will the workforce of the coming decades look like? First, it is projected by the United States Bureau of Labor Statistics that white Anglo males will make up only 30% of the labor force by the year 2005. This is a very significant change from the

labor force of the 1990's in which the white Anglo male continued to comprise the majority of workers entering the workforce within the United States. Second, more than 50% of new workers entering the work force in the coming decades will be women. Third, a vast majority of the new labor pool will be made up of immigrants and minorities (Byars and Rue, 1997). Lastly, the U.S. workforce is maturing; this new trend is evident by the projection that the average age of the worker in the year 2005 will be 40.5 years old, which is 3 years older than it was in the late 1990's (Judy and D'Amico, 1997). These trends will have a significant impact on the emerging organizational structure as well as workforce development and processes in the new millennium.

Organizations that ignore the make up of the new workforce will run the risk of creating an organization that will be outdated or out of place (Judy and D'Amico, 1997). The employment relationship was forever changed with the various restructuring of workforces undertaken by American businesses beginning in the 1970's continuing through today (Robert, 1995). Based on this premise, how can an organization create a positive and productive relationship with its workers? Before this question can be addressed, a company must attempt to discover what compels its workers to action that is beneficial to both parties (Price Waterhouse, 1995).

The step-by-step process of identifying learning styles and competencies will allow one to focus on the development of a competency cluster model (DeSimone and Harris, 1998). Evaluation, quantification, implementation and flexibility will be critical components as it pertains to the MIFV. This model if properly developed, should serve as a strong workforce development and performance measurement tool. Further, the

MIFV will serve as a positive communication tool and a blueprint to success for both employees and employers (Boyatzis et al., 1995).

CHAPTER III

METHODOLOGY

The primary purpose of this study pertained to the introduction of a new competency cluster validation process, the MIFV, and its viability. Since this research encompassed groundbreaking work, both empirical and action research methodologies were used. This system of strategy has allowed more insight related to the process of the MIFV.

Selection of Methodology

Upon making the appropriate adjustments to the pilot study, questionnaires were distributed to three designated community college districts within the state of Texas. The study pursued a five-step process to delineate the manner in which this research project was to be conducted. The five-step process is as follows:

1. Step one involved the presentation of a questionnaire to designated community college districts. Upon the completion of this questionnaire, the requested responses were received from the community college district study respondents.
2. Step two focused on the analyzing as well as comparing and contrasting the participant responses. Specifically, analyzing the information pertaining to the viability of the MIFV within the dynamics of the evolving workforce.

3. Step three consisted of a trend analysis on identified areas within the questionnaire. The trend analysis provided valuable insight as it pertains to the MIFV.
4. Step four focused on the aspect related as to whether the MIFV had any potential value and viability within the workforce development field. The viability of the MIFV potential was dependent on the results of the survey within this empirical research study.

The last step in this process focused on the exploration of various strategies to infuse the MIFV into the trend analysis and thus the field of workforce development.

All sections are further described within the instrumentation. Further, a detailed description of the instrument, method as well as procedures used are contained within this chapter.

Instrument Development

As ascertained through this study, it appears that this study has not been conducted within this heterogeneous group in the past. The instrument design was of particular note pertaining to the study's hypothesis. Community college districts have played a vital role in developing the most advanced workforce in the world (Merriam and Cunningham, 1989). As such, asking them to admit to their shortcomings without allowing them the opportunity to rectify said shortcomings is an ideal way to receive a non-participatory return.

The instrument had to be designed in such a manner that the respondent could freely disclose the level, if any, of their implementation of competency cluster validation

processes. This is of particular significance with regard to the MIFV. Further, this instrument allows designated community colleges districts to forecast their related future efforts.

The questionnaire consisted of six questions that focused on the level and implementation of competency cluster validation processes. The demographics will only be detailed to the level needed to meet the hypothesis contained within this study. The demographic information request is further delineated within Appendix A.

The first section of the questionnaire provides the participants an opportunity to illustrate the level of needs assessment and task analysis they are utilizing. Within the need analysis portion of this section, this research focuses on the extent that the participants are ascertaining critical needs as it pertains to their clients' WFD efforts. The task analysis portion in this section explores the linkage between the needs assessment, task analysis and the simple to complex competency clusters.

The level of customization or lack thereof as well as the relationship of customization to the MIFV is major focus of the second section. Contained within the customization aspect of the questionnaire, the respondent had the opportunity to delineate their process of customization to meet the needs and objectives of the regional business community they service. The relationship of customization to MIFV allowed this research to compare and contrast customization as it pertains to the empirical nature of the MIFV.

Participation Selection

When selecting participants for this research study, the researcher must utilize the most effective population sample possible so as to meet research objectives. Further, any research study, especially these pertaining to human subjects, adherence to the appropriate code-of-conduct as set forth by Texas A&M University as well as the Belmont Report must be achieved. The selection process should also include the researcher outlining the entire research process to the study participants as well as their specific roles. In keeping with the development of the research process, the participants should be made aware of and have access to the Belmont Report so as to ensure they understand the guidelines related to their participation.

Tracking the learner's progress back to the workplace as it relates to the competency cluster validation process and more specifically the MIFV is the main focus of the third section of this study. This section is a critical aspect of the validation of the MIFV as well as the ability to replicate this study in the future. Further, the ability to track the learner's progress back to the workplace will aide the participating community college districts efforts related to developing the workforce within their business community.

The last section in the questionnaire focuses specifically on each level contained within the MIFV. The focus on each level within the MIFV will allow the study to compare and contrast specific aspects of the MIFV. Further, this section will allow both the researcher and respondents to strengthen efforts related to the MIFV.

Data Gathering Techniques

Collecting data was the second major component in the development of the MIFV empirical research study. Data collection study was accomplished through two major means. The first major means was data that has already been collected and published by an individual or group of individuals within the respondent community college districts. When using this means of data collection, the researcher followed the appropriate citation process.

The second major means of data collection involved questionnaires that were emailed directly to the designated community college representatives who served as the data collection points. The questionnaire utilized various forms of questions ranging from open ended to close ended to forced choice responses from the study participants. In using this form of data collection, the research study provided safeguards ensuring unnecessary data was not collected or too cumbersome on the study participants.

With the two collection techniques utilized, there were specific challenges that were to be overcome to ensure the appropriate safeguards were in place. The first major challenge posed was the blind collection of private data in which certain types of demographics were collected to use in comparative analysis. The individual data will not be released; however, some group trends may be.

As the process evolved, cautions about changes in the participants and the overall homogeneous aspect of this study posed a second major challenge. To this point, flexibility was implemented so as to guard against this and allow the hypothesis to be met. If significant changes occur, the study will acknowledge said changes and take the

appropriate action, up to abandoning the study, to ensure the integrity of this empirical research study.

The third major challenge related to the data collection centers on the collection of unpleasant data. The researcher must rely on an overall code of conduct to guide the direction of the study. This challenge should be diminished, as the data being collected is blind in nature.

Data Analysis

After the data is gathered, the hypothesis will be explored in an in-depth nature to ascertain the viability of the MIFV. The researcher will be careful to clarify data analysis with the respondents so as to avoid misinterpretation of the data. The reporting of the findings will define and communicate to stakeholders as well as following the process set forth by the researcher's dissertation committee and Texas A&M University.

Content Validation

To validate the instrumentation tool prior to its distribution, a pilot study questionnaire was administered to the Angelina Community College (A.C.C.) District. This community college district is located in Lufkin, Texas and services a large regional area within East Texas. A.C.C. completed a pilot study questionnaire put forth by the researcher. The responses and comments to the pilot study served as a valuable asset in adjusting some questions while eliminating others. Further, an invaluable amount of

learning was achieved through this process of developing an instrument that would elicit the desired information pertaining to the MIFV. Other areas of the initial draft that were revised involved the areas of clarification and formatting. Based on the results contained within the pilot study, the final version of this questionnaire was developed for distribution to the designated community college districts. A copy of the pilot questionnaire used in this study is Appendix B.

CHAPTER IV

RESULTS OF THE STUDY

Prior to getting into an in-depth analysis, it is imperative that the major purposes of this study be identified. Further, the critical intent pertaining to this chapter must be delineated so as to provide a pathway into the main components of this empirical study. The last critical components that will be addressed prior to the analysis of this empirical study's questionnaire pertain to the measurement process and demographics.

Delineating the limited use of an expanded demographic population within this study is important as it provides an unbiased foundation of the creation and evolution of the MIFV model. This crucial assessment is important in the rapid evolution of the MIFV. This is important as it relates to this designated study group as well as other potential research sources as will be further detailed in Chapter V.

There are four major purposes encompassed within this study. The first purpose of this empirical research study pertains to the identification and description of a newly proposed competency cluster validation model. The competency cluster validation model proposed in this study is identified as the MIFV, which is a sequential, upward funneling process moving from an environmental scan through a well-defined developmental process culminating in competency cluster validation.

The second purpose of this study ascribes to the premise that the MIFV is a competency cluster validation model that exceeds traditional the competency cluster model, KSA. The KSA process is currently utilized as the standard for competency

cluster process within the private, government as well as academia sectors. The skills and knowledge components will basically remain constant within the MIFV competency cluster validation model. The exception will be the order of components as well as upward funneling process.

The MIFV will theoretically pose its major impact within aspects pertaining to the blending of environmental fit as well as cultural artifact aspects related to the workforce within this competency cluster validation process. To this point, traditional competency cluster validations efforts have focused on a fairly regimented process of assessing KSA. To this point, KSA's can generally be "touched" and quickly measured over the short term. However, very little focus has been placed on the aspect of workforce dynamics within the regimented KSA process. As such, the long-term viability of a successful competency cluster model is not adequately addressed.

The third major purpose was to gain a clear vision with regard to the activities being undertaken, with regard to competency clustering, by the participating community college districts. The participating community college districts were presented with a series of inquiries that focused upon aspects ranging from measurement to competency cluster modeling as well as other key aspects further detailed within this chapter. The inquiries allowed the empirical research study to gain a valuable insight into the level, scope and sequence with regard to the viability of the MIFV. As this data is extracted from the said participants, the level of MIFV understanding will become more clarified as this validation process evolves.

The fourth and final purpose was to ascertain the potential viability and application of the MIFV or some derivative therein within the business community by

the empirical research study participants. This aspect focused upon the MIFV application between the participating community college districts.

Intent of Chapter

The major intent of this chapter is to analyze each of the six major research inquiries that were presented to the designated community college districts and their corresponding responses. The process used in the analysis related to each of the six major areas of research inquiry focused on numeric data contained within the specified tables listed within this chapter. It should be noted that if no activity occurred within a specified area of inquiry, a table was not displayed due to the zero data base line that does not provide literary value to this empirical research study report. However, a narrative explanation and analysis will be undertaken to explain the objective of the question as well as the lack of response and/or lack of activity on the part of the designated community college district. This notation is important in that the empirical nature of this study lends itself to a zero data point when measuring established programs currently in place within the designated community college districts.

The second aspect related to the reporting of research findings will be carried out in a narrative format. The narrative of each area of inquiry will describe and analyze the key elements within each. Further, the narrative process and corresponding table display shall serve as mutually supporting structures to better illustrate the findings. With the utilization of these two processes, the creation of mutually supportive research finding process will lend quantitative validation with qualitative enhancement to this study.

Community College Districts Studied

The community college districts surveyed were Angelina Community College (A.C.C.), Kilgore Community College (K.C.C.) and South Texas Community College (S.T.C.C.). These community college districts were selected based on four major factors. First, each of the study participant community college districts has multiple campus locations throughout their service region. This allowed for a more diverse field of study in population. Second, each of the community college districts serves in excess of 10,000 students through various programs offered through their institutions of learning. The number of potential data sources provides for an adequate research pool. The third major factor regarding the community college districts selection for this study was their geographically dispersed locations. These locations encompassed a wide array of people and business demographic diversity.

Prior to delineating the data analysis aspect, it is important to provide a brief description of the participating community college districts. As will be summarized within the subsequent paragraphs, the selected community college districts encompassed the major industry bases, population samples, as well as geographical aspects of Texas.

K.C.C. serves a tri-state region located in Northeast Texas (K.C.C. Website, 2003) which challenges it to create programs within the specter of three different states. A.C.C. serves an economically depressed area in East Texas, which directs this community college district to present a focus on aggressive workforce development and economic growth (A.C.C. Website, 2003). S.T.C.C. is located in far South Texas and works within the free trade zone as well other international and bilingual programs along

with the various local education initiatives within their regional service area (S.T.C.C. Website, 2003). Each of the study participant community college districts provides different “products” and unique challenges.

Admittedly, West Texas and the major metropolitan areas within the state of Texas were not included within this study. There was one major factor that guided the decision to omit these areas of potential data intake. Utilizing more than the three community college districts would have taken this study into an unmanageable spectrum and level. This empirical research study deliberately restricted the widespread collection of demographics. Within this study, it was assumed through the collection of blind data that adequate demographic disbursement would be achieved. However, this study did not focus on collecting specific demographic information for two main reasons.

First, this study is focused on the development and introduction of a new competency cluster validation model. As such, this process focused on reviewing specific activities and efforts related to this new competency community cluster validation model, which did not require the use of specific demographic data. Second, this study focused on the collection of blind data from the study participant community college districts. To this point, identifying the demographic make up of the study population may have unduly biased and potentially contaminated the data collection process. The contamination of the data collection process would have seriously inhibited or nullified this empirical research study.

This study and the results contained within are somewhat unique in that they were able to utilize both qualitative and quantitative aspects of empirical research. This was accomplished through the use of a sequential upward funneling process focusing on

the advancement and quantification of data collection through the MIFV process. This was especially evident within the motivation and attribute sections of the proposed MIFV process. However, it must be emphasized that the MIFV is a process focused on measuring quantitative results related to the mastery of a designated competency.

Analysis of Research Questions

Question One

What type of needs assessment and/or task analysis is in current use by the selected community college district?

Question One dealt with the needs assessment aspect regarding the creation of the MIFV process. As will be further delineated, the needs assessment and task analysis provides a baseline data point from which to begin. The general response related to this question focused on the ACT™ WorkKeys that are currently being utilized as an “off-the-shelf” tool for needs assessment (ACT™ WorkKeys, 2003).

The most specific response pertaining to this question came from K.C.C. in which they delineated that their community college district can utilize customized needs assessment process on an as needed basis, but generally does not. However, K.C.C.’s study representative did not provide an example of the customized process they have the ability to utilize. The other respondents generally did not customize needs assessment for whatever reason, as they seemed to be focused on the mass production of basic competency cluster models.

Approximately three-fourths of the developmental activities undertaken by the study’s community college districts conducted some form of needs assessment.

However, the scope and sequence was not standardized or as internalized as per what is proposed with the MIFV. It appears that the needs assessment implemented by the study participants took the form of a standardized process, which aligned itself very closely with the ACT™ WorkKeys program (ACT™ WorkKeys, 2003).

WorkKeys is a process, which tests skills in problem solving, communication, and teamwork. It also identifies the specific skill levels needed to perform specific jobs. Further, WorkKeys assessments help people understand their preparedness for basic jobs and careers (ACT™ WorkKeys, 2003).

The person-to-person contact as well as the on-site visits generally focused upon the evaluator following some form of ACT™ WorkKeys standardized checklist. Further, it appeared that little or no resources were expended to assess the worker's fit within the company outside of a skills checklist. Lastly, the majority of interpersonal interaction occurred with the designated representative for the affected company and not the actual development activity participants.

The ACT™ WorkKeys program was the overwhelming choice of the study participants insofar as the creation and implementation of workforce preparation and development such as needs assessment and task analysis activities were concerned. While it appears that the ACT™ WorkKeys program is adequate in reviewing some very basic skills and knowledge, it lacks the in-depth involvement of the MIFV process. While the ACT™ WorkKeys and other off-the-shelf needs assessment tools provide a minimum basis for needs assessment, especially as it relates to the MIFV skills and knowledge levels.

This assertion is put forth on two customization features with regard to competency cluster validation factors. First, utilizing a customized needs assessment process as it pertains to the MIFV addresses critical cultural and environmental issues. These types of issues are especially important as they pertain to the motivational and attribute levels of the MIFV. Further, off-the-shelf needs assessment tools fall short in addressing these critical levels of the MIFV. As such, setting the environmental and cultural climate must be adequately addressed so as to create the needed rite of passage into the production climate.

The use of a standard survey with regard to the development activities was not all that prevalent as it pertained to measuring these activities. The general lack of standardized surveys generally occurred for two reasons. First, the inability for many of these competency clusters to be measured served as a deterrent with regard to the survey process. To this point, it appears that the open-ended nature of the competency cluster questions as well as the choppy process utilized by the participating community college districts was pertinent in assessing the viability of the MIFV. While this poses a major challenge for the community college districts, it is more of a systematic problem as opposed to an ability problem. The second challenge was related to the lack of general assets pertaining to the ability to implement of standard surveys. This major challenge exposes itself due to the lack of direction, time and assets by the participating community college districts (Table 1).

Table 1
Needs Assessment Utilization

Activity	K.C.C.	S.T.C.C.	A.C.C.
Application of some form of needs assessment prior to training activities	90	75	75
Person-to-person interaction during the training activities	80	90	85
On-site visits by community college district officials	90	90	90
Application of ACT™ WorkKeys	90	90	75
Standardized training activity survey	70	60	85
Survey to validate competency mastery back to work site	0	0	0

Activities measured in percentiles are rounded to the nearest whole number.

Participating community colleges

K.C.C. – Kilgore Community College

S.T.C.C. – South Texas Community College

A.C.C. – Angelina Community College

Question Two

What types of performance measurement systems are utilized by the community college districts within this study?

The study respondents generally deferred the issue of performance measurement to the discretion of their clients. To this point, this empirical research study did not gather data from their clients. Insofar as personal improvement process assessment was concerned, the study respondents did not acknowledge the utilization of the above-mentioned process to any great extent. This finding was somewhat remarkable in that it showed, once again, the lack of customizing with regard to competency clustering.

According to research study respondents, the performance measurement process generally focused upon measuring course capstone objectives. The standard measurement means were oral and written examinations as well as hands-on application. These measurements were limited to the specific training received by trainees in keeping with the ACT™ WorkKeys. This type of measurement often serves as snapshot of what

may have been learned and more importantly what was memorized over a short period of time. However, this type of measurement falls short in ascertaining as to whether competency cluster validation has been achieved over a longer period of time, if at all.

The lack of long-term performance measurement results is generally due to time restrictions, logistics and other obstacles. These obstacles are generally the weak link as it applies to the performance measurement results aspect of the competency cluster validation process (Table 2).

Table 2
Performance Measure Process

Activity	K.C.C.	S.T.C.C.	A.C.C.
Personal improvement process assessment	0	0	0
End-of-course examinations	90	90	90
Written examinations	80	85	70
Oral examinations	25	30	25
Hands on demonstrations and/or examinations	15	40	85
Competency cluster validation	0	0	0
Follow-up measurements	0	0	0

Activities measured in percentiles are rounded to the nearest whole number.

Participating community colleges

- K.C.C. – Kilgore Community College
- S.T.C.C. – South Texas Community College
- A.C.C. – Angelina Community College

Question Three

Has the community college district created any customized models within their competency cluster workforce development partnership(s)?

According to the survey respondents, the vast majority of their programs are customized to one extent or another. The level of customization depended on what was ascertained from the limited need analysis based as well as the ACT™ WorkKeys and/or

requests made by the participating community college district's clients. However, the scope and sequence pertaining training activities were generally limited to the process set forth by the ACT™ WorkKeys. As such, one could question the actual level of customization to business objectives.

While the participating community college district programs seemed to be customized on the surface, they were still based on a predetermined process such as WorkKeys. Further, their customized training programs were heavily focused on the traditional KSA, which is merely a part of what the MIFV process sets out to accomplish within the hypothesis of this empirical research study (Table 3).

Table 3
Customization of Training/Workforce Development Activity Plans

Activity	K.C.C.	S.T.C.C.	A.C.C.
Implementation of competency cluster validation model	0	0	0
Customized training and/or activity plans from past experience	80	70	75
Existing and/or standardized plans	10	10	25
Level of customized based on ACT™ WorkKeys	95	95	95
Environmental scan	5	15	15
Other	5	10	5

Activities measured in percentiles are rounded to the nearest whole number.

Participating community colleges

- K.C.C. – Kilgore Community College
- S.T.C.C. – South Texas Community College
- A.C.C. – Angelina Community College

Question Four

To what degree are comparisons made between motivations-attributes-skills-knowledge within the community college district's current competency cluster models?

With regard to this question, it appears that none of the participating community college districts are utilizing of any process resembling the MIFV process. Further, the community college districts designated to participate did not appear to process competencies within a clustering validation process. The majority of competency efforts utilized by the respondent community college districts were primarily focused on the traditional KSA, with those being void of competency cluster validation.

The respondents with regard to question four did not indicate any discernable competency cluster validation processes occurring within their programs, as stated earlier within this analysis. While all of the community college districts conducted some form of measurement and/objective process, they did not rise to the level of a well-defined competency cluster validation model as that in which the MIFV process proposes to accomplish.

The community college district respondents acknowledged their lack of a competency cluster validation process. Further, it appears that the respondents did not have a firm understanding of the concept of competency cluster validation, outside of traditional KSA processing. To this point, an example of a competency process is listed in Figure 1.

Question Five

What techniques are being employed to follow the graduate's progress back to the workplace and assess the transfer of training?

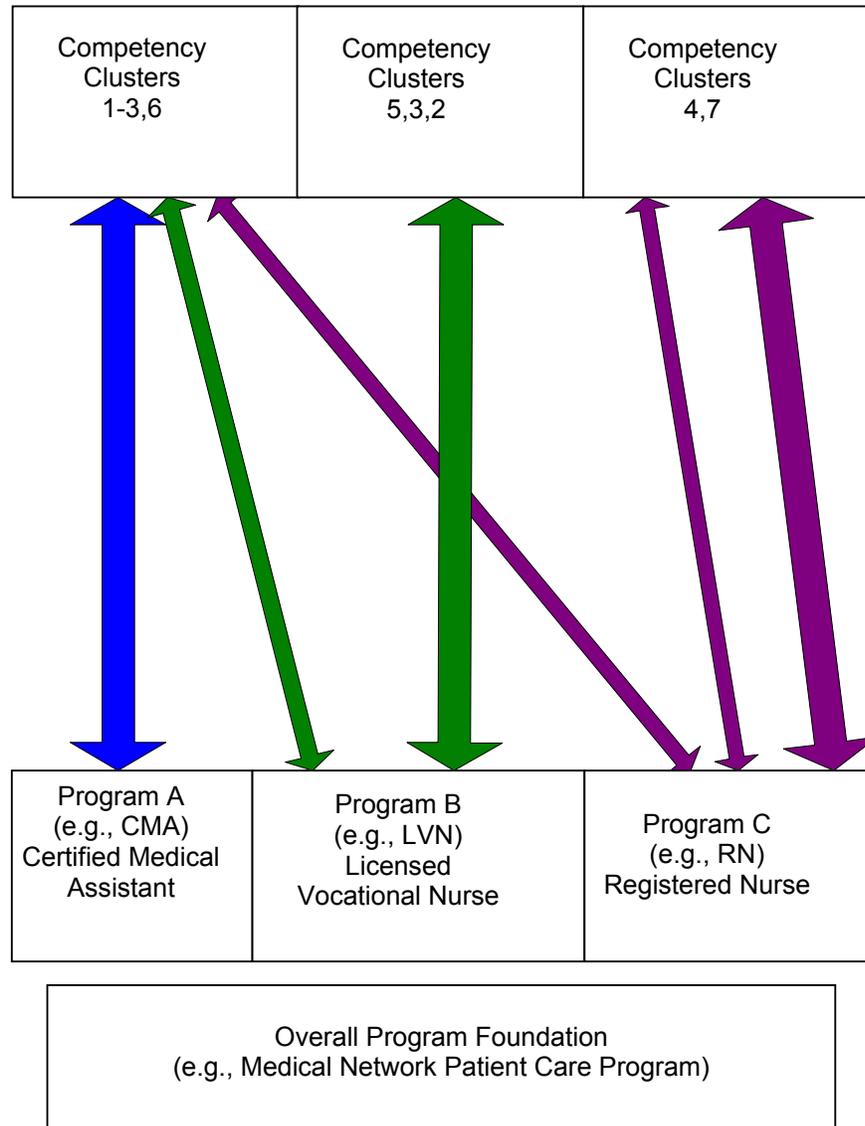


Figure 1
Desired and/or Required Level on Competency Mastery

Post training evaluation, according to the study respondents, generally was left up to the client companies. This process was driven by the lack of logistics and resources by the community college districts as well as relationship with client companies. The responses pertaining to this question were quite remarkable in that there was such a void with regard to tracking training back to the workplace.

Written follow-up generally took the form of existing questionnaires based on ACT™ WorkKeys and/or KSA. The oral follow-up efforts generally came in the form of interviews of the designated client representative. Based on the analysis and evaluation of written and oral follow-ups, there did not seem to be a quantifiable tie between training and competency cluster mastery back to the participants job site, especially as it pertains to the long term review of training success. Lastly, this empirical research study was not able to ascertain any form of long-term follow-up so as to determine competency cluster validation or whether the process was reviewed for enhancements.

Table 4
Training Validation Back to Work Station

Activity	K.C.C.	S.T.C.C.	A.C.C.
Post training evaluation	99	99	99
Written follow-up	75	60	45
Oral follow-up	45	25	35
Ongoing competency cluster validation	0	0	0
Long-term follow-up	0	0	0

Activities measured in percentiles are rounded to the nearest whole number.

Participating community colleges

- K.C.C. – Kilgore Community College
- S.T.C.C. – South Texas Community College
- A.C.C. – Angelina Community College

Question Six

When building training programs within the community college district, to what degree are the following foundations measured and developed related to the MIFV process?

1. Motivations needed—Question Six pertained to ascertaining what compels trainees to action as well as the level of action. The measurement of this aspect is extremely important in that it will generally determine the success and/or failure as well as the level therein of an effort. An entity may be able to bring groups of individuals together based on similar skills and knowledge, although they cannot be guarantee that they will mesh and accomplish stated objectives.
2. Attributes needed—Measurement and assessment focused upon the various properties, qualities, characteristics needed to negotiate successfully the MIFV process. Further, this area of assessment involves dichotomized use of attributes such as attitude, values, integrity, qualities, principles, maturity, accountability, etc. and will be encompassed more inclusively within the attribute level of the MIFV process.
3. Skills needed—The skill(s) level of the MIFV involves the actual “tools” and abilities that an employee brings to the process or those that the MIFV administrators are focused upon related to specific competency cluster mastery.
4. Knowledge needed—The knowledge level of the MIFV focuses on the “know how” that is attempting to be achieved within the MIFV process. This

will serve as a capstone of the competency mastery related to a clear achievement of the desired competency cluster.

While the respondents mentioned the limited use of skills and knowledge especially with ACT™ WorkKeys, the use of motivation and attributes was basically nonexistent in their processes. As such, the ability to validate competency clusters was dramatically inhibited. While the ACT™ WorkKeys are an adequate process, they do not go far enough in customizing a competency model such as the MIFV. Further, none of the respondents acknowledged utilizing motivations or attributes when putting together a workforce development program especially as it pertains to competency cluster validation. As has been stated several times, the motivation and attribute components are critical in building a successful competency cluster validation model.

As was the case in Question Four, the respondent's in regards to this research question did not indicate any discernable motivations-attributes-skills-knowledge competency cluster validation model processes occurring within their workforce development programs. While all of the community college districts queried for this study conducted some form of KSA process, they did utilize anything remotely associated with the MIFV. Due to the empirical nature of this study, the results contained within the analysis of Question Six are not surprising.

Ancillary Findings

The MIFV model is laid out in a very specific, sequential process. This sequence allows this model to follow a logical upward funneling process with regard to validating a competency cluster. This quantitative formula will allow the key stakeholders to

ensure the targeted population achieves the desired competency mastery with regard to workforce development activity. The MIFV model begins with an environmental scan, which will allow for insight as to the various environments in which a company operates on an ongoing basis (Korhonen, 1997). Among the environments that generally will be assessed and addressed are technical, social, political and business (Goldstein and Pfeffer, 1993).

The technical environment will focus on the various technical aspects of the MIFV participant's work environment, especially those related to skills and application of technology. The social environment will encompass the MIFV participant's and company's roles in the overall social environment in which the company and entire business sector a company operate (Hershey and Blanchard, 1993). This aspect of the environmental scan will have a major impact with regard to the MIFV's motivations and attributes components.

The third major environmental area to be scanned will encompass the political environment, both the correctness of actions as well as the mandated actions put forth to the MIFV participant (Korhonen, 1997). This aspect of the environmental scan will have a major impact with regard to the MIFV's knowledge, attributes as well as motivations to some extent.

The last aspect of the environmental scan that must be undertaken is the business arena in which a company and the individual achieve most. It not only ensures the survivability of the participant and company, but the advancement of both as well. This part of the environmental scan is considered to be the tactical aspect of the MIFV, which begins the strategic foundation of this competency cluster validation process.

In conducting the needs assessment, the researcher must identify the challenges that will be addressed in the MIFV process (Stenning, 1999). There are seven steps that must be addressed in the needs analysis process. First, what is the current level of performance that is being evaluated through the needs assessment as it relates to the MIFV? The researcher must utilize the environmental scan process already completed to address this question as well as to lay the groundwork for the rest of the needs assessment process.

The second step in the needs analysis process addresses who or what poses the specific challenge(s) being addressed by the MIFV process (Stenning, 1999). This step is critical in that identifying the source will allow the researcher to apply the appropriate corrective action(s) and/or initiative(s) while understanding the cultural impact of said action(s) (Stenning, 2000).

The third step in the need analysis process focuses on what desired level of performance needed to meet the competency objective is being presented within the MIFV. This, once again, will allow the researcher to use a sequential approach to competency cluster validation. The fourth step in the process involves ascertaining the standard(s), which are being utilized in identifying acceptable performance standards as set forth in the MIFV (Stenning, 1999). A general gap analysis between actual job outputs and desired job outputs is the fifth step in the process, as this will allow the researcher to develop further the needed information to advance the MIFV process (Goldstein and Pfeiffer, 1993).

The sixth step in the needs assessment process relates to ascertaining what support structures are in place to assist the learner through the MIFV process. The

seventh and last step in the needs assessment process focuses on how the overall system either offsets or enhances the individual performance. As the researcher navigates the needs assessment process, the information gathered in this process along with the environmental scan provides a sequential foundation that will be needed to address the task analysis aspect of the MIFV process.

CHAPTER V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The final chapter will provide an overview of the hypothesis, literature review, and findings of the MIFV competency cluster model. This final chapter will also review the MIFV process as well as the utilized methodology with regard to this empirical research study. This chapter will be organized into four sections: research summary, findings and hypothesis, conclusions, and recommendations so as to follow a logical sequence in summation.

The first section, which focuses upon the research summary, will cover the introduction, overview of purpose and literature review. Section two, findings and hypothesis, will detail the findings related to the research, the research design, as well as this study's hypothesis. Section three focuses upon the various conclusions that have been drawn from and validated through the research. Section four, recommendations, will focus upon various applications of the MIFV within the workforce development field as well as conducting further research related to the above-mentioned competency cluster validation process. Lastly, this section will explore other areas in which this competency cluster validation model can be researched.

Summary

The introduction and purpose of this empirical research created a foundation from which this study would evolve as it pertained to the MIFV. Within the introduction

portion of this study, an analysis at the evolving workplace as well as the lack of competency clustering was undertaken. This was an important component in that the hypothesis of this research is to introduce a new competency cluster validation model. The introductory section of this study also detailed the many variables facing business survival and workforce development where delineated. Further, this section describes what a company needs to undertake so as to evolve as an industry.

Two main purposes were focused upon with regard to competency cluster validation. The first focus was finding the gaps in the literature that existed pertaining to the MIFV competency cluster validation model.

The second purpose was to introduce the MIFV. This model if properly developed, should serve as a strong workforce development and performance measurement tool as well as communication tool and a blueprint to success for employees (Boyatzis et al., 1995).

The MIFV, as described earlier, is a sequentially upward funneling competency cluster validation model. The initial action conducted with the MIFV pertains to conducting an environmental scan. An environmental scan encompasses a thorough review of the various environments in which the clients operate during workforce development activities.

The second step within the assessment aspect of the MIFV involves the application of conducting a needs assessment. To this point, the first critical aspect involves the ultimate goal of the process to be undertaken. In the case of the MIFV, the ultimate goal would be validating the desired competency cluster to be mastered. However, the researcher must identify the challenges that will be addressed within the

needs assessment as well as task analysis process prior to partaking in a competency cluster process (Stenning, 1999). As a researcher delves into the task analysis process, they must be able to link the critical aspects of the overall competency cluster validation process (Stenning, 2000). By accomplishing this activity, the process of validation can begin to take place.

The motivation level of the MIFV is the first level of the actual action plan phase of the MIFV. According to the data ascertained within this study, motivation has rarely been formally implemented into a competency cluster model. However, the MIFV asserts that motivation is the pathway to developing a fully integrated and functional competency cluster validation to meet the demands of today's world of work.

The second level of the MIFV action plan pertains to measurement of attributes with regard to the MIFV. The measurement and assessment of these attributes is focused upon the various properties, qualities, characteristics needed to negotiate successfully the MIFV process. Further, this aspect of the MIFV should encompass past aspects of quasi competency cluster models, which are terms such as attitude, values, integrity, qualities, principles, maturity, accountability, etc. Through the research pertaining to the development of the MIFV, findings support that attributes generally encompass non-technical, value added aspects of competency cluster mastery. The attribute level expands and adds to the motivation aspects of the MIFV in that it brings value-added aspects to a cultural and work environment.

The skill(s) level of the MIFV involves the actual "tools" that an employee brings to the process or those that the MIFV administrators are focused upon pertaining to the mastery related to a specified competency cluster. Webster's Revised Unabridged

Dictionary defines a skill as a proficiency in a subject matter area, such as drawing blueprints or conducting a search of a suspect. Generally, skills are measured in hard data, such as the ability to operate a specific type of welding apparatus (Phillips, 1996).

This aspect of the MIFV is the most often utilized and measured with regard to a community college district's competency cluster process. While this aspect of the MIFV seems to be the quickest and easiest aspect to implement and measure, it does not provide an all-inclusive and successful competency cluster model. Further, while skills can often be obtained for the other aspects of the MIFV, it must be included so as to drive a successful competency cluster process.

The knowledge level of the MIFV focuses on the "know how" that is attempting to be achieved within the MIFV process. Webster's Revised Unabridged Dictionary defines knowledge as "A clear and certain perception of something." The term "something" is obviously somewhat vague in nature. However, within the MIFV, knowledge is the capstone level of a sequential competency cluster model. Lastly, the knowledge aspect of the MIFV serves as the capstone achievement of this upward funneling competency cluster validation model.

Findings

While this empirical research study in no way diminishes past competency clustering models, the MIFV allows for a more structured and advanced model from which to challenge, develop and assess a workforce as well as validating the myriad of competency clusters facing them. The major impact of the MIFV falls within the areas

of motivation and attributes as well as its upward funneling competency cluster validation model.

To this point, it appears that the community college district study respondents are not conducting an environmental scan as it pertains to their competency cluster modeling efforts. As such, it is difficult for the study participant community college districts to gain the requisite information to discover what environmental factors could enhance and/or challenge their competency cluster efforts. Without an adequate environmental scan, the participating community college districts are going into their competency cluster efforts without a clear profile of their client needs as well as future objectives.

The participant community college districts are doing very little in the way of needs assessment as well as task analysis. This aspect of the competency cluster validation model, as described earlier, is very critical to the MIFV model. It appears that the participant community college districts are utilizing the ACT™ WorkKeys as their sole needs assessment and task analysis tool. As delineated early within this report, the ACT™ WorkKeys are an adequate tool when assessing very basic skills of a designated workforce. However, this process does not rise to the level of needs assessment and task analysis needed to meet the standards of the MIFV.

The needs assessment and task analysis aspect of the MIFV builds off of the environmental scan that is achieved in the first step of this model. It accomplishes this feat by taking the profile built within the environmental scan component and adds it to the foundation of the MIFV by detailing which needs and tasks are needed to evolve through the above mentioned competency cluster validation model. It is important to

note that the evaluation stakeholders develop the environmental scan, needs assessment and the task analysis.

The motivation level allows the researcher to encapsulate the various aspects that compel a worker to action into a quantifiable formula with the MIFV. It appears that the participating community college districts are not conducting any form of motivation inventory or assessment. Further, the ACT™ WorkKeys and KSA processes in current use by the participant community college districts do not measure motivators within their competency clustering process. To this point, the ACT™ WorkKeys and KSA's focus on quick measurements of minimal actions and/or skills.

The attribute level allows the researcher to take information ascertained within the previous components as well as such aspects abilities, etc. This data is then refined and moved upward to the skills level of the MIFV. Once again, the participating community college districts provided no evidence related to the assessment and/or implementation of attributes within their competency clustering efforts. As was the case with the motivation level of the MIFV, the ACT™ WorkKeys and KSA's process current in use by the participant community colleges do not measure attributes within their competency cluster efforts.

The skills and knowledge components of the MIFV are in keeping with past work conducted within this body of research, with three notable differences. First, these two levels have been formatted so as to allow for flexibility and revision to meet the changing requirements of the current workplace. Second, the traditional competency cluster models have explored knowledge and skills first within the scope of study. However, the MIFV narrows their scope as well analyzes both components last in the

process as it allows a researcher to delve first into the cultural and environmental fit of individuals within this validation model. Third, knowledge and skills, within the MIFV, do not play the largest role within this process as has been the case in past. Rather they are another key component within the MIFV competency cluster validation model.

The last major significant factor of this study pertains to its sequential competency cluster validation. In the past, many components within the MIFV have been utilized in one form or fashion. However, said components have generally been put in wherever the researcher sees fit, which leaves most processes within this spectrum dichotomized. The MIFV on the other hand, provides the researcher with a sequential process to follow as one looks at the competency cluster validation process. Lastly, through this sequential competency cluster validation process, the researcher is able to take previously qualitative aspects and convert them into a quantitative process that is more easily communicated to stakeholders.

Conclusions

The third section pertains to the conclusions drawn from the research ascertained within this study. The basic structure of the MIFV is unparalleled in its approach to competency cluster validation modeling in that it begins with an environmental scan leading to a needs assessment. All of these critical components of the MIFV are utilized to focus on the end objective of competency cluster mastery. The key stakeholders and their standard for task mastery pertaining to the activity being initiated determine the level of competency cluster mastery.

After these MIFV components are determined, the competency cluster validation process is implemented and the sequential processing occurs. It is within the upward sequential processing that the MIFV undertakes a major deviation from the traditional KSA competency cluster model, which is more of a bundled process. The MIFV on the other hand, is a step-by-step upward funneling sequential process that is evaluated at each phase so as to determine effectiveness and whether the particular MIFV validates the competency clustering effort. Further, the MIFV, as will be assessed later in this project, is a quantifiable process with qualitative enhancement features. As the learner evolves through the MIFV, each level will be delineated as well as leading to the next level. This process will lead to the competency cluster MIFV process, as has been illustrated in Exhibit A.

Pre-Work

As a researcher delves into the task analysis process, they must be able to link it with the critical aspects of the overall competency cluster validation process (Stenning, 2000). The first critical aspect involves the ultimate goal of the identified process. In the case of the MIFV, the goal would be the stated competency cluster to be validated. The second major aspect of the task analysis process involves the design, which in the case of the MIFV focuses on the needs analysis and environmental scan as well as its effect on each level of the competency cluster validation model (Korhonen, 1997). The third major aspect of the task analysis process focuses on the management of the entire process, which is critical in the MIFV and its sequential nature (Stenning 1999). It is

important to keep in mind that each of these aspects is equally important as well as interlocking in nature as illustrated below (Stenning 2000).

There are four stages involved in preparing to undertake a task analysis process (Stenning, 1999). First, the development stakeholders must set definable parameters from which to operate the task analysis (Goldstein and Pfeiffer, 1993). Second, the researcher must compile the needed resources to undertake the stated task analysis process. Further, the researcher must build enough flexibility into the process to address critical needs that will present themselves as the stated needs assessment process unfolds. Third, it is critical that the researcher must have a manner in which they can validate their research, as is the case with the MIFV (Stenning, 1999). Further, the researcher must be prepared to re-evaluate the problem area(s) and revise if possible or abandon the process should the competency cluster validation be unattainable. The last stage of the task will involve the process of reporting the research along with the various results of said research (Stenning, 1999).

The basic foundation for the task analysis involves four major steps that must be undertaken in order for the process itself to realize its full potential (Stenning, 1999). First, any task analysis must be incorporated within a competency cluster validation process must adequately address the various critical success indicators within the MIFV (Goldstein et al., 1981). The second step in the task analysis process involves ascertaining the challenge that the MIFV process proposes to address or overcome.

The most critical aspect involved within these steps is the researcher's ability to create or enhance the appropriate diagnostic tools to overcome the presented challenge(s) (Korhonen, 1999). As the researcher formulates the diagnostic process,

they should keep a simple concept in mind as it pertains to creating a complex process. To this point, General Tommy Smith of the United States Army stated a simple concept that allowed a researcher to begin the process of building a complex process. This statement was simply put, “What is occurring that should not be occurring and what is not occurring that should be occurring” (Smith, 1993).

Once the researcher ascertains the specific challenges, the third step on the task analysis process will involve creating an investigative process to address said challenge (Stenning, 1999). This step begins the assembling of the MIFV model and each of its intricate as well as sequential steps. The fourth and final step involves the structuring of a foundation focused on developing a solution to be addressed by the MIFV (Stenning, 1999).

Motivation

The motivation level of the MIFV is the first level of the action plan phase. According to the data ascertained within this study, motivation has rarely been formally implemented into a competency cluster validation model. However, the MIFV asserts that motivation is the pathway to developing a fully integrated and functional competency cluster validation to meet the demands of today’s world of work. It should be clear as to why motivation serves as the first level of the MIFV. While an entity may be able to bring a groups of individuals together based on similar skills and knowledge, they cannot be guaranteed that they will mesh and accomplish stated objectives. Further, it is the employee delivering service to the company’s customer. As such, the ability to

motivate the employee base to achieve competency cluster validation mastery is critical within the global workforce development scheme.

While motivation has become a major segment within the workforce development scheme, it has rarely been undertaken as a major academic research endeavor. However, the motivation of students and learners has been researched quite extensively through this study and can be easily infused into workforce development. As this unfolds, researchers have identified five major aspects related to motivation (Weinert and Kluwe 1987).

First, it is vital for the leader of the workforce development endeavor along with the line supervisor to give frequent, early and positive feedback that supports workers' beliefs that they can master the competency cluster (Weinert and Kluwe 1987). Second, the competency cluster challenge should challenge the learner, but not overwhelm said learner (Hope and Hope, 1995). Third, learners must not only find value for the company in participating in the MIFV process, but also personal meaning. Fourth, the MIFV process must be created so as to nurture an open and positive learning environment (Weinert and Kluwe 1987). Last, the learner must feel as if they are a valuable member of an ongoing learning community (Hope and Hope, 1996).

Attributes

Attributes mean many things to many people in different situations. To this point, Webster's Revised Unabridged Dictionary defines an attribute as "Any property, quality, or characteristic that can be described to a person or thing." With this type of definition, it is no surprise that this term means different things to different people. With

this serving as a backdrop, this study will put forth a composite definition for the term attribute as it relates to the MIFV competency cluster validation model. The various terms such as attitude, values, integrity, qualities, principles, maturity, accountability, etc. will be encompassed in a more inclusive attribute level of the MIFV process.

The research supported the premise that attributes generally encompass non-technical, value added aspects of competency cluster mastery. Further, the attribute level expands upon the motivational aspects of the MIFV in that it brings value-added aspects to a culture and work environment. As the process evolves, each level is quantified, accumulated and validated as the MIFV funnels upward through the prescribed process. This aspect of the attribute level within the MIFV cannot be minimized or overlooked based on the increasing diversity workforce.

Skills

The skill(s) level of the MIFV involves the actual “tools” and abilities that an employee brings to the process. This level may also bring those skills that the MIFV administrators are focused upon related to specific competency mastery. Generally, skills are measured in hard data, such as the ability to operate a specific type of welding apparatus (Phillips, 1996). As the MIFV unfolds, the skill level transcends this competency cluster validation process from the environmental and cultural components into the “hands-on” production components. This is an important transition as the environmental and cultural levels are an important sequential ramp up in the creation of the MIFV providing the impetus for the production aspects of said competency cluster validation model.

Knowledge

The knowledge level of the MIFV focuses on the “know how” that is attempting to be achieved within the MIFV process. Further, knowledge is the capstone level of a sequential competency cluster validation leading to the mastery of a desired competency.

In summation, the basic structure of the MIFV is unlike other competency cluster model with its main focus on validation, not predetermined checklists. The MIFV’s planning process is more detailed than its counterparts as it focuses on an upward funneling process. Further the implementation of the motivation and attributes components further strengthen the MIFV model. Key stakeholders and their standard for task mastery pertaining to development activities determine the competency cluster validation model. After these MIFV components are determined, the competency cluster validation process is implemented and the sequential processing occurs.

The MIFV infuses cultural assessment as part of the sequential process that undertakes a major deviation from the traditional KSA process, which is more of a bundled and choppy process. The MIFV on the other hand, is an upward funneling sequential process that is evaluated at each phase so as to determine effectiveness. Further, this evaluative process will determine whether the particular MIFV should continue towards competency mastery. Further, the MIFV is a quantifiable process with qualitative enhancement, which is another unique aspect of this model. As the learner journeys through the MIFV, each level will be delineated, evaluated and utilized as a lead into the next level, as depicted in Appendix D.

Recommendations

There appear to be two main recommendations pertaining to the MIFV, that being future research and application. However, it appears that this model along with other competency models have a bias toward the general skill trades. It will be important for the MIFV to be applied and researched across a broader spectrum of jobs and competency cluster validation efforts. The Texas Higher Education Coordinating Board is an excellent source listing a wide array of opportunities for implementation and use with regard to the potential application of the MIFV.

Potential Application of the MIFV

The MIFV appears to be a genuine and credible competency cluster validation model that can be successfully applied within three critical sectors of the general population in the short-term. Among the various sectors to which this model could be applied in the near future are as follows:

1. The various community college districts throughout the United States
2. The various levels of governmental entities within the United States
3. The business community in general within the United States

The research contained clearly delineated two pertinent points related to the viability of the MIFV within the community college district environment. Point one: While the various community college districts participating within this study have made varying degrees of competency clusters processes, they do not rise to the level of the MIFV process.

Point two delineates the fact that the MIFV will strongly enhance the current efforts of the community college districts. Further, the MIFV will allow community college districts to provide more quantitative performance feedback to their clients, which will add value to their workforce development efforts.

Immediate Application of the MIFV

The MIFV could serve as an effective workforce development tool for governments at all levels. As the government attempts to become more effective as well as modernizing, the MIFV can provide the impetus to the above-mentioned aspects as well as better managing performances of civil servants. With regard to the general business sector, the MIFV can serve many purposes, including but not limited to the following:

1. Workforce development
2. Compensation management
3. Performance management
4. Recruitment and retention
5. Business alliance and development
6. Risk management
7. Career evolution

As the MIFV pertains to future research, there are four major sectors that can immediately be researched. First, community college districts outside of the State of Texas would be a worthy research project pertaining to the MIFV. Studying community college districts outside of the state of Texas would expand the scope and sequence of

this study. Further, it would allow the MIFV process to gain a broader acceptance within the community college district systems throughout the United States.

The second sector that can that may become an area of future research pertaining to the MIFV relates to studying private schools. Studying the various levels of the governmental hierarchy within the United States is another area of future research. Studying private schools and governmental entities should provide the same benefits as those related to the future research of community college districts outside of Texas.

The final potential for further research of the MIFV will be converting this competency cluster validation model into a training model. This will present new challenges and opportunities for the MIFV as well as providing the business community with a new, quantifiable, training and development process.

Competency cluster validation is the key to developing job ready individuals who can meet the requirements of the work world of today. The MIFV can become the standard for developing the competency cluster validation process that will link traditional “skills” processes with critical motivations, attributes and knowledge aspects. The blending of the various components contained within the MIFV will take the competency cluster validation process beyond the general trades into the knowledge worker environment of today. With the appropriate research, application of the MIFV has unlimited potential in workplace learning as well as workforce development.

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AMACOM.

APPENDIX A

RESEARCH QUESTIONS

1. What type of needs assessment and/or task analysis is in current use by your community college district?
2. What type of performance measurement system(s) did your community college district utilize as it pertains to your competency cluster validation process?
3. Has your community college district created any customized models within your competency cluster validation and/or workforce development partnership(s)?
4. To what degree are comparisons made between motivations-attributes-skills-knowledge within your community college district compared to your competency cluster validation process?
5. What is used as techniques to follow the graduate's progress back to the workplace and assess the transfer of training?
6. When building training programs within your community college district competency cluster validation process, to what degree are the following foundations measured and developed related to the MIFV?
 - A. Motivations needed
 - B. Attributes needed
 - C. Skills needed
 - D. Knowledge needed

APPENDIX B

PILOT STUDY

Research Questions

Note: Please exclude basic skills and adult literacy classes related to this questionnaire.

1. What type of needs/task analysis is in current use?
 - A. If yes what process is being used:
 - 1) Please provide a copy of related documents.
 - B. If no, how do you survey the needs of your clients?
2. What is the demographic breakdown of the study group?
 - A. Age
 - B. Race
 - C. Sex
 - D. County of residence
 - E. School district graduated from
3. What types of performance measurement systems are in place?
 - A. If yes what process is being used:
 - 1) Please provide a copy of related documents.
 - B. If no, how do they survey the needs of your clients?
4. How can you customize your competency training partnership(s)?
5. Do you measure your competency plans? **Yes or No.** If yes, what type of measure tools do you use and please explain your process.

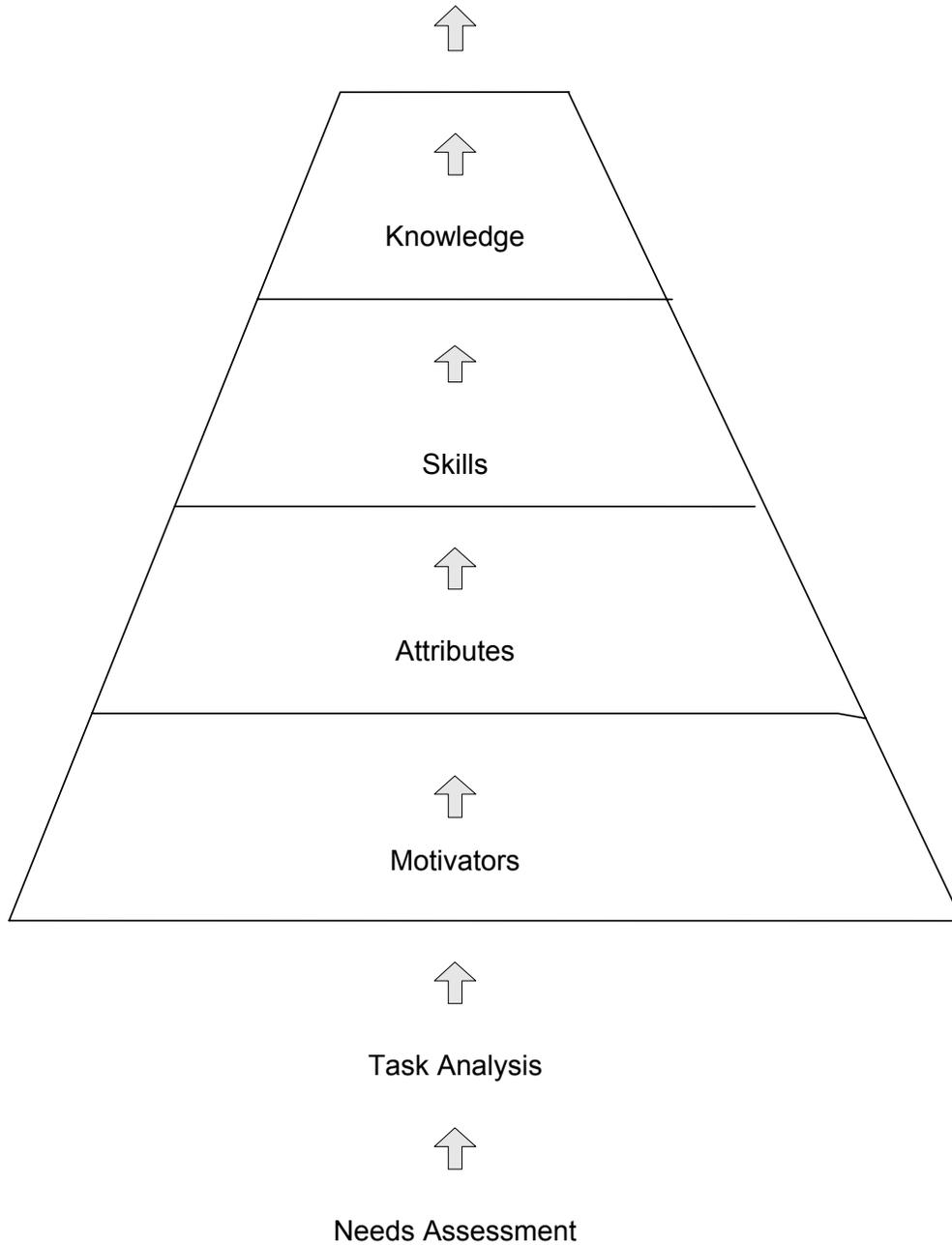
6. How do you and your business partners transfer training back to the job? For example, the following formula may be used.

$$\text{ROI} = \frac{\text{Net program benefits}}{\text{Program cost}} \times 100$$

7. When building your training programs do you assess the following foundations?
- A. Behavior needed
 - B. Attributes needed
 - C. Skills needed
 - D. Knowledge needed

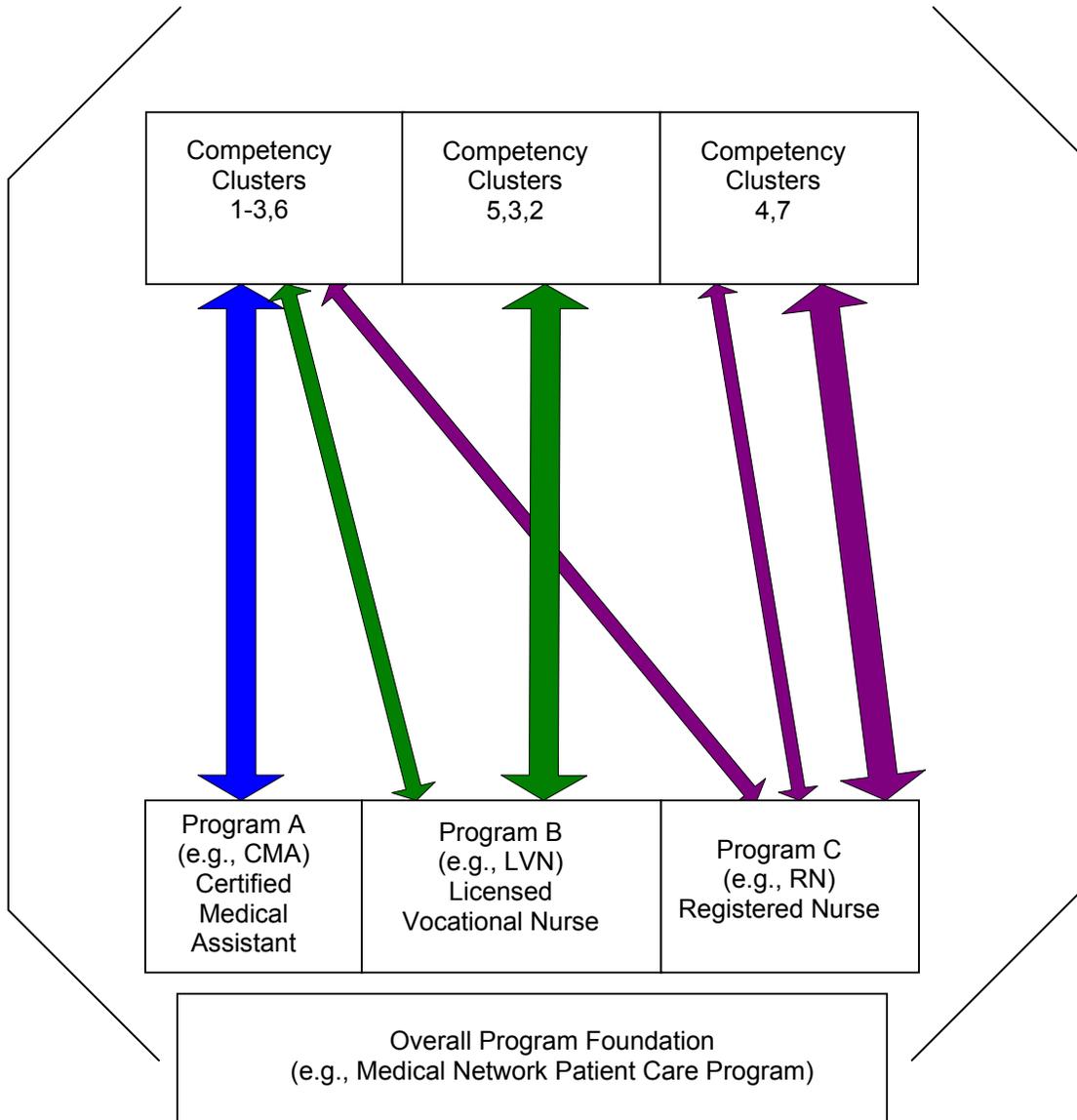
APPENDIX C

DESIRED COMPETENCY CLUSTER VALIDATION



APPENDIX D

DESIRED AND/OR REQUIRED LEVEL ON COMPETENCY MASTERY



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