1993

Learning Styles and Selected Demographic Characteristics of Dislocated Workers.

Samuel Lewis Harvill Sr
Louisiana State University and Agricultural & Mechanical College

Follow this and additional works at: https://digitalcommons.lsu.edu/gradschool_disstheses

Recommended Citation
https://digitalcommons.lsu.edu/gradschool_disstheses/5509
INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.
Learning styles and selected demographic characteristics of dislocated workers

Harvill, Samuel Lewis, Sr., Ph.D.

The Louisiana State University and Agricultural and Mechanical Col., 1993
LEARNING STYLES AND SELECTED DEMOGRAPHIC CHARACTERISTICS OF DISLOCATED WORKERS

A Dissertation

Submitted to the Graduate Faculty of the Louisiana State University and Agricultural and Mechanical College in partial fulfillment of the requirements for the degree of Doctor of Philosophy in

The School of Vocational Education

by

Samuel Lewis Harvill, Sr.
B. S., University of Southern Mississippi, 1985
M. Ed., University of Southern Mississippi, 1990
May 1993
ACKNOWLEDGEMENTS

To satisfy my long term educational goal is both rewarding and humbling. It is the culmination of my interaction with faculty, peers, and family.

First, I would like to express my appreciation to my major professor, Dr. Betty C. Harrison, for her friendship, her expertise, her astute insight, her long hours, her unwavering support, and her commitment to the importance of recognizing the diversity of the individual.

I would like to thank my committee members: Dr. Michael F. Burnett for always finding the time to share his research and statistical know-how; Drs. James W. Trott, James G. McMurry, and Vincent F. Kuetemeyer for their indulgence, cooperation, and timely comments.

I would also like to thank my peers. Without their sharing of ideas, encouragement, and moral support, maintaining a healthy perspective would have been impossible.

I wish to express my appreciation to my daughter, Jana, and my sons, Sam, Jr., and Corey for their support and encouragement. Their confidence in my ability to reach this goal has been reassuring and steadfast throughout my educational experience.

To my wife, Pat, I offer a very special thank you for simply putting up with it all. Her assistance and commitment to my lifelong educational goal was unfailing.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>ACKNOWLEDGEMENTS</th>
<th>ii</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIST OF TABLES</td>
<td>v</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td>vi</td>
</tr>
</tbody>
</table>

## CHAPTER

1 INTRODUCTION ........................................ 1

- Statement of the Problem ........................................ 5
- Purpose of the Study ........................................... 5
- Objectives of the Study ...................................... 6
- Significance of the Problem .................................. 6
- Definition of Terms ............................................ 8
- Summary ......................................................... 9

2 REVIEW OF LITERATURE ................................... 11

- Views of Style ................................................ 11
- Historical Perspective of Style ............................. 14
- Brain Development ............................................ 17
- Methods of Measuring Style .................................. 19
- Summary of Theory Similarities .............................. 25
- Meeting Instructional and Training Needs .................. 26
- Dislocated Workers .......................................... 30
- Variables Influencing Training .............................. 34
- Summary ......................................................... 42

3 METHODOLOGY ........................................... 43

- Population and Sample ........................................ 43
- Instrumentation ................................................. 44
- Data Collection ................................................ 47
- Data Analysis .................................................. 48
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Highest Level of Education of Dislocated Workers</td>
<td>52</td>
</tr>
<tr>
<td>2.</td>
<td>Last Employed Occupational Categories of Dislocated Workers</td>
<td>53</td>
</tr>
<tr>
<td>3.</td>
<td>Learning Style of Dislocated Workers</td>
<td>54</td>
</tr>
<tr>
<td>4.</td>
<td>Learning Style by Gender of Dislocated Workers</td>
<td>55</td>
</tr>
<tr>
<td>5.</td>
<td>Learning Style by Ethnicity of Dislocated Workers</td>
<td>56</td>
</tr>
<tr>
<td>6.</td>
<td>Learning Style by Age of Dislocated Workers</td>
<td>57</td>
</tr>
<tr>
<td>7.</td>
<td>Learning Style by Educational Level of Dislocated Workers</td>
<td>59</td>
</tr>
<tr>
<td>8.</td>
<td>Learning Style by Last Employed Occupation (DOT) of Dislocated Workers</td>
<td>61</td>
</tr>
</tbody>
</table>
ABSTRACT

The purpose of this study was to: (1) describe dislocated workers in Louisiana by learning styles and demographics; (2) compare learning style by demographics; and, (3) determine if learning style is independent of occupational area. A simple random sample of 235 dislocated worker participants was drawn from participants served in the Louisiana Job Link Center at Louisiana State University during FY89 through FY91.

Data were collected using two instruments. The researcher designed recording form was used to enter the demographic variables gender, ethnicity, age, educational level, and occupational areas (DOT) codes. The Gregorc Style Delineator identified the preferred learning style channel of dislocated workers as either abstract random (AR), abstract sequential (AS), concrete sequential (CS), or concrete random (CR).

The demographics consisted of: gender, 119 male and 116 female; ethnicity, 134 white, 96 black, 5 other; age, 19-71 years; education, 22 had less than high school; and, occupation (DOT), clerical and sales had 100. Learning style channel preferences: AR, 12.9%; AS, 11.4; CS, 61.7%; and, CR, 14%.

The Chi-Square test of independence was used to compare the differences in learning style of dislocated workers by gender, ethnicity, age, educational level and last employed.
occupational area. Only the variables learning style and educational level were not independent. Male, female, and older dislocated workers tended to have concrete sequential learning styles, persons with higher levels of education tended to have a greater diversity of style, and no particular occupational area preferred any one style.

The results suggest that further research studies need to be done using dislocated workers and learning styles since the variable learning style has not been previously addressed with dislocated workers. It is further recommended that additional research be conducted to ascertain if the research sample in this study was typical or atypical.
CHAPTER 1
INTRODUCTION

Research conducted by government, industry, and private sources have emphasized the plight of the dislocated worker. A description of this plight is offered by this researcher.

The Economic Dislocation and Worker Adjustment, Title III, of the Job Training and Partnership Act assists workers who are unemployed because of plant closing or permanent layoffs. These workers through no fault of their own . . . are unlikely to return to their previous occupation . . . . Services provided to dislocated workers include assessment, job search assistance, job clubs, job development, placement, job training, remediation, supportive services, pre-layoff assistance and relocation assistance (Louisiana State Department of Employment And Training, 1991, p. 1).

According to the U.S. Government Accounting Office (1987), the characteristic descriptors of the dislocated worker participants in the Job Training Partnership Act (JTPA), Title III, programs were 22-44 year old white males with at least a high school education employed in manufacturing.

Approximately one million United States workers lose their jobs each year as the result of business closures and permanent layoffs (U.S. DOL, 1988), and the dislocated workers are faced with the traumatic and difficult task of finding new employment. These workers represent the "... mainstream of America's workforce and represent virtually every major sector of the economy" (U.S. GAO, Dislocated Workers, 1989, p. 10).
Dislocated workers remain unemployed, on an average, more than 14 weeks a year. Productivity loss is estimated at almost $4,500 per worker totalling approximately nine billion dollars lost each year to the United States economy. (Deere & Wiggins, 1988) About half of the dislocated workers for the period of 1979-1988 were re-employed part-time or underemployed full-time in lower paying jobs than previously held.

Based on information from the U.S. Department of Labor, Bureau of Labor Statistics (News, August 19, 1992),

A total of 5.6 million workers... displaced from their jobs sometime in the period between January of 1987 and 1992,... Nearly two-thirds of them were reemployed... Of those who had lost and then found new full-time wage and salary jobs, about half earned as much or more than they had earned on their lost job (p. 1).

Beyond the demographics the pressures exerted on an individual when job loss occurs affect the physical and mental health of dislocated workers. Sustained unemployment increases depression, physical malady, anxiety, chemical abuse, and family conflict (U.S. Office of Technology Assessment, 1986).

Further corroboration of the federal and state government findings were evidenced by other researchers. Garrett (1988) indicated that dislocated workers, especially racial minorities, women, and the elderly, demonstrated poor self-concept, poor family relationships and social interactions, and a dependency on drugs and alcohol. This
was a direct result of the emotional upheaval caused by plant shutdowns. Results of a survey by Podgursky and Swaim (1986) showed that a disparity existed among dislocated workers in gender, age, ethnicity, and education level. Their models of reemployment and post-displacement earnings showed that, "Black and Hispanic workers are over-represented, while women were under represented" (p. 5) in the model. Displaced workers had less education and, for the most part, were younger than their non-displaced worker counterparts. These findings were supported by Piekarski (1988) and Swaim and Podgursky (1989). Kinicki (1989) stated that an individual's education level and self-concept were positive factors in finding employment while age was viewed as a negative factor. These finding were corroborated by Dean (1989) and Noel (1988).

Cooper (1988) said plant closing cause problems in the physical and psychological well being of the dislocated worker as well as create financial difficulties. Early counseling intervention in career planning is advocated by Mosca (1989) to avert problems that workers are experiencing stemming from the technology explosion. Wojcicki and Kaufman (1990) advocated a supportive self-participation counseling model that encourages dislocated workers to identify the wants and needs necessary to chart their own vocational course.
Assessment is a necessity and must include the individuals' values, personal and professional experiences and abilities, aptitudes, and interests (Piekarski, 1988). Case (1986) further delineated the role of assessment into vocational/occupational, personal counseling and job placement, along with training and ancillary services.

In responding to the need of Louisiana dislocated workers, Louisiana Job Link Centers were established to address the issues identified above. Dr. Betty C. Harrison, the Director of the Louisiana Job Link Center at LSU, went one step further and included a learning style assessment as part of the comprehensive assessment package. This unique assessment of dislocated workers at the Center at LSU took into consideration the way individuals learn and communicate. It further focused on the personality and diversity of the dislocated worker for use in counseling, training, and employment.

A preponderance of literature has stressed the importance of identifying how an individual learns and ways of accommodating that particular style (Jung, 1971; Myers, 1977; Keefe, 1979, 1982; Kolb, 1984; Gregorc, 1985; McCarthy, 1990; and Guild and Garger, 1985). Keefe (1979) stated that "Learning styles are characteristic cognitive, affective, and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (p. 4).
Learning style and brain behavior averred (Keefe, 1982) was a new assessment and intervention tool and not a fad. A theoretical framework for learning and teaching is established by the learner gaining more self insight. The incorporation of learning style input into the assessment process is recommended by both educators and trainers (Keefe, 1979, 1982; Mc Carthy, 1980; Gregorc, 1985; Case, 1986; and Piekarski, 1988).

Statement of the Problem

The plight of the dislocated worker is well documented in the literature (Podgursky and Swaim, 1986; Merriam, 1987; Dean, 1989; Garrett, 1988; Kinicki, 1989; Hall and Stewart, 1990; and, Wojcicki and Kaufman, 1990). Similarly, every assessment tool must be utilized to provide the dislocated workers with the support they need to counteract the loss of self-esteem and frustration when a layoff occurs. These individuals need to maintain their self esteem to 'get on' with their lives. Incorporating the style component in the dislocated workers assessment provides more individual knowledge, more appropriate teaching and learning, and extended information for optimum results in counseling, training, retraining, and placement.

Purpose of the Study

The overall purpose of this study was to describe dislocated workers by learning styles and selected demographic characteristics.
Objectives of the Study

The following objectives were formulated to guide the inquiry by this researcher:

1. Describe the dislocated workers who were served by the Job Training Partnership Act (JTPA) sponsored program at the metropolitan Louisiana Job Link Center at LSU (JLC) on the demographic characteristics of gender, ethnicity, age, educational level, and last-employed occupational area.

2. Identify learning style, as measured by the Gregorc Style Delineator, of dislocated workers who were served by the metropolitan JTPA sponsored program at the Louisiana Job Link Center at LSU (JLC).

3. Compare learning style, as measured by the Gregorc Style Delineator by the selected demographics (gender, ethnicity, age, educational level) of dislocated workers who were served by the metropolitan JTPA sponsored program at the Louisiana Job Link Center at LSU (JLC).

4. Determine if the learning style, as measured by the Gregorc Style Delineator, of dislocated workers who were served by the metropolitan JTPA sponsored program at the Louisiana Job Link Center at LSU (JLC) is independent of selected occupational area.

Significance of the Problem

The incorporation of learning style into the comprehensive vocational assessment of dislocated workers
will heighten their personal understanding of self and of others with whom (s)he associates, in personal and professional life. Greater understanding of self enables the individual to be more tolerant of others and promote a better understanding of unlike behaviors. Based on observation of JLC participants and their comments on forms submitted to the center staff following workshops, B. C. Harrison (personal communication, July 17, 1991), stated that the more the individual knows about self and how (s)he perceives and processes information, future occupational training or re-training will be less traumatic and will have greater focus. Greater self knowledge fosters more confidence, enhancing self-esteem. An increased awareness of the learning/teaching styles theory and its practical application can provide appreciation for others, foster growth experiences, tap hidden talents, and teach the art of flexibility (Butler, 1984).

Based on video practice interviews and subsequent evaluation of those by the dislocated worker and the JLC staff representative(s) as well as oral comments after an actual interview, understanding style information helps the individual when preparing for employment interviews, and subsequently on the job interactions. (S)he will be more likely to select appropriate words in conversation, and correctly read the nonverbal signals sent by others in the interview process, thereby improving the opportunity to gain
employment. The use of assessment information helps to guide individuals in the job-seeking process by exploring occupational areas in which their chances of success may be escalated. B. C Harrison (personal communication July 17, 1991).

No studies were reported in the literature that described dislocated workers by learning style and demographic characteristics. Therefore, this study will make a unique contribution to the literature.

**Definition of Terms**

**Learning Style** is an individual's perception of reality and determined by how one perceives and processes information (Kolb, 1984). It "... consists of distinctive, observable behaviors that provide clues to the functioning of people's minds and how their mind relates to the world" (Sewall, 1986, p.10).

**Dislocated workers** are those workers "... who have become unemployed because of plant closing or permanent layoffs resulting from technological change, foreign competition, consumer preference changes, poor economic conditions at the national, state or local level and most probably will not return to previous occupations". (Louisiana State Department of Employment and Training, 1991, p.1).

**Louisiana Job Link Center at LSU** (JLC) was a re-employment program funded by the Job Training Partnership Act (JTPA), Title III, and administered through the Louisiana
Department of Labor in cooperation with seven other university or college campuses. The intent of the program was to provide appropriate services that would enable the individual dislocated worker to become re-employed. In addition, the Louisiana Job Link Center at LSU offered assessment, counseling, and services for job training, retraining, workplace literacy enhancement, occupational skills development, job development, job placement, and follow-up.

**Department of Labor Criteria for Program Eligibility** stated that individuals who were eligible for services had to meet the following criteria:

(A) have been terminated or laid-off or who have received notice of termination or layoff from employment . . . have exhausted their . . . unemployment compensation, and are unlikely to return to their previous industry or occupation; (B) have been terminated or received a notice of termination of employment, as a result of any permanent closure of or substantial layoff at a plant, facility or enterprise; (C) are long-term unemployed and have limited opportunities . . . including older individuals who may have substantial barriers to employment by reason of age; or, (D) were self-employed (including farmers and ranchers) and are unemployed as a result of general economic conditions . . . or natural disasters . . . displaced homemaker as that term is defined in section 4 (29) of this Act. (P.L. 100-418, p. 1107).

**Summary**

Even though approximately one million workers lose their jobs each year with an annual productivity loss of approximately nine billion dollars, and the literature recommends the incorporation of a learning style component in training, there has been no report of it being done. To
better understand how an individual learns, and the appropriate use of that knowledge, can be used in training programs which aim to enhance self esteem and assist the dislocated workers. Using the additional assessment component of Learning Style, all program personnel can better accommodate the individual dislocated worker who often times has been devastated by job loss. The Louisiana Job Link Center at LSU is the only program known, to date, to have addressed this issue commonly (known as learning style) involving dislocated workers.
CHAPTER 2

REVIEW OF LITERATURE

The research on learning style has been extensive in recent years due to the interest in the diversity of individuals and how they perceive, process, interact, and respond to the environment. This diversity is delineated by Smith (1982) as . . . how people differ in how they go about certain activities associated with learning . . . how they approach problem solving . . . how they go about 'information processing'. . . . Some people like to 'get the big picture'. . . . Other people like to begin with examples and details . . . . Some like theory before going into practice. Others don't (p. 23).

Guild and Garger (1985) stated that "Developing self-awareness without the judgmental labels of 'right' or 'wrong' or 'best' or 'better' can bring us a positive sense of self-esteem . . . the best part of learning about style is knowing that 'I'm OK!'" (p. 23).

Views of Style

Gregorc (1979) views style as how a person learns from, and interacts with, their environment. This behavior gives a "... clue to how a person's mind operates" (p. 234). Style (Gregorc, 1985) further stated is "... the outward product of the mind and psyche . . . used to make its presence known to the world . . . . the signature of special qualities that leaves an impression on the physical world. Generically, style consists of outer behavior, characteristics, and mannerisms which are symptomatic of the psyche and particular mental qualities" (p. 7).
"Learning styles are behaviors, characteristics, and mannerisms which are symptoms of mental qualities used for gathering data from the environment" (Gregorc, 1985, p. 179). He divided learning style in two groups, natural and role-based. These groups or classifications "... play important psychological roles in our 'indivi-dualistic' (me/not me) identity system" (Gregorc, 1985, p. 179). The individual's identity system is often unknown causing an identity crisis. "Therefore, recognizing our 'indivi-dualistic' system and becoming aware of the various aspects of the 'me' and 'not me' parts of our personalities is an important step in understanding Self" (Gregorc, 1985, p. 179). Natural learning style is the innate mental qualities or "... psychologically the 'me' part of our identity system" (Gregorc, 1985, p. 179), our 'comfort zone'. Role-based learning style is not innate but externally taught behavior that is culturally and socially accepted and expected, "... psychologically it is only the 'not me' part of our identity system. Problems arise when we become too enmeshed in the 'not me' part of our personalities. Then we are indeed not playing the role but living it" (Gregorc, 1985, p. 179)

Sewall (1986) stated that Gregorc's learning style "consists of distinctive, observable behaviors that provide clues to the functioning of people's minds and how they relate to the world. Preference for a particular set
constitute a learning style" (p. 10). These mind qualities suggest that people learn in combinations of dualities: (a) concrete sequential; (b) concrete random; (c) abstract-sequential; and/or (d) abstract-random. (Gregorc, 1985).

Discussions regarding learning styles have evolved over many years. A brief discussion of other major theorist's style definitions, as well as additional information from the work of Gregorc, is offered by this researcher.

Jung's concept of 'psychological type' is referenced today as learning style or cognitive style. Adaptation to life situations are accomplished by the way an individual perceives and processes information. He characterizes differences in human behavior: as attitudes, extroversion and introversion; as perception, intuition and sensing; and, as processing, thinking and feeling (Jung, 1971).

David Kolb (1984) stated that style is an individual's perception of reality and is determined by how one perceives and processes information, based on experiential learning. This experiential learning is a four-step cycle based on a two continuum relationship of perceiving and processing information, demonstrated through behavior. The concrete-abstract continuum (graphically depicted on a vertical line), or how an individual obtains information from the environment, and the reflective-active continuum (graphically depicted on a horizontal line) or how this information is processed. Some individuals, in new situations, respond
primarily by sensing and feeling while others think things through abstractly. Kolb's work links theory, practice, and affective and cognitive aspects of style. He further asserted that for learning to occur, the individual must act on the information obtained.

Learning styles, according to Keefe (1979) "... are characteristic cognitive, affective, and physiological behaviors that serve as relatively stable indicators of how learners perceive, interact with, and respond to the learning environment" (p. 4).

**Historical Perspective of Style**

The date when the term 'style' was first used to describe the many ways an individual learns is unclear, as stated by Guild and Garger (1985). However, the word style was used as early as the 1930's (Allport, 1961).

James (1890) addressed the diversity of individuals by discussing the various modalities (visual, verbal and tactile). According to James, individuals use one or all of these modalities to reach various conclusions.

Carl Jung, a psychologist, explored cognitive style differences and in 1921, coined the phrase 'psychological types'. These types included both the perceiving and judging function, categorized as rational and irrational. Thinking and feeling were termed rational, using criteria for organization and decision making. Intuition and sensation were termed irrational because decisions were made
intangibly. One's psychological type was noted as the combination of preference for rational and irrational functions (Jung, 1971).

Allport (1961) specified that cognitive style was distinctive ways of living in the world" (p. 271). He further stated that since the beginning of the century, diversity of individuals was an interest of psychology and "... many psychologists would consider this movement as coextensive with the psychology of personality" (p. 15).

Witkin's, et al (1977) theory stated that individual reaction is determined by how the individual perceives and interacts with his/her environment. Guild and Garger (1985) reported that Witkin's work on field dependent, field independent perception began in the 1940's and continued for over thirty years.

Declining research efforts pertaining to individual diversity in the 1960's (Guild and Garger, 1985) contributed to the following issues "... little or no communication between education and psychology regarding individual differences. Educators were either not aware of the cognitive style research or chose to ignore it" (p. 13). Research psychologist changing interest focus and the trend toward standardized Intelligence Quotient (IQ) testing were also factors. Marshall and Osterman (1989) suggested that "interest in learning styles seems to developed out of the post-Thorndike proposals that how information is presented to
students may be more important to the learning process than the general aptitude of students" (p. 417). Bruner (1960) and Bloom (1971) advocated that the majority of students could be taught if: enough time were allowed; relevant instructional methods were used; and, the learning style of students was identified and utilized.

Guild and Garger (1985) stated that educators were not aware, or chose to ignore, the research efforts of other fields involving cognitive style. In addition, Dunn and Dunn (1975) indicated that educators "... have emphasized programs rather than individual learning styles" (p. 44). Declining research efforts into individual disparities were a result of increased activity in "... tapping complex intellectual characteristics rather than perceptual sensitivities" (Tyler, 1965, p. 212).

In 1979-80 Bernice McCarthy (1980) incorporated the theory of individual style and brain-dominance learning in her research and the application of that research into the 4MAT system of instruction. She synthesized and extended earlier research findings, incorporating them into the 4MAT system. She used a 'think tank' to initialize the conceptual framework. The members of this group had expertise working with children and adults and represented multiple disciplines. The conference was attended by Dr. Anthony Gregorc (curriculum and instruction), Dr. David Kolb (management), Elizabeth Wetzig (dance and movement), Dr. Bill
Hazard (educational administration), Dr. Joseph Bogen (neurosurgery), Dr. Jerre Levy (behavioral science), Dr. Barbara Fischer (college director), Dr. Louis Fisher (education), Dr. Bill Berquist (IBM scientific staff), and Dennis Detzel (McDonald Corporation) (McCarthy, 1980). The 4MAT system that resulted from the collaboration of the aforementioned group with Bernice McCarthy was conceptualized as a four quadrant circle representing the duality of the continuum of perceiving and processing, and incorporating brain dominance research resulting in an eight-step application of the learning cycle. This eight-step cycle of instruction was based on how individuals perceive and process information and incorporates both right and left brain modalities. The result is four major learning styles: imaginative, analytic, common sense, and dynamic. Critical to this system is the use of left-right brain dominance in each of the four styles.

**Brain Development**

In the 1970's and early 1980's, brain research with implications for learning style enhancement came to the forefront. The research conducted by Sperry (1973) demonstrated that independent thinking can occur within each hemisphere of the brain with no assistance from the other. This independent thinking takes place even though each hemisphere has its own specific processing style. He further stated that most researchers recognize the differences in the
hemispheres of the brain to be equally important (Bogen, 1975; Herrmann, 1981). The left and right cerebral hemispheres of the brain were discussed by Herrmann (1981). He described the left brain as being "... far better at performing logical, analytic, and mathematical tasks". The right brain was described as "... much better at non-verbal ideation, intuition ... particularly those involving spatial, visual and simultaneous processing" (p. 11). Herrmann further stated that whole brain application is the key to creativity and maximum productivity. Blakeslee (1982) advocated that individuals must strive to resist the tendency to exclude the least preferred side of the brain. He encourages developing both the left and right hemisphere of the brain to maximize potential by utilizing whole brain functioning.

As style research developed, different perspectives on the accommodation of style have evolved. McCarthy (1980) included specific steps in the format system to apply equal emphasis to left and right brain preferences. This allows for individuals to be comfortable some of the time and 'stretch' themselves some of the time. Several researchers' views on accommodating style are discussed by Guild and Garger (1985). Meeting the needs of the individual as often as possible is advocated by Dunn and Dunn (1975). Claxton and Murrell (1987), Witkin et al. (1977) and Gregorc (1989) encourage the individual to accommodate and mismatch his/her
preferred learning style to assist students in the development of new ways of thinking.

**Methods of Measuring Style**

A variety of learning style instruments have been developed to accommodate differences in theoretical definitions of learning style. Guild and Garger (1985) stated that "It is a contradiction to believe that any one definition of style or any particular instrument will be applicable to each individual . . ." (p. 85). However, they further stated that all of the different theories describing style have two common basic tenets: "1. a recognition of a person's individuality; and, 2. an attempt to provide the means to act upon that recognition" (p. 73), and that "... models of style are viewed as providing a wealth of resources ... rather than as a source of confusion" (p. 85).

Jung's theory of personality type which fostered several learning style instruments was discussed by Keefe and Ferrell (1990). "Jung postulated two functions for perceiving - sensing and intuition - and two for making judgments - thinking and feeling" (p. 57).

Jung's personality types were reflected in the work of Kolb, Myers-Briggs, Hanson and Silver, McCarthy, and Gregorc. The authors used different terminology for the types addressed.

*The Learning Style Instrument (LSI)* (Kolb, 1976) used words to delineate two sets of dualities. This instrument
was designed to measure the learning style of an individual stemming from the experiential learning theory. Through a quaternary design he developed an instrument that measures abstraction/concreteness and action or experimentation/reflection.

Myers-Briggs Type Indicator (MBTI) (1976) utilizes Jung’s theories of: (1) intuition versus sensation; (2) thinking versus feeling; (3) introversion versus extroversion; and added (4) judging (control) versus perception (understanding).

The Learning Style Questionnaire (LSQ) was developed by Honey and Mumford (1986) based on Kolb’s Learning Styles Inventory (1976). The LSQ is practical rather than theoretical in nature and identifies four styles of learning: activists, reflectors, theorists, and pragmatists. Activist benefit from activities that are immediate, concise and to the point. Reflectors are better suited for activities that allow review, and analysis of previously learned material. Theorist are more successful when the activity is structured such as part of a model. Pragmatist prefer activities that relate to solutions to job related quandaries. The LSQ is used to determine the degree of preference an individual has for one or more styles (Mumford, 1987).

The Learning Style Inventory: A self diagnosis for adults to assess learning style preferences focuses on two inter-dependent dimensions; perceiving or sensing and
intuiting and making judgments or thinking and feeling (Hanson and Silver, 1980).

The National Association of Secondary School Principals (NASSP) published the Learning Style Profile. This instrument diagnoses cognitive styles, perceptual response tendencies and study/instructional preferences (Keefe, 1988). Keefe further espouses that the Learning Style Profile provides a vehicle to identify style as cognitive, affective, and/or physiological, and to personalize and plan instruction.

Center for Innovative Teaching Experiences (C.I.T.E.) Learning Style Instrument determines modality preferences by assessing instructional exercises including visual, auditory and kinesthetic/tactile activities (Babich, et al, 1976). This instrument was designed primarily for use with seventh, eighth and ninth grade school children. The C.I.T.E is also used in assessing low functioning adults.

The Embedded Figure Model assesses whether an individual’s perception is strongly influenced by a prevailing field known as field dependent or their perception is primarily independent of this field and known as field independent (Witkin, 1969).

Your Style of Learning and Thinking is a self diagnostic instrument that assesses responses in either left brain (logical, analytic, verbal), or right brain (visual-spatial),
or combined left and right brain thought processes (Torance, Reynolds, Ball, and Riegel, 1978).

**Herrmann Brain Dominance Instrument (HBDI)** is an assessment tool that measures hemispheric thinking style preferences grouped in four dominant thinking-processing modes: feeling or kinesthetic, logical or sequential, organized or fact-based, and integrative or holistic (Herrmann, 1990).

**Learning Style Instrument** (Dunn, et al, 1979) identified five major content areas: environmental factors (sound, lighting, temperature); emotional factors (motivation, need); sociological factors (working alone, team-learning, structured/unstructured learning); physical factors (time of day, verbal or written format); and psychological factors (analytic/global, reflective/impulsive, field dependent/independent cognitive styles).

The **Gregorc Style Delineator** (Gregorc, 1982a) was designed similar to Kolb’s LSI four column format (Kolb, 1976). The instrument is a self-analysis tool, "specifically designed to aid an individual to recognize and identify the channels through which he/she receives and expresses information efficiently, economically, and effectively" (p. 1). These four mediation channels are concrete sequential (CS), concrete random (CR), abstract sequential (AS), and abstract random (AR).
The **Gregorc Style Delineator** is a word matrix instrument that requires an individual to reflect on self by ordering ten sets of four descriptor words. Sets of words were ranked by first impression individual preference responses: "four," most descriptive of self; "three," next most descriptive; "two," next least descriptive, and "one," the least descriptive by individual preference.

The instrument . . . requires the individual to actively connect the words with thoughts and feelings. The words are meant to prompt the individual to bring to life something that the Self sees/hears/experiences. The intensity of the activity is registered and acted upon by the ranking of the words in a 4-3-2-1 order (Gregorc, 1982a, p. 28).

Operational and theoretical definitions of CS, CR, AS, and AR with general descriptive terms are offered by Gregorc (1982a). Operationally defined mediation channels reflect the structure of the instrument. Concrete Sequential (CS) individuals are objective, thorough, realistic, solid, and perfectionists. The Concrete Random (CR) individuals are creative, innovative, perceptive, and practical dreamers. The Abstract Sequential (AS) individuals are evaluative, analytical, logical, oriented toward research and concerned with ideas while the Abstract Random (AR) individuals are generally more sensitive, aware, colorful, empathetic, and person-oriented.

Gregorc (1982a) connects, theoretically, each of four classifications of CS, CR, AS, and AR to a group of attributes. "The attributes make a partial description of an
individual, a person who theoretically fits the category to some degree that exceeds chance" (p. 12).

The Concrete Sequential individual feels at home when working with an agenda, working with people involving precision and detail, and working free from distractions. "The Concrete Sequential individual characterizes himself or herself as ordered and objective" not as "... colorful ... aesthetic or judgmental" (Gregorc, 1982a, p. 13).

The Abstract Sequential individual is comfortable when they have time to study, gather data, ponder varying points of view, and compare and synthesize thoughts. "The Abstract Sequential individual is likely to characterize himself or herself as evaluative, logical, and rational" not as "... insightful, a trouble shooter, intuitive or practical dreamer" (Gregorc, 1982a, p. 14).

The Abstract Random individual needs the flexibility to change their mind and go in another direction with mood shifts. They tend to have free talking agendas that address topics of interest. "The Abstract Random individual is likely to characterize himself or herself as lively and spontaneous" not as "... ordered, realistic, or careful with detail" (Gregorc, 1982a, p. 15).

The Concrete Random individual is comfortable with facts and details, preferably involving multiple projects always searching for relationships to 'tie facts together'. "The Concrete Random individual is likely to characterize
himself or herself as perceptive, experimenting, and risk-taking" not as "... referential, or analytical ... or highly concerned with abstract ideas or statistical proof" (Gregorc, 1982a, p. 15).

Summary of Theory Similarities

From among the leading learning style and brain dominance theorist, the focus of five leaders are depicted in Figure 1.

<table>
<thead>
<tr>
<th>Jung</th>
<th>Kolb</th>
<th>Gregorc</th>
<th>McCarthy</th>
<th>Herrmann</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling</td>
<td>Diverger</td>
<td>Abstract Imaginative</td>
<td>Type I Imaginative</td>
<td>Feeling-Based</td>
</tr>
<tr>
<td>Directed</td>
<td>---</td>
<td>Random Sensitive</td>
<td>Learner</td>
<td>Social Worker</td>
</tr>
<tr>
<td>Intellect</td>
<td>Assimilator</td>
<td>Abstract Sequential</td>
<td>Type II Analytic</td>
<td>Quantitative</td>
</tr>
<tr>
<td>Directed</td>
<td>---</td>
<td>--- Evaluative</td>
<td>Learner</td>
<td>Chemist</td>
</tr>
<tr>
<td>Body Directed</td>
<td>Converger</td>
<td>Concrete Sequential</td>
<td>Type III Common</td>
<td>Organized</td>
</tr>
<tr>
<td></td>
<td>---</td>
<td>--- Realistic</td>
<td>Sense Learner</td>
<td>--- Foreman</td>
</tr>
<tr>
<td>Intuitive</td>
<td>Accommodator</td>
<td>Concrete Random</td>
<td>Type IV Dynamic</td>
<td>Integrative</td>
</tr>
<tr>
<td>Directed</td>
<td>---</td>
<td>--- Creative</td>
<td>Learner</td>
<td>--- Artist</td>
</tr>
</tbody>
</table>

Figure 1. A focus on learning style and brain dominance theorists.
Meeting Instructional and Training Needs

The ultimate purpose and first step in building a learning climate is trainer development. The trainer must then provide preparation for the trainee. Program developers must respond to the wants, needs, and learning styles of trainees. For the programs to be effective, it then becomes incumbent on the trainee to clearly comprehend his or her wants, needs, and learning styles (Sims, 1990).

Jenkins' (1981) study stressed the importance of learning styles on processing information and solving problems in training for the workplace. Using brain dominance theory, she reported that the left hemisphere controls primary rational thoughts, and the right predominantly instinctive thoughts. The findings indicated that development of both cerebral modes are necessary for perceiving and processing information; however, education persists on concentrating on left brain ignoring right brain development. This is corroborated by B. C. Harrison (personal communication July 17, 1991).

Harrison (1986) and Keefe (1988) stated that teachers often teach the way they were taught. They further advocated that teachers need to understand their particular learning style, enabling them to be more flexible and sensitive to the diverse learning style of others.

A study conducted by Mc Daniel (1989), using the Gregorc Style Delineator determined that 63.2% of vocational
educators in Louisiana had a concrete sequential learning style. The concrete sequential learning style preference of teachers by specific areas was: Vocational agriculture (65.1%); home economics (62.3%); and, secondary trade and industry (63.4%). A study conducted in Louisiana by Harrison (1991) based on McCarthy's (1980) application of Kolb's Model, and using Kolb's Learning Style Inventory, identified the preferred learning styles of the 10th through 12th grade students in secondary public schools and post-secondary technical institutes in Louisiana. "Secondary and post-secondary students perceive and process information in all four types of learning styles with little difference between the two school levels noted" (Harrison, 1991, p. 45). However, teachers in secondary schools and instructors in the post-secondary schools in Louisiana were found to have teaching styles unlike the students they serve. (Harrison, 1991).

The importance of selecting the proper instrument according to Dixon (1985) is based on the particular situation in which it will be used and the expected outcome. B. C. Harrison (personal communication July 22, 1991) has further stated that style ranges should be expanded beyond the 'comfort zone.' Ament, L. (1990) noted that the learning style instrument should be selected based on the instructional level. The diagnosis of the learning style is an important aspect yet only a segment of the comprehensive
training program. Cognitive style goes beyond learning situations, and influences personal interaction with others. Bokoros (1990) indicated that personality is a product of cognitive style and these patterns have learning and social style traits.

Bostrom et al (1990) conducted a study on computer training using the MBTI and concluded that individual differences must be considered when designing training. His findings indicated that learning styles in conjunction with appropriate training methods were an important predictor of student achievement. In a computer self-paced instruction study, using the MBTI, Kern and Matta (1987) found that thinking type personalities performed significantly better than feeling type personalities. Enochs (1984), in a study of navy personnel using self-paced and computer-assisted instruction (CAI), determined a relationship between learning style and academic achievement. He concluded that individuals who were more concerned with abstraction scored better in academics than individuals who preferred concreteness.

Dela-Giustina and Deay (1991) enhanced safety training by adapting instruction to accommodate the individual's learning style. The learning style component was effective in conjunction with the other instructional enhancements offered in the program. By identifying, utilizing, and incorporating individual learning styles into training,
Groves (1991) dispelled one of the myths that technical trainees were unable to rival traditional students in acquiring academic skills. Hillman (1989) stressed the importance of choosing trainers who have the ability to adapt and individualize instruction, and match instructional practices with the trainees learning style. He indicated that knowing only teaching skills may hinder success. He advocated that teaching skills, knowledge of the participants skills, and the ability to successfully incorporate this information into training materials, will improve competencies.

A community college study administered by Green (1989) determined that a relationship existed among specific academic majors, students interests and aptitudes and their learning styles. These findings have implications for ongoing counselor/student interaction. Brown (1987) stated that career preparation is enhanced by matching learning environment with learning style. He indicated that determining the method an individual learns is as important for the future as what is actually learned.

Simonson (1985) discussed the media as a medium of persuasion in altering attitudes by the selective use of field dependence and field independence perceptions. The study showed a significant correlation between field independence and film.
Dislocated Workers

The Economic Dislocation and Worker Adjustment Act, Title III, of the federal Job Training and Partnership Act assist workers "... who are unemployed because of plant closing or permanent layoffs". These workers through no fault of their own find they are unemployed "... are unlikely to return to their previous occupation" (Louisiana State Department of Employment and Training, 1991, p. 1).

"Forty percent of the Title III funds are utilized for statewide, regional or industry-wide programs subcontracted from the state level. Sixty percent of the funds are allocated to the eighteen Substate Areas for locally operated programs" (Louisiana DET, 1991, p. 1).

Dislocated workers in Louisiana were provided services that included "assessment, job search assistance, job clubs, job development, placement, job training, remediation, supportive services, pre-layoff assistance and relocation assistance" (Louisiana DET, 1991, p. 1). In addition to these services, Marshall (1986) recommended that the states promote greater cooperation among local service providers, and plan and promote strategies to aid dislocated workers in adjusting to a changing economy.

The dislocated worker services were provided by the LA Job Link Center at Louisiana State University. A unique additional component of the assessment process at this Job Link Center included the identification of the individual
learning style for both staff and dislocated workers. This was done for better understanding of how individuals perceive and process information. The learning style indicators were used by incorporating the information into counseling, learning to learn, training, communication, and placement of dislocated workers. B. C. Harrison (personal communication, September 5, 1990).

Carnevale et al. (1991) emphasized the above areas of focus in his work with the United States Department of Labor. However, no mention of identification of learning styles was included.

Approximately one million United States workers lose their jobs each year as the result of business closures and permanent layoffs (U. S. DOL, 1988), and are faced with the traumatic and difficult task of finding new employment. These workers represent the "... mainstream of America’s workforce and represent virtually every major sector of the economy" (U. S. GAO, Dislocated Workers, 1989, p. 10).

Dislocated workers remain unemployed on an average of more than 14 weeks a year. Productivity loss is estimated at almost $4,500 per worker totalling approximately nine billion dollars lost each year to the United States economy (Deere & Wiggins, 1988). A report from the U. S. Office Of Technology (1986) indicated that about half of the dislocated workers for the period of 1979-1988 were employed part-time or underemployed full-time in lower paying jobs than they had
previously held. The pressures exerted on an individual when job loss occurs affect the physical and mental health of dislocated workers. Prolonged unemployment increases depression, physical ailments, anxiety, chemical abuse, and family conflict.

Cooper (1988) confirmed the government studies indicating that plant closing cause problems in the physical and emotional well-being of the dislocated worker as well as creating financial difficulties. The government and Cooper's findings are corroborated by Podgursky and Swaim (1986) and Garrett (1988). Available monies and expenditures through JTPA reflect the emphasis on training, not on the physical, financial, psychological, and emotional well-being of participants.

The problems identified in a study conducted by Clay (1988) concerning the psychological factors of dislocated workers seeking new employment were stress, poor self concept, anger, futility, depression, and lack of faith in the work ethic. Clay further stated that advance warning about anticipated plant closures would lessen the adverse psychological factors experienced by the workers. Advance warning notification diminishes the impact on self esteem and increases the likelihood of a successful adjustment for employees in a retraining program. Prior notice allows personnel the time to evaluate and set up appropriate assessment and training programs. These findings were
corroborated by Shapira (1986), Noel (1988), Kicinski (1990), and Swaim and Podgursky (1990). The states' role as identified by Marshall (1986) is to assist dislocated workers by helping them adjust to a changing economy and, to promote greater cooperation among local service providers.

Wojcicki and Kaufman (1990) advocated a supportive self participation counseling model that encourages dislocated workers to identify the wants and needs necessary to chart their own course of action. A study by Elston (1988) examined the retraining results of dislocated workers after four years, and indicated that the heterogeneity of the dislocated worker population dictated certain procedures to follow in incorporating retraining programs. Extensive assessment programs concentrating on the diversity of the workers must be employed. Agencies and practitioners must be evaluated to ensure their proficiency in working with the various groups of dislocated workers.

Harrison (1990) advocated counseling services for the dislocated worker to help them work through the multiple problems resulting from the job dislocation. She contends that counselors can provide a non-threatening, accepting atmosphere whereby the dislocated worker can first accept self and the circumstances in which (s)he finds self. Many of these individuals are out of work for the first time since initially entering the workforce. The dislocated worker may need to adjust to his/her changing or changed work
environment and have feedback concerning his/her emotional and personal well-being due to the displacement. Some dislocated workers must take care of today's need for basics of food, clothing, and shelter without regard for long-term planning and preparations. She indicated the need for the counselor to use all the available assessment information and including learning style, to help place the dislocated worker in the appropriate training and development program offering and concurrently, help guide the individual through self analysis of his/her other needs. The dislocated worker can then enhance personal and professional skills through communication, interpersonal skills, learning to learn, specific job training and job enrichment. This, in turn, can lead to greater opportunities for re-entering the workforce while the individual profits the gain in personal worth. It was on this tenet that she established and directed the operations of the Louisiana Job Link Center at Louisiana State University.

Variables Influencing Training

The results of a survey by Podgursky, and Swaim (1986), U.S. GAO (1987), U.S. GAO (1989), U.S. DOL (1991), and Louisiana DET (1991) indicated that a disparity existed among dislocated workers in gender, ethnicity, age, and educational level. Podgursky and Swaim (1986) models of reemployment and post-displacement earnings showed that "... Black and Hispanic workers are over-represented, while women were
under-represented" (p. 5) in the model. This was due in part to Hispanics being in blue collar occupations (high school or less educated) and women being in white collar vocations (college educated). Displaced workers had less education and for the most part, were younger than their non-displaced worker counterparts.

According to the U.S. Government Accounting Office (1987), the characteristics of the dislocated worker participants in the Job Training Partnership Act (JTPA), Title III, programs were: 60% male; 28% minorities; 69% between the age (22-44) with 8% over 55; and, 78% had at least a high school education. The U.S. Government Accounting Office (1989) report of exemplary Title III dislocated worker program demographics revealed that: 61% were female; 10% were minorities; 13% were over 55 years of age; and, 76% had at least a high school education.

The U.S. Department of Labor (1991) report concerning displaced workers focused on data collected between the years of 1985-1989 disclosed the following composition: 61% male; 18% over 55, and 59% were 25-44 years of age. The disclosure of occupational areas included: 23% professional, technical, and managerial; 25% clerical and sales; 5.8% service; 1% agriculture; and, the remaining 45.2% were blue collar production and trades.

In a report issued by the Louisiana State DET (1991), the dislocated workers participating in Title III programs
consisted of 60% women, 36% minorities. Seven percent were 55 years old or older, and 12% were school drop outs.

Garrett (1988) indicated that dislocated workers, especially racial minorities, women, and the elderly, demonstrated poor self-concept, poor family relationships and social interactions, and substance abuse due to plant closures. The loss of employment, according to Zippay (1989), also caused severe and long lasting depression and interpersonal problems hindering retraining and ultimately employment.

The variables of gender, ethnicity, age, educational level, and occupational areas were identified from the literature. Each characteristic will be discussed.

Gender

The following studies and reports describe the variable, gender, using learning styles and demographic characteristics.

A dissimilarity in gender distribution is depicted by the following reports. The U.S. DOL (1991), 61% male; Louisiana DET (1991), 40% male; U.S. GAO (1989), 39% male; and, U.S. GAO (1987), 60% male.

Kreger-Kustiner (1988) investigated women in transition from loss of employment to reemployment. Job loss was determined to be as stressful for men as it was for women. Individuals had a better opportunity of being reemployed when their perspective toward employment and unemployment were
exhibited internally rather than externally. Cognitive style of males and females was investigated by Berthelot (1982). The traditional male programs were studied using the field dependent/field independent distinctions (Witkin, et al, 1979). Field dependents, unlike field independents, had difficulty separating parts from the whole field. Females' perception was determined to be slightly more field dependent, and males' were slightly more field independent. Field-dependents have a propensity toward professions that involve personal interaction, while field-independents prefer more technically oriented endeavors. The findings indicated that learning styles do effect career choices, and teaching methods should be varied to accommodate learning style differences.

A study by Jenkins' and Holley (1991) found that differences occurred in learning style preferences among male and female accounting students. Males preferred learning by contemplation, and females preferred learning by observation. Norris (1985) compared brain dominance of men and women. She determined that women exhibited better balance between the left and right hemispheres of the brain than men. Sperry (1973) espoused that females spatial abilities (primarily a left brain function) were impaired because they tend to process linguistic information with both hemispheres of the brain.
Ethnicity

The following studies and reports describe the variable, ethnicity, using learning style and demographic characteristics.

The percentage of minorities among dislocated workers were: Louisiana DET (1991), 36%; U.S. GAO (1989), 10%; and, U.S. GAO (1987) 28%.

Recent research by Talbot and Geyer (1991) explored the differences in cross-cultural thinking by measuring brain hemispheric preferences. The study indicated that cultural groups do not always demonstrate different preference characterizations; however, these profiles do differ with culture influenced interests.

Toldson (1982) discussed how trainers can adapt materials and methods of instruction utilizing right brain functions in collaboration with left brain functions to help ameliorate black unemployment. Lower performance on educational task by blacks, according to Shade (1982), is partly attributed to their greater perception toward field dependency. He further advocated matching learning styles with life styles to increase performance on tasks.

The learning styles (cognitive and brain hemispheric preferences) of Native American students were examined by Browne (1986). A right hemispheric preference was indicated. As a result of this finding, she recommended utilizing
indigenous language, culture, and learning styles to improve linguistic skills.

Walker (1989) discusses the bias of standardized testing on Southeast Asian (Hmong) students whose learning style precludes peer competition and culture precludes success with test formats. Since these students come from primarily verbal cultures, they experience problems in reading. However, they exhibited early development in memory and fine motor skills. Implications for future programs focused on the need to utilize the developed skills to enhance progress in reading and to improve self-esteem.

Age

The variable, age, is characterized by demographics using the following percentage of dislocated workers who were in the category 55 years of age or older: U.S. DOL (1991), 18%; Louisiana DET (1991), 7%; U.S. GAO (1989), 13%; and, U.S. GAO (1987), 8%. The age group of 25 to 44 years according to U.S. DOL (1991) reported 58.6%, and U.S. GAO (1987) for age group 22-44 years reported 69%.

Merriam (1987) discussed dislocated workers between 36 and 49 years of age, and their perspective on retraining after job loss. She stated that:

Middle-aged students were afraid they would not be able to do the work, felt they were too old, found the program more difficult than expected, disagreed that it was easier than expected, and disagreed (mid-life women only) that they learn more easily now (p. 261).
Age was negatively related to getting a job. However, when the educational level of an individual was high, age was not an appreciable factor (Merriam, 1987; Kinicki, 1989). Fewer workers over 45 years of age will retrain after plant closures than any other age group. The reasons offered by the workers for not retraining were: fear of being unsuccessful in completing training programs; disbelief in training programs substantially improving their lives; and the few years remaining until retirement did not warrant the work and time the retraining would entail (Bartholomew, 1987; Noel, 1988).

**Educational Level**

The studies and reports depicted below are indicators of the demographics and characteristics of educational level/selected data and educational trends.

A Louisiana DET report (1991) indicated that 12% of the state dislocated workers were school dropouts. U.S. GAO (1989) and U.S. GAO (1987) reported 24% and 22% respectively of dislocated workers had less than a high school education.

Dislocated workers with higher levels of education had a better opportunity to find employment, and spent less time locating the new employment than workers with less education. Individuals with more education exhibited a higher level of self confidence in training and retraining programs than individuals with less education. Participation in these programs was directly related to success achieved in previous
adult education courses and workshops. Workers with less formal education questioned their ability to complete training programs (Merriam, 1987; Gagen, 1987; Noel, 1988; Dean, 1989; Swaim & Podgursky, 1989; Kinicki, 1989; and, Bowman, 1990.

**Occupational Areas**

The following studies and reports described the variables, occupational area, using learning style and demographic characteristics.

The U.S. Government Accounting Office (1987) indicated that dislocated workers came from numerous occupational areas; however, 60% were production workers. The U.S. Department of Labor report (1991) indicated: professional, technical, and managerial 23%; clerical and sales 25%; service 5.8%; agriculture 1%; and, blue collar production and trades accounted for the remainder of the occupational areas.

Individual assessment indicates that people in certain occupational areas tend to have learning styles which are descriptive of the processes necessary in that occupational area. The examples based on Herrmann’s (1990) research are:

<table>
<thead>
<tr>
<th>Organizers</th>
<th>Humanitarians</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Planner</td>
<td>Elementary School Teacher</td>
</tr>
<tr>
<td>Media Production</td>
<td>Social Worker</td>
</tr>
<tr>
<td>Artist</td>
<td>Counselor</td>
</tr>
<tr>
<td>Musician</td>
<td>Secretary</td>
</tr>
<tr>
<td></td>
<td>Sales</td>
</tr>
</tbody>
</table>
Innovators
Foreman
Accountant
Operations Manager
Drill Sergeant
Supervising Nurse

Thinkers
Stockbroker
Engineer
Finance Officer
Chemist
CEO (technical)

Summary

The literature has shown that the variables selected for this study are appropriate for investigation. Interdisciplinary findings have confirmed that learning styles have a significant place in the assessment, instructional training, and employment of individuals. No evidence was reported in the literature which focused on learning styles and dislocated workers.
CHAPTER 3
METHODOLOGY

The overall purpose of this study was two-fold: (1) describe dislocated workers by learning styles and selected demographic characteristics and, (2) determine if preferred learning style is independent of participant's last employment occupation area. The general procedure used to achieve the purpose of this study included participant assessment and survey.

This chapter delineates the methods and procedures which were used to guide the researcher. The headings of population and sample, instrumentation, data collection, and data analysis provides focus to the structure of this exploratory descriptive study.

Population and Sample

The target population in this study was dislocated workers in Louisiana. The accessible population was those dislocated workers served by the Louisiana Job Link Center at Louisiana State University during three years of operation, from FY89 through FY91.

Descriptions of dislocated workers and their needs have been found in the literature which support the position that dislocated workers in various areas of a state will be more similar than different (Podgursky and Swaim, 1986; U. S. Office of Technology and Assessment, 1986; Cooper, 1988, DOL,

A simple random sample of dislocated workers was drawn from the accessible population defined for the study. The minimum required sample size of \( n = 232 \) was determined by Cochran's sample size formula as follows:

\[
\frac{(t^2)(p)(q)}{(d^2)} = \frac{(1.98^2)(.5)(.5)}{(.05^2)} = \frac{(3.92)(.25)}{(.0025)} = \frac{0.9801}{0.0025} = n_o = 392
\]

\[
n = \frac{n_o}{N} = \frac{392}{570} = 1.69
\]

\[
n = \frac{392}{1.69} = 232
\]

(Snedecor, et al, 1980).

The population (\( N=570 \)) was based on the LA Job Link Center at LSU annual reports for FY89, FY90, and FY91. This number represents the eligible participants who received services at the LSU Center.

**Instrumentation**

Two instruments were used to collect data for this study. The first of these instruments was a researcher designed recording form. This instrument allowed for the recording of selected demographic characteristics and information taken from the application and intake form which was completed by every Job Link Center participant during the initial intake process. Only after acceptance into the
program which was based on JTPA and DOL established guidelines was the assessment of style instrument used. Codes were used on file data to protect the confidentiality of Job Link Center records and the anonymity of individual participants. At no time did the researcher have access to identified files.

The information concerning the variables of age, gender, ethnicity, educational level, and occupational training according to Dictionary of Occupational Titles (DOT) codes were taken from the Department of Labor Participant Intake Form. From the form, age ranges were identified as less than 25, 26-35, 36-45, 55 or older; gender was identified as either male or female; ethnicity choices were white, black, hispanic, American Indian or Alaskan native, Asian or Pacific Islander. Educational status was identified as school dropout 4th grade or less, 5th grade through 8th grade, 9th grade through 12th grade; high school graduate/GED, post high school, and college graduate. Nine occupational categories of DOT codes listed in the Dictionary of Occupational Titles (DOT) classified as: (1) Professional, technical, and managerial occupations; (2) Clerical and sales occupations; (3) Service occupations; (4) Agricultural, fishery, forestry, and related occupations; (5) Processing occupations; (6) Machine trades occupations; (7) Benchwork Occupations; (8) Structural work occupations; and (9) Miscellaneous occupations were used.
The second instrument used in the study was the **Gregorc Style Delineator** (Gregorc, 1982a). This was a self-analysis tool, "specifically designed to aid an individual to recognize and identify the channels through which he/she receives and expresses information efficiently, economically, and effectively" (p.1). These four channels are abstract random, abstract sequential, concrete sequential, and concrete random.

The **Gregorc Style Delineator** (1982a) used test retest correlation coefficients in establishing reliability (internal consistency and stability). Reliability correlation coefficients for the four channels between the first and second tests were Concrete Sequential 0.85; Abstract Sequential 0.87; Abstract Random 0.88; Concrete Random 0.87. Using scores from the **Gregorc Style Delineator** (1982a), the predictive validity correlation coefficients between scores on individually self-rated characteristic attributes for the first and second test respectively, the results were found to be Concrete Sequential, 0.68 and 0.70; Abstract Sequential, 0.68 and 0.76; Abstract Random, 0.61 and 0.60; and Concrete Random, 0.55 and 0.68 (Gregorc, 1982a).

Following acceptance into the program the style of each dislocated worker in the sample was determined, using the **Gregorc Style Delineator**, at the initial entry into the Job Link Center as a participant. The style research word matrix
instrument required the dislocated worker to order ten sets of four descriptor words (indicators of personal preference). The individual response choices were: "four," most descriptive of self; "three," next most descriptive; "two," next least descriptive, and "one," the least descriptive by individual preference.

**Data Collection**

The learning style of the participants was also identified on the recording form, based on the scores for each of the four channels. Using the recording form, data derived from information accumulated during three years of operation of the Louisiana Job Link Center at LSU (FY 1989, FY 1990, FY 1991) were collected. Each dislocated worker had to make application (DOL Intake Form), and those individuals who qualified for the program (DOL criteria) were assessed for a specific counseling and training or retraining point of departure. Individual files were coded in order that the DOL intake form demographic information for the sample could be obtained. The same routine was followed for the assessment procedure with each individual having equal opportunity to provide accurate information. During the final phase of the assessment process, the style response was given. The style data were obtained using the Gregorc Style Delineator Instrument (1982) in the Job Link Center. Coded identification numbers were used to input data for computer
record keeping and access to file limited to Job Link center staff only.

Data Analysis

The following statistics were used to analyze the data in accordance with the objectives established for the study:

Objective One - The first objective of the study was to describe dislocated workers, who were served by the JTPA sponsored program at the metropolitan Louisiana Job Link Center at LSU on the demographic characteristics of gender, ethnicity, age, educational level, and employment occupational area. Variables measured on a nominal scale (gender, ethnicity, and occupational area) were summarized utilizing frequencies and percentages. Variables measured on the ordinal scale (educational level, and age) were summarized using frequencies, percentages, median, and mode.

Objective Two - The second objective of the study was to identify learning style, as measured by the Gregorc Style Delineator, of dislocated workers who were served by the JTPA sponsored program at the metropolitan Louisiana Job Link Center at LSU. Data were analyzed by determining the frequencies and percentages of individuals' style preference; Concrete Sequential, Abstract Sequential, Abstract Random, and Concrete Random.

Objective Three - The third objective of the study was to compare learning style, as measured by the Gregorc Style Delineator, by selected demographic characteristics of
dislocated workers who were served by JTPA sponsored program at the metropolitan Louisiana Job Link Center at LSU. Variables on which subjects were compared included: gender, ethnicity, age, and educational level. Chi-Square procedures were used to compare learning styles by selected demographic characteristics.

Objective Four - The fourth objective of the study was to determine if style, as measured by the Gregorc Style Delineator, of dislocated workers who were served by the JTPA sponsored program at the metropolitan Louisiana Job Link Center at LSU was independent of selected occupational area. Chi-Square procedures were used to determine if style was independent of occupational area.

The Chi-Square test of independence determined statistical significance at the .05 alpha level. These findings are delineated in the following chapter.
CHAPTER 4

FINDINGS OF THE STUDY

The purpose of this chapter is to present the data and the results. These are offered according to the objectives of the study.

Objective One: Demographic Characteristics

The first objective of the study was to describe dislocated workers, who were served by the JTPA sponsored program at the metropolitan Louisiana Job Link Center at LSU on the demographic characteristics of gender, ethnicity, age, educational level, and last employment occupational area. Variables measured on a nominal scale (gender, ethnicity, and occupational area) were summarized utilizing frequencies and percentages. The variables measured on the ordinal scale (educational level, and age) were summarized using frequencies, percentages, median, and mode. Each variable will be addressed in the following paragraphs.

Gender

Of the total number (n=235) of dislocated workers in the study, 50.6% (119) were male and 49.4% (116) were female.

Ethnicity

Two ethnic groups comprised 98% of the total dislocated worker participants in the JLC program. The white dislocated workers numbered 134 (57.1%), and black dislocated workers numbered 96 (40.9%). The remaining groups of Hispanic (3), American Indian or Alaskan Native (1), and Asian or Pacific
Islander (1) comprised only 2% ($n = 5$) of the total sample ($n = 235$).

**Age**

Age range groups were summarized as follows: less than 25 years of age (18 or 7.7%); 26-35 (83 or 35.3%); 36-45 (78 or 33.2%); 46-55 (44 or 18.8%); and, 55 or older (12 or 5%).

**Educational Level**

Fewer than 10% of the dislocated workers in the JLC Program had less than a high school education. Seventeen percent of the participants were college graduates. (See Table 1).

**Last Employed Occupational Area**

Over 40% of the JLC participants entered the program after having been dislocated from the occupational category of clerical and sales. About two-thirds of all participants were dislocated from occupations in the two major categories of professional/technical/managerial and clerical/sales. Approximately 16% of the participant group came from occupational skill areas. (See Table 2).

**Objective Two: Learning Styles**

The second objective was to identify learning style, as measured by the Gregorc Style Delineator, of dislocated workers who were served by the metropolitan JTPA sponsored program at the Louisiana Job Link Center (JLC) at LSU. Those descriptors used by Gregorc included abstract random,
Table 1

Highest Level of Education of Dislocated Workers

<table>
<thead>
<tr>
<th>Education Level</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>School Drop-out</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4th Grade or less</td>
<td>1</td>
<td>.4</td>
</tr>
<tr>
<td>5th-8th Grade</td>
<td>21</td>
<td>8.2</td>
</tr>
<tr>
<td>9th-12th Grade</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>High School Graduate/GED</td>
<td>71</td>
<td>32.1</td>
</tr>
<tr>
<td>Post High School</td>
<td>100</td>
<td>42.3</td>
</tr>
<tr>
<td>College Graduates</td>
<td>42</td>
<td>17.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>235</td>
<td>100</td>
</tr>
</tbody>
</table>

abstract sequential, concrete sequential, and concrete random.

Concrete sequential (145 or 61.7%) dominated the ways by which JLC dislocated workers perceive and process information. The remaining three channels were more equally distributed among the participants. (See Table 2).
Table 2

**Last Employed Occupational Categories of Dislocated Workers**

<table>
<thead>
<tr>
<th>Occupations (DOT)</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clerical and Sales</td>
<td>100</td>
<td>42.5</td>
</tr>
<tr>
<td>Professional, technical, and managerial</td>
<td>53</td>
<td>22.6</td>
</tr>
<tr>
<td>Service</td>
<td>35</td>
<td>14.9</td>
</tr>
<tr>
<td>Agricultural</td>
<td>1</td>
<td>.4</td>
</tr>
<tr>
<td>Processing</td>
<td>8</td>
<td>3.4</td>
</tr>
<tr>
<td>Machine Trades</td>
<td>3</td>
<td>1.3</td>
</tr>
<tr>
<td>Benchwork</td>
<td>4</td>
<td>1.7</td>
</tr>
<tr>
<td>Structural Work</td>
<td>24</td>
<td>10.2</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>7</td>
<td>3.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>235</td>
<td>100</td>
</tr>
</tbody>
</table>

**Objective Three: Learning Style by Demographic Characteristics**

The third objective of the study was to compare learning style, as measured by the Gregorc Style Delineator, by the demographic characteristics of dislocated workers who were served by JTPA sponsored program at the metropolitan
Table 3

Learning Style of Dislocated Workers

<table>
<thead>
<tr>
<th>Learning Style</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete Sequential (CS)</td>
<td>145</td>
<td>61.7</td>
</tr>
<tr>
<td>Concrete Random (CR)</td>
<td>33</td>
<td>14.0</td>
</tr>
<tr>
<td>Abstract Random (AR)</td>
<td>30</td>
<td>12.9</td>
</tr>
<tr>
<td>Abstract Sequential (AS)</td>
<td>27</td>
<td>11.4</td>
</tr>
</tbody>
</table>

Total 235 100

Louisiana Job Link Center at LSU. Demographic variables by which subjects were compared included: gender, ethnicity, age, and educational level. Since learning style was measured on a nominal scale the Chi-Square test of independence was used for analysis.

Learning Style by Gender

The Chi-Square test of independence was used to determine if the variables of learning style and gender were independent. Examination of the results \( \chi^2 (3) = 2.20, p = .42 \) revealed that the variables were independent. (See Table 4).
Table 4

Learning Style by Gender of Dislocated Workers

<table>
<thead>
<tr>
<th>Learning Style</th>
<th>Male</th>
<th></th>
<th>Female</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete Sequential (CS)</td>
<td>76</td>
<td>63.8</td>
<td>69</td>
<td>59.5</td>
</tr>
<tr>
<td>Concrete Random (CR)</td>
<td>17</td>
<td>14.2</td>
<td>16</td>
<td>13.8</td>
</tr>
<tr>
<td>Abstract Random (AR)</td>
<td>11</td>
<td>9.3</td>
<td>19</td>
<td>16.4</td>
</tr>
<tr>
<td>Abstract Sequential (AS)</td>
<td>15</td>
<td>12.7</td>
<td>12</td>
<td>10.3</td>
</tr>
<tr>
<td>Total</td>
<td>119</td>
<td>100</td>
<td>116</td>
<td>100</td>
</tr>
</tbody>
</table>

Note. $\chi^2 (3) = 2.20, p = .42.$

Learning Style by Ethnicity

Since 98% of the JLC participants were either white or black they were the only ones used in the analysis. The Chi-Square test of independence was used to determine if the variables of learning style and ethnicity were independent. Examination of the results ($\chi^2 (3) = 5.89, p = .12$) revealed that the variables were independent. (See Table 5)
Table 5

Learning Style by Ethnicity of Dislocated Workers

<table>
<thead>
<tr>
<th>Learning Style</th>
<th>White</th>
<th></th>
<th>Black</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
</tr>
<tr>
<td>Concrete Sequential (CS)</td>
<td>80</td>
<td>59.7</td>
<td>62</td>
<td>64.6</td>
</tr>
<tr>
<td>Concrete Random (CR)</td>
<td>23</td>
<td>17.1</td>
<td>8</td>
<td>8.3</td>
</tr>
<tr>
<td>Abstract Sequential (AS)</td>
<td>12</td>
<td>9.0</td>
<td>15</td>
<td>15.6</td>
</tr>
<tr>
<td>Abstract Random (AR)</td>
<td>19</td>
<td>14.2</td>
<td>11</td>
<td>11.5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>134</td>
<td>100</td>
<td>96</td>
<td>100</td>
</tr>
</tbody>
</table>

Note. $\chi^2 (3) = 5.89, p = .12$.

Learning Style by Age

The Chi-Square test of independence was used to determine if the variables of learning style and age were independent. Examination of the results ($\chi^2 (12) = 16.30, p = .18$) revealed that the variables were independent. (See Table 6)
Table 6

Learning Style by Age of Dislocated Workers

<table>
<thead>
<tr>
<th>Age Range</th>
<th>&lt;25</th>
<th>26-35</th>
<th>36-45</th>
<th>46-55</th>
<th>&gt;55</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>8</td>
<td>47</td>
<td>46</td>
<td>34</td>
<td>10</td>
<td>145</td>
</tr>
<tr>
<td>%</td>
<td>44.4</td>
<td>56.6</td>
<td>59.0</td>
<td>77.3</td>
<td>83.4</td>
<td>61.7</td>
</tr>
<tr>
<td>Sequential</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete</td>
<td>4</td>
<td>12</td>
<td>13</td>
<td>3</td>
<td>1</td>
<td>33</td>
</tr>
<tr>
<td>%</td>
<td>22.2</td>
<td>14.5</td>
<td>16.7</td>
<td>6.8</td>
<td>8.3</td>
<td>14</td>
</tr>
<tr>
<td>Random</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstract</td>
<td>4</td>
<td>10</td>
<td>13</td>
<td>2</td>
<td>1</td>
<td>30</td>
</tr>
<tr>
<td>%</td>
<td>22.2</td>
<td>12.0</td>
<td>16.7</td>
<td>4.5</td>
<td>8.3</td>
<td>12.8</td>
</tr>
<tr>
<td>Random</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Abstract</td>
<td>2</td>
<td>14</td>
<td>6</td>
<td>5</td>
<td>0</td>
<td>27</td>
</tr>
<tr>
<td>Sequential</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>11.1</td>
<td>16.9</td>
<td>7.7</td>
<td>11.4</td>
<td>0</td>
<td>11.5</td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>83</td>
<td>78</td>
<td>44</td>
<td>12</td>
<td>235</td>
</tr>
<tr>
<td>%</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>

Note. $\chi^2 (12) = 16.30$, p = .18
Learning Style by Educational Level

The Chi-Square test of independence was used to determine if the variables of learning style and educational level were independent. Examination of the analysis of results \((\chi^2 (9) = 21.93, p = .009)\) revealed that the variables were not independent. A lower proportion of college graduates (40%) were found to have a preference for the concrete sequential learning style channel (CS) than all other educational levels (post secondary, 63%; high school/GED, 67%; and fifth through eighth grade, 76%). (See Table 7).

Objective Four: Learning Style by Last Employed Occupation (DOT)

The fourth objective was to determine if the learning style, measured by the Gregorc Style Delineator, of dislocated workers who were served by the metropolitan JTPA sponsored program at the Louisiana Job Link Center (JLC) at LSU is independent of selected occupational area.

The Chi-Square test of independence was used to determine if the variables of learning style and last employed occupation area were independent. Examination of the results \((\chi^2 (9) = 14.57, p = .10)\) revealed that the variables were independent.
Table 7

Learning Style by Educational Level of Dislocated Workers

<table>
<thead>
<tr>
<th>Learning Style</th>
<th>5th-8th Grade</th>
<th>High School</th>
<th>Post High School</th>
<th>College Graduate</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
</tr>
<tr>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Concrete</td>
<td>16</td>
<td>48</td>
<td>63</td>
<td>17</td>
<td>144</td>
</tr>
<tr>
<td>Sequential</td>
<td>76.1</td>
<td>67.6</td>
<td>63.0</td>
<td>40.5</td>
<td>61.5</td>
</tr>
<tr>
<td>Concrete</td>
<td>1</td>
<td>8</td>
<td>17</td>
<td>7</td>
<td>33</td>
</tr>
<tr>
<td>Random</td>
<td>4.8</td>
<td>11.3</td>
<td>17.0</td>
<td>16.7</td>
<td>14.1</td>
</tr>
<tr>
<td>Abstract</td>
<td>3</td>
<td>12</td>
<td>8</td>
<td>7</td>
<td>30</td>
</tr>
<tr>
<td>Random</td>
<td>14.3</td>
<td>16.9</td>
<td>8.0</td>
<td>16.7</td>
<td>12.8</td>
</tr>
<tr>
<td>Abstract</td>
<td>1</td>
<td>3</td>
<td>12</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>Sequential</td>
<td>4.8</td>
<td>4.2</td>
<td>12.0</td>
<td>26.1</td>
<td>11.6</td>
</tr>
<tr>
<td>Total</td>
<td>21</td>
<td>71</td>
<td>100</td>
<td>42</td>
<td>234</td>
</tr>
</tbody>
</table>

Note. Eliminated three categories: school drop-out; 4th grade or less; and, 9th-12th grade. $\chi^2 (9) = 21.93$, $p = .009$. 
Summary of Significant Finding

Results of the Chi-Square test of independence revealed that the variables learning style and education level were not independent, $\chi^2 (9) = 21.93$, $p = .009$. $n = 234$. A lower proportion of college graduates had a concrete sequential learning style channel. In addition, a higher proportion of college graduates preferred the abstract sequential learning style channel. (See Table 8)
Table 8
Learning Style by Last Employed Occupation (DOT) of Dislocated Workers

<table>
<thead>
<tr>
<th>Learning Style</th>
<th>Professional</th>
<th>Technical</th>
<th>Managerial</th>
<th>Clerical</th>
<th>Sales</th>
<th>Service</th>
<th>Trades</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Concrete Sequential</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td>n</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Concrete Random</td>
<td>29</td>
<td>64</td>
<td>21</td>
<td>25</td>
<td>139</td>
<td>54.7</td>
<td>64.0</td>
<td>60.1</td>
</tr>
<tr>
<td></td>
<td>24.5</td>
<td>8</td>
<td>4</td>
<td>7</td>
<td>32</td>
<td>9.4</td>
<td>19.0</td>
<td>11.4</td>
</tr>
<tr>
<td>Abstract Random</td>
<td>5</td>
<td>19</td>
<td>4</td>
<td>2</td>
<td>30</td>
<td>9.4</td>
<td>19.0</td>
<td>11.4</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>5</td>
<td>26</td>
<td>11.4</td>
<td>9.0</td>
<td>17.1</td>
</tr>
<tr>
<td>Total</td>
<td>53</td>
<td>100</td>
<td>35</td>
<td>39</td>
<td>227</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Due to size and similarities of DOT categories, eliminated agricultural and miscellaneous; and, established the category, trade, by combining the DOT categories of processing, machine trades, benchwork, and structural. \( \chi^2 (9) = 14.57, p = .10. \)
CHAPTER 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to describe dislocated workers by learning styles and selected demographic characteristics, and to determine if the preferred learning style is independent of those variables.

The general procedure used to achieve this purpose included participant assessment and survey. The target population was dislocated workers in Louisiana. The accessible population was those dislocated workers served by the Louisiana Job Link Center at Louisiana State University during three years of operation from FY89 through FY91.

A simple random sample of dislocated workers was drawn from the accessible population. The minimum required sample size was determined using Cochran's sample size formula.

Data were collected using a researcher designed recording form and the Gregorc Style Delineator (GSD) (1982a). The self analysis style research word matrix of the GSD instrument identifies the four channels through which an individual perceives and processes information. All data were collected at the Job Link Center over a three year period.

Data analysis were organized and reported by the objectives of the study. Descriptive statistics were calculated for data related to objectives one and two. The nominal, and ordinal, data were reported using frequencies,
and percentages. Chi-Square test of independence was used for objectives three and four.

The summary of the findings are the basis for the conclusions drawn, and recommendations made, by this researcher. They were organized by objectives and related sections with other congruent or incongruent research findings noted.

**Objective One: Demographic Characteristics**

Describe the dislocated workers who were served by the Job Training Partnership Act (JTPA) sponsored program at the metropolitan Louisiana Job Link Center at LSU (JLC) by the demographic characteristics of gender, ethnicity, age, educational level, and last-employed occupational area.

Dislocated workers were almost equally represented by males and females. This conclusion is based on the finding that of the total number (n=235) of dislocated workers in the study, 119 (50.6%) were male, and 116 (49.4%) were female. This is generally consistent with other reports. Studies by U.S. DOL (1991), Louisiana DET (1991), U.S. GAO (1989), and, U.S. GAO (1987) reported groups of dislocated workers which ranged from a slightly higher proportion of females to a slightly higher proportion of males in composition.

The majority of dislocated workers were black and white. This conclusion is based on the finding that white ethnic individuals comprised 57.1% (or 134) and black ethnic individuals made up 40.9% (or 96) of the dislocated workers.
Other minorities were not represented in substantial numbers. This conclusion is based on the finding that only two ethnic groups, white and black, comprised 98% of the total dislocated worker participants in the JLC program. This is inconsistent with the findings of the U.S. GAO (1987) where they found 10% of the dislocated workers were from ethnic groups other than black and white.

Dislocated workers represent all ages and age groups. This conclusion is based on the finding that the age of the dislocated workers in the JLC ranged from 19 to 71 years.

The age group most often dislocated are those who are in their mid-years of work life. This conclusion is based on the findings that (161 or 68.5%) of dislocated workers were in the age range of 26-45 years of age. This is congruent with the literature. The age group of 25 to 44 years, according to U.S. DOL (1991), was reported to be 58.6%, and U.S. GAO (1987) reported 69% for the age group of 22-44 years.

Most dislocated workers have at least a high school education. This conclusion is based on the findings that 32.1% of the JLC participants had a high school education and an additional 59.3% of the dislocated workers had post secondary education and/or college degree(s). These findings are even higher that those identified by the U. S. Government reporting offices. The U.S. GAO (1989) and U.S. GAO (1987) reports indicated that 76% and 78% respectively of dislocated
workers had a high school or higher level of education. The post high school category contained the median and the mode.

The highest number of dislocated workers was from jobs in clerical and sales. This conclusion is based on the following findings: Individuals representing occupational categories of clerical and sales (100 or 42.5%) and professional/technical/managerial (53 or 22.6%) comprised approximately two-thirds of all participating dislocated workers; Occupational skill areas accounted for 39 (16.6%) of the participants in the sample. This was incongruent with the U.S. Government Accounting Office (1987), which indicated that 60% of dislocated workers were production workers. The U.S. Department of Labor report (1991) indicated: professional, technical, and managerial 23%; clerical and sales 25%; service 5.8%; agriculture 1%; and, blue collar production and trades accounted for the remainder of the occupational areas.

Since selected demographic findings from this study have been both consistent and inconsistent with previous reports and studies found in the literature, this researcher recommends that variables from this study be used in future research to determine if this sample is typical or atypical.

**Objective Two: Learning Styles**

Identify the learning style, as measured by the Gregorc Style Delineator, of dislocated workers who were served by
the metropolitan JTPA sponsored program at the Louisiana Job Link Center at LSU (JLC).

The majority of dislocated workers possess a concrete sequential learning style channel. This conclusion is based on the finding that the concrete sequential (145 or 61.7%) learning style was the most represented among the dislocated workers. Abstract random (30 or 12.9), abstract sequential (27 or 11.4%) and concrete random (33 or 14%) comprised the preferred learning channel by the remainder of the 235 individuals in the sample.

No other studies using learning style and dislocated workers were reported in the literature to which a comparison with this study could be made. Additional research is needed to answer the following question: Are learning style of dislocated workers similar or dissimilar to non-dislocated workers?

**Objective Three: Learning Style by Demographic Characteristics**

Compare learning style, as measured by the Gregorc Style Delineator, by the demographic characteristics of dislocated workers who were served by the metropolitan JTPA sponsored program at the Louisiana Job Link Center at LSU.

Learning style preferences of males and females are similar. This conclusion is based on the results of the Chi-Square test of independence which revealed that the variables
learning style and gender were independent, \( \chi^2 (3) = 2.20, p = .42. \) \( n = 235. \)

Male and female dislocated workers tend to have concrete sequential learning styles. This conclusion is based on the finding that 59.5% (or 69) of the female dislocated workers were concrete sequential whereas 63.8% (or 76) of the males were concrete sequential.

More females than males were abstract random. This conclusion is based on the finding that more female (19 or 16.4%) than male (11 or 9.3%) dislocated workers were abstract random. No studies were found in the literature which addressed the association between learning style and gender of dislocated workers.

Learning style preferences were similar among the ethnic groups. This conclusion is based on the results of the Chi-Square test of independence which revealed that the variables learning style and ethnicity were independent, \( \chi^2 (3) = 5.89, p = .12. \) \( n = 230. \) The majority of black (62 or 64.4%) and white (80 or 59.7%) dislocated workers preferred the concrete sequential learning style channel. However, more black (15 or 15.6%) than white participants (12 or 9%) were abstract sequential. More white (23 or 9.8%) than black (8 or 8.3%) participants were concrete random. Other ethnic differences included: Abstract random - black (11 or 11.5%) and white (19 or 14.2%). All other categories (5 or 2%) - Hispanic
(3), American Indian or Alaskan native (1), Asian or Pacific Islander (1) - were not considered in the data analysis.

This researcher recommends that further research be done using the variables, learning style and ethnicity, to determine if other ethnic groups are congruent or incongruent with the findings of this study. No studies were found in the literature which addressed learning style and ethnicity of dislocated workers.

No one learning style channel is preferred by dislocated workers who are in a particular age category. This conclusion is based on the results of the Chi-Square test of independence which revealed that the variables learning style and age were independent \(\chi^2 (12) = 16.30, p = .18\). \(n = 235\). However, it seemed appropriate to the researcher to note that older dislocated workers tended to prefer the concrete sequential learning style channel. This conclusion is based on the findings that 80% of the 44 dislocated workers, 46 years old and older, preferred the concrete sequential learning style channel. It is recommended that additional data be collected to determine if older dislocated workers in other studies prefer the concrete sequential learning channel. Additionally, it is recommended that research be conducted to determine if the findings of this study hold true for other special populations.

Dislocated workers with higher levels of education have a greater diversity of learning style. This conclusion is
based on the results of the Chi-Square test of independence which revealed that the variables, learning style and education level, were not independent, \( \chi^2 (9) = 21.93, p = .009 \). \( n = 234 \). A lower proportion of college graduates preferred the concrete sequential learning style channel while a higher proportion were abstract sequential.

Since no studies were found in the literature which addressed the learning style and level of education of dislocated workers, further investigation of this variable is recommended. Specific questions which might be investigated include: Why do dislocated workers with higher levels of education have a greater diversity of learning styles than less educated individuals? Are college graduates preferred learning style influenced by curriculum and/or teaching methods in higher education?

**Objective Four: Learning Style by Last Employed Occupation (DOT)**

Determine if the learning style, as measured by the Gregorc Style Delineator, of dislocated workers who were served by the metropolitan JTPA sponsored program at the (JLC) is independent of selected occupational area.

No one learning style channel is preferred by individuals who work in a particular occupational category. This conclusion was based on the Chi-Square test of independence. The variables, learning style and last
employed occupation (DOT), were independent $\chi^2 (9) = 14.57$, $p = .10$. $n = 227$.

No studies were found in the literature which addressed learning style and occupations of dislocated workers. However, Herrmann (1990) using his Brain Dominance Instrument found that individuals in certain occupational areas tend to have learning styles which are descriptive of the processes necessary in that occupational area.

This author recommends that further research be done using the variables learning style and occupations to determine if this inconsistency with previous findings can be substantiated. The researcher further recommends that the following questions be investigated: Do dislocated workers tend to gravitate to compatible occupational areas? Do individuals in the professional, technical, and managerial occupational areas have a more diverse learning style?
REFERENCES


Harrison, B. C. (1990, August). Helping dislocated workers through the LA Job Link Center at LSU. Paper presented at the American Association of Training and Development Chapter Program Meeting, Baton Rouge, LA.


January 30, 1992
Dr. Betty C. Harrison
Director, LA Job Link Center at LSU
School of Vocational Education
South Stadium Drive
Baton Rouge, LA 70803

Dear Dr. Harrison:

We have had many discussions concerning a shared common interest in our work with special populations and learning styles. I now have more academic preparation which support my experiences and currently, my research interest is pointing to investigating selected variables involving a special population.

I have observed the special population of dislocated workers in the LA Job Link Center at LSU, and many questions have come to mind which I believe need answers. The demographic variables I want to investigate are: gender, ethnicity, age, educational level, and occupational areas. Also, I am interested in the learning style preference of the dislocated workers. I haven’t found anything in the literature which has addressed learning styles and dislocated workers.

In order to carry out the research, I will need to access information you have in the Job Link Center. Would that be possible?

Sincerely,

Samuel L. Harvill, Sr.
Doctoral Student
February 6, 1992

Mr. Sam Harvill
375 West Roosevelt Street, Apt. 1230
Baton Rouge, LA 70802

Dear Mr. Harvill:

Your inquiry requesting use of selected data collected from participants of the Louisiana Job Link Center at Louisiana State University for the purpose of research is acknowledged. The records have been coded to protect the confidentiality of the Job Link Center records and the anonymity of individual participants. I cannot release the raw data to you, but I am willing to access the selected items you need through the coding system while you place the information on a recording form.

Please contact me to determine an appropriate time frame for the purpose indicated in your letter of request. Your research interest in the dislocated workers and learning styles are appropriate use of the data uniquely found in the Center. I, too, am interested in the variables you mentioned.

Sincerely,

Betty C. Harrison, Ph.D., Director

LA Job Link Center at LSU
APPENDIX C

RESEARCHER-DESIGNED DATA RECORDING FORM

_____ Dislocated Worker ID#

Age  (1) <25  (2) 26-35  (3) 36-45  (4) 46-55  (5) >55

Gender  (1) Male  (2) Female

Ethnicity  (1) White  (2) Black  (3) Hispanic  (4) American Indian
          or Alaskan native  (5) Asian or Pacific Islander

Education  (1) School drop-out  (2) 4th or less  (3) 5th-8th
          (4) 9th-12th  (5) H. S. Graduate/GED  (6) Post High School
          (7) College Graduate

Occupations
  (1) Professional, technical, and managerial occupations
  (2) Clerical and sales occupations
  (3) Service occupations
  (4) Agricultural, fishery, forestry, and related occupations
  (5) Processing occupations
  (6) Machine trades occupations
  (7) Benchwork Occupations
  (8) Structural work occupations
  (9) Miscellaneous occupations

Learning Styles
  (1) AR  (2) AS  (3) CS  (4) CR

Note: Provide information for blanks or circle # in each highlighted category.
The *Gregorc Style Delineator* Research Instrument used in this study is copyrighted (1982).

All rights reserved. No part of the instrument can be reproduced or transmitted in any form or by any means, including photocopying, without the written authorization of the copyright owner, except where permitted by law. (Gregorc, 1982, Cover)

Permission to use the *Gregorc Style Delineator* was granted to the Director of the Louisiana Job Link Center at Louisiana State University for research purposes. This instrument is published by Gregorc Associates, Inc., Post Office Box 351, Columbia, CT 06237-9405.
VITA

Samuel Lewis Harvill, Sr. is a native Georgian. He graduated from Decatur High School, Decatur, Georgia where he held several elected class offices. He received a baccalaureate degree with highest honors in Criminal Justice from the University of Southern Mississippi in 1985, and a Master of Education in Special Education degree from the University of Southern Mississippi in 1990.

Sam's professional career consisted of 21 years in the United States Coast Guard with assignments that included personnel manager, instructor, and other duties involving liaison with federal, state, and local agencies. He retired as a chief warrant officer.

Sam taught social studies in a parochial school system before accepting a position as Vocational Resource Educator. The latter position, with a wide range of duties, was with a federally funded, state administered, three year project that provided ancillary services to both students with special needs who were mainstreamed into vocational education programs and their instructors. Other responsibilities included: the development and implementation of a vocational assessment system to assist school personnel in planning education and career programs for individual students and the school district; the provision of in-service training, both in the classroom and the laboratory, for instructors in recognizing and accommodating the diversity of the students with special

84
needs; the coordination and facilitation of transition for special needs students from academics to vocational education, and employment with school staff, families, community support services and employers; the provision of follow-up with personnel working with students to insure continuity of services and to maintain student progress; the development of work study and competitive employment opportunities with appropriate support services; and, the development and management of workshops with special needs and vocational education faculty on identification, assessment, and motivation of students. Sam has been a special needs workshop presenter at several regional conferences.

While pursuing a doctorate at Louisiana State University, Sam helped coordinate and instruct teacher certification courses in Vocational Trade and Industrial Education. He was instrumental in developing and revising curriculum for special needs courses.

Sam currently resides in Waveland, Mississippi, with his wife Pat. They have been married 15 years. He has a daughter, Jana, and two sons, Sam Jr., and Corey. He also has two grandsons, Samuel III and Austin.
DOCTORAL EXAMINATION AND DISSERTATION REPORT

Candidate: Samuel Lewis Harvill, Sr.

Major Field: Vocational Education

Title of Dissertation: Learning Styles and Selected Demographic Characteristics of Dislocated Workers

Approved:

[Signatures]

Major Professor and Chairman

Dean of the Graduate School

EXAMINING COMMITTEE:

[Signatures]

Date of Examination: March 31, 1993