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A PILOT TEST OF THE CAREER ADJUSTMENT AND
DEVELOPMENT INVENTORY AS A CAREER
NEEDS ANALYSIS TECHNIQUE

by

Richard W. Zinser

A Dissertation
Submitted to the
Faculty of The Graduate College
in partial fulfillment of the
requirements for the
Degree of Doctor of Education
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and Counseling Psychology

Western Michigan University
Kalamazoo, Michigan
December, 1988

A PILOT STUDY OF THE CAREER ADJUSTMENT AND
DEVELOPMENT INVENTORY AS A CAREER
NEEDS ANALYSIS TECHNIQUE

Richard W. Zinser, Ed.D.

Western Michigan University, 1988

A review of the career development literature in current journals revealed several important trends that accentuate the need for additional career services for working adults. Moreover, assessment techniques currently used are transparent and rely mainly on participants' self perceptions. A new career inventory (Crites, 1982), which is based on a taxonomy of adult career problems, has been developed to measure the career adjustment of establishment stage individuals. The instrument was developed as a more effective assessment instrument for the purpose of uncovering employee needs, and for designing appropriate career development programs.

The Career Adjustment and Development Inventory (CADI) was administered to a manufacturing company's management group at four separate locations. The results were reported for four dependent variables: (1) location, (2) years of service, (3) gender, and (4) age. Significant differences were found on the level of career adjustment between the locations, but not for years, gender, or age. Scores on two of the scales, Career Advancement and Career Planning, were consistently lower across all of the

groups.

Internal norms were also created as a result of the research. A comparison to an earlier testing of the inventory showed that the results followed the same task/time sequence of the career development continuum for this career stage, meaning that particular competencies were mastered at certain phases of the stage, as the theory predicted (Campbell et al., 1979).

A process evaluation was conducted to determine the effectiveness of the assessment. Focused discussion groups were used to elicit evaluative comments from the sample, and a process log was kept to make observations on the use of the instrument. A meta-evaluation was also conducted which yielded generally favorable results.

The Career Adjustment and Development Inventory holds promise as a needs analysis tool because it successfully measured the adjustment levels of a diverse sample. It also uncovered specific developmental needs of both the individuals and the groups. More importantly, the use of the CADI provides a more comprehensive analysis of the critical career behaviors of the establishment stage, and goes beyond the simple measurement of the amount of career activities in the organization.

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as a career needs analysis technique**

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Western Michigan University, 1988

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Richard W. Zinser

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CHAPTER I

THE PROBLEM AND ITS BACKGROUND

When we study careers it quickly becomes evident that we also are studying contemporary employee aspiration, expectation and commitment levels, and the human needs and values people bring to their work (Leach, 1980).

Introduction

There are several important trends affecting today's workers and organizations. Persons identified as the "baby-boom" generation (those children born in the United States between the years 1946 and 1961) are now working in full force; they are better educated and have different values than their mentors (Johnston, 1986). The increasing supply of qualified contenders for a decreasing number of positions in middle and upper management is causing career advancement dilemmas to intensify (Leach & Chakiris, 1985). In addition, the goal orientation people held 15 or 20 years ago is being replaced by an identity orientation (Blessing, 1986). This means that people are more interested in who they are, and want their employers to provide fulfilling experiences.

Organizations are unable to satisfy the demands for a share of the decision-making that employees often seek; upward progress is eliminated, not because of performance

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failure, but because organizational structure is becoming flatter and more inflexible (Dawson, 1983). Satisfaction with the organization is now becoming more dependent on the employee's estimate of what the future holds than on the present situation (Winterscheid, 1980).

Career concerns are often life issues that go beyond work, and are not simply a question of the next job. In fact, career questions "have become the white-collar employee's grievance procedure" (Blessing, 1986, p. 49). The career complaints heard in organizations today are thinly disguised frustrations of other aspects of the company's practices.

Thus, the study of adult career adjustment is reaching epic importance. There is an entire generation of people in organizations who are struggling with these and other concerns. How are they adapting? Hall (1986) has issued a call for specific research aimed at adaptive qualities such as resilience, insight, and identity of employees in this situation. "Career research should examine how employees effectively adjust to periods of transition and stability at different career stages" (p. 42). There are many surveys of organizations in the literature to determine current career practices, but little research is available that would illustrate the effectiveness of programs, or how the employees themselves are coping. Indeed, the literature shows that adults are not knowledge-

able of the career planning process (Getty, 1986), and thus, are unprepared to deal with its implied challenges. The study of adult career problems at Ohio State University (Campbell et al., 1979) clearly suggests that a general public education of adults in the process of adult career development would reduce the stress or severity of career problems. However, there have been few systematic studies of coping techniques identifying the adjustment process of adults.

Traditional vocational development theory has concentrated primarily on adolescents. Hanson (1977) has complained that little is known about the continuous developmental nature of adults, and that the "behaviors and attitudes of the work role remain relatively unexplained" (p. 444). Yet "work activity is for adults a medium through which they seek development as a part of the adult life process... Work does appear to be central to the life of the individual, and basic self-esteem highly correlates to career satisfaction and success" (Hanson, 1977, p. 444).

According to Leach (1981) the definition of career success needs to be redefined to include:

1. Belonging: the need for identification with the company, profession, etc.
2. Growth: the need to stretch one's abilities and improve overall competence.
3. Self-esteem: the need to achieve a sense of self-adequacy, that one's efforts are worthwhile.
4. Personal significance: the need for meaning and

purpose in life through one's work. (p. 283) ✓
Thus, for today's dominant generation in the workplace, "getting ahead" is not always moving up; psychologically, career success can take place in the existing job or position, provided the above criteria are fulfilled.

The new values frequently described in the literature are now having an impact on organizations. The demands for more autonomy, self-development, entrepreneurship, and a balance between work and family life certainly enter into the equation with as yet undetermined consequences. As Hall has pointed out (1986), mid-career now comes earlier, in the late twenties and early thirties. This change, among other things, is causing what Hall refers to as the "protean" orientation: a move toward more self-reliance, more honest self-assessment. Employees may reject a promotion if it is not in line with their own lifestyle or that of their spouse. There is much less unquestioning acceptance of the company's directions and plans for its employees.

It is clear that employees want and need assistance in their career concerns in the adult years--money and security are not enough. There are numerous articles describing career programs in business and industry: for example, programs at John Deere (Hickerson & Anderson, 1982), Hewlett-Packard (Wilhelm, 1983), Gulf Power Company (Lopez, Rockmore, & Kesselman, 1980), Control Data Corpor-

ation (Gomez-Meija & Page, 1983), and Coca-Cola (Slavenski, 1987). However, many of these programs have not taken into account the specific needs of the target group described above by conducting an appropriate needs assessment.

Statement of the Problem

The problem revolves around an enormous need for adult career development activities required by the baby-boom generation. To be more specific, a process is required to help define and assess career adjustment, which would readily recommend both individual and group solutions to the problem. Thus, the purpose of the present study was to test an alternative assessment strategy for the purpose of designing a program for a population in a critical career stage in a small and growing manufacturing company. Specifically, the CADI was tested as a needs analysis instrument to determine the career adjustment of the sample.

Career researchers have not yet made the connection that the entire baby-boom generation is in the establishment stage of their careers. This is the critical step in employees' careers, where they become oriented and adapted to the organizational environment, where they learn the requirements of the position and demonstrate competence, and where they examine their satisfaction and consider op-

portunities for advancement (Campbell et al., 1979). The establishment stage ranges from the mid-twenties to the early forties (Super & Kidd, 1980) which parallels the baby-boomer's age span at this time.

Crites (1976) stated that of all the adult career stages the most critical is the Establishment Stage, "during which the die is often cast for a career of success or failure" (p. 107). More importantly:

It is difficult to imagine a conceptual problem more salient than that of how and why young people enter and adjust to their jobs as they do. Not only is the optimal utilization of person-power in the marketplace at stake, but, because of the centrality of work in the life of the individual, the major sources of self-esteem--career satisfaction and success--hang in the balance (p. 105).

According to Crites' (1982) theory there are six career developmental tasks that must be mastered during the establishment stage for the individual to be career adjusted. These include:

Organizational adaptability: learning the ropes, becoming socialized to expectancies.

Position performance: learning the job, accomplishing duties.

Work habits and attitudes: being dependable, accepting supervision, having a positive approach.

Co-worker relationships: getting along with others, dealing with interpersonal problems.

Advancement: getting ahead, moving up.

Career choice and plans: looking ahead, establishing goals for the future, career paths (p. 21).

Crites (1979, 1982) developed the Career Adjustment and

Development Inventory (CADI) to measure individual progress or adjustment on these tasks. The CADI was used for the current study as a needs assessment for those in the establishment stage at the employing organization.

Needs assessment for career development programs is currently being carried out in many organizations, but none have provided the focus and framework that the CADI provided for the establishment stage population. The typical assessment of career needs is carried out much like a training needs assessment, involving interviews and questionnaires with standard questions often predetermined by consultants. This point will be discussed more thoroughly in the next section, but as an example, Williamson and Otte (1986) provided an outline of topics that include information on employees' interests, skills, and values, information on the organization such as current job openings, and information on various personnel services that would facilitate the individuals' career planning. Certainly, this information is important and helpful for employees, but one must question if it accomplishes an effective analysis of the individual career adjustment needs.

In developing programs, Leibowitz, Farren, and Kaye (1985, 1986) recommend focusing on a target group in the organization, a group such as a certain level of managers or female employees that are likely to have specific ca-

reer needs. These authors have also designed program readiness instruments for the organization which help managers determine if they are ready to implement proposed programs (1983). The current study improved the needs assessment process for career development by using an instrument specifically designed to measure individual adjustment factors in a target group, which placed psychological needs before the assessment. In other words, the degree of individual adjustment was evaluated prior to assessing the need for career services, making the process more effective for both the individual and the organization.

The fact that significant numbers of employees are in need of adjustment assistance, for both the sociological and organizational reasons discussed above, show that the adjustment process to some of these new influences is not well understood, or being coped with adequately. According to Hanson (1977), "the vocationally mature person is one who is actively involved in the choice process and in personal vocational destiny" (p. 444). Yet several authors have identified problems such as career powerlessness, critical transitions, and the need for new coping skills.

For example, Getty (1986) suggested that jobs are currently designed to increase predictability for the organization, which (hopefully inadvertently) reduces mean-

ingfulness and control for the worker, resulting in a feeling of powerlessness. "What we should be doing is helping employees examine their beliefs about the impact they can make on their careers and help direct them to areas where they can exert control" (p. 36). Similarly, Leibowitz & Schlossberg (1982) discussed the concept of critical career transitions where employees find themselves facing new roles, lateral moves, job loss, and career plateaus. The entire target group is affected by these transitions, primarily in the establishment stage, which can cause anxiety about one's career aspirations.

Hall (1986) pointed out that adults need new career competencies, not just job skills but "metaskills," i.e., the skills in acquiring new skills. "The most important skills are adaptability, tolerance of ambiguity and uncertainty, and identity change," (p. 348). Again, this new paradigm seems to parallel the needs of the baby-boom/establishment stage population age group.

Description of the Study

The study was intended to be action research, in the sense that it presented a new approach to solve a problem with direct application to the work setting (Isaac, 1971). It contributed to the contemporary body of knowledge in the organizational career development field, and perhaps will aid others in understanding establishment stage em-

ployees and program design considerations.

However, the sample was restricted and possibly unrepresentative of the larger population. Internal and external validity was compromised, with little control over independent variables. But since the focus was on the process of using a specific approach, the study should be reasonably generalizable to other organizations, which might modify the design, but should be able to use the approach. Virtually every organization has members or employees in the establishment stage, and thus, they may find such a study helpful.

The research questions were stated to ascertain the degree of career adjustment for the identified population, and to determine how these findings may affect program design. These questions constituted the focus of the analysis:

1. What is the degree of career adjustment of the sample?
2. Are there demographic variables, such as location, years of service, gender, and age, that may affect program design?
3. Does the CADI hold promise as a career development needs analysis instrument?

The study also contributed to the verification of career development theory for the establishment stage, and provided a further testing of Crites' CADI. It was antic-

ipated that there would be variation in adjustment levels across individuals, but also that the group would be desirous of continued developmental assistance. One expectation was held that the study would help individuals create a personal development plan, including the teaching of coping techniques as a result of the assessment, while implementing organizational support structures. Thus, the study would provide recommendations for companies considering programs of similar design.

There is little research available on the career adjustment process of adults. Yet the literature shows that the expectations of employees have changed dramatically, while at the same time the structure of organizations is subject to numerous changes, presenting a new career challenge for both concerns. However, the career needs analysis instruments currently being used are transparent and rely on participants' self-perceptions. The CADI on the other hand, was designed to measure critical adjustment behaviors of the Establishment stage. This new instrument was used as alternative strategy to analyze the career adjustment of a sample, to explore variables for program design, and to provide a test of the instrument as a needs analysis.

CHAPTER II

REVIEW OF RELATED LITERATURE

There are three major areas of investigation: (1) the characteristics of the establishment stage, (2) assessing career needs, and (3) the career adjustment process.

The Establishment Stage

Super (1957) originally defined his theory of career stages in The Psychology of Careers (cited in Brown, Brooks, & Associates, 1985, chapter 9) and later expanded his ideas in the "Life-Career Rainbow" (Super, 1980). Basically, the establishment stage is characterized by the settling down in a permanent position, in the early adulthood stage, spanning the ages from the mid-twenties to the early forties. Super acknowledges that the ages, stages, and transitions are very flexible, each involving a recycling through the stages, or a "minicycle." The importance of the establishment stage, and the core of Super's theory, is the development and implementation of the individual self-concept through career activities.

The establishment stage begins by putting forth effort to make a permanent place in one's chosen field. There may be some trial and shifting of various components of the field, a sub-stage called "trial and stabiliza-

tion," (ages 25-30), resulting in possible job or role changes. As the career pattern becomes clear, efforts focus on advancement and security in the field, (ages 31-44).

Campbell et al. (1979) also describe the establishment stage by synthesizing the work of Super and other theorists. The major task for members of the stage is to demonstrate their ability to function effectively in their chosen occupation. One group in this stage obviously consists of the newcomers to the work world, who are often naive to the complexities of the work environment and spend much of their time learning how to function. A second group of individuals are those that "flounder" through the establishment stage and never complete the required tasks. Thirdly, there are the more mature workers who have made a career change and thus re-enter the establishment stage.

All these groups attempt to become oriented and adapted to the organizational environment, which includes establishing relationships with peers and supervisors. Also, they need to acquire knowledge and competence in a position. Finally, they begin to examine their position in the organization, consider advancement opportunities, and develop a career plan.

In addition to the establishment process of the work world, adults also experience life transitions in other a-

renas. Levinson, Darrow, Klein, Levinson ^{and} McKee (1978) view life structuring as a series of alternating stable and transition periods. During the middle years, adults experience a disillusioning process in which they reexamine their goals and relationships. The "settling down" period is characterized by commitments to family and work, and dealing with a changing sense of priorities. There is another transition period during the ages of 38-42, where individuals move from young to middle adulthood. They reassess accomplishments and shortfalls in terms of the goals visualized at earlier stages, and begin to confront the realization of aging (Burack, 1984).

Schein (1978) has described the stage of "full membership in mid-career," in which the individual gains a measure of independence, develops a standard of performance and confidence in one's own decisions. In addition, there is self-assessment of motives, talents, and values, and assessment of occupational opportunities. Some of the major tasks in this stage are to remain technically competent, develop management and interpersonal skills, and deal with the political environment.

A study (1977) by Dalton, Thompson, and Price (cited by Leibowitz et al., 1986) resulted in their formulation of four career stages of professional workers. The stage which seems to parallel the establishment period, Stage II or self-dependence, describes the central activity as be-

ing an "independent contributor" (p. 23). The primary relationship is that of "colleague," and the major psychological issue is independence. The professional in this stage develops credibility and a reputation, and is responsible for his/her own time and outcomes. They rely less on their mentor or supervisor and achieve competency in their technical area first, then administrative competence later (Burack, 1984). This model has been used to design orientations that help employees move successfully through the various stages, and to help managers better understand issues affecting employees (Leibowitz et al., 1986).

Schein's (1978) theory is perhaps the most useful for analyzing the "dynamics" of individual and organizational interaction. It calls for a balance between the needs and strengths of the individual with the realities and challenges of the organization. In the current review of literature, Schein's Career Dynamics (1978) is by far the most often cited reference in books and articles.

There are three dimensions to Schein's (1978) career model. The first dimension is hierarchical and is indicative of the employee's vertical rank in the organization. The second is functional, meaning the area of technical expertise, which can also have external reference points such as professional societies, to indicate career success. The third and most subtle is the "inclusion" dimen-

sion, or moving towards the center of the "cone." In this area, the employee is privilege to company secrets and inside information, for example.

Schein (1978) also includes discussion of the bio-social and family cycles as they relate to the career cycle. (These will be discussed only in terms of the establishment stage population). For example, in the biosocial cycle, the mid-thirties transition is characterized by a review of one's provisional commitments about vocation, marriage, children, and society. It is a time of major re-appraisal and begins the time of making more final choices by coming to terms with work, family, and ambitions. The individual puts down roots and settles into the adult world. The realization of physical limitations and decline are also common in this stage.

"The most important point to be noted about the family cycle is that marriage and parenthood involve major commitments to other people" (Schein, 1978, p. 53), which invariably affect the career and job setting. People often struggle with time constraints, finances, and intimacy. Parents must deal with the common frustrations of child rearing. These issues are further intensified by situations such as dual-career couples and single parents.

The "socialization" and "mutual acceptance" stages described by Schein (1978) roughly correspond to Super's (1980) establishment stage. Socialization includes the

process of learning the ropes, how to get along, and accepting the reality of the human organization. Many employees experience a reality shock when they discover that their good ideas are not readily accepted by the organization. Coping with too much or too little job structure and definition is also common, and requires judging one's own job performance. Technically competent employees are generally unprepared to deal with resistance to change, ambiguity, and company politics. Even having a boss is often stressful, since many new employees are not satisfied with their immediate supervisor. Individuals in the socialization stage ask themselves if they can:

1. Handle the job, if they will like the challenge?
2. Make a contribution, are considered worthwhile?
3. Maintain their individuality and integrity, or will they have to compromise and conform?
4. Lead a balanced life, have time for family and personal interests?
5. Learn and grow?
6. Meet their goals and be proud to be associated with the organization?

For its part, the organization also has a set of questions for the employee in this stage. Will the person

1. Fit in, will their style, attitudes, and values mesh with the culture?
2. Be able to learn and make a contribution, improve

the organization?

3. Become a leader and take on responsibility?

The mutual acceptance stage culminates in "the granting of full membership" through the conferring of status, important job assignments, and the establishment of a psychological contract with the organization. Although the employee is now perceived as a member, tenure has not yet been achieved; all that has been agreed to is that there is enough of a match between the needs and skills of the individual and the needs and expectations of the organization to continue the career.

One of the best indicators of organizational acceptance is the sharing of "company secrets" (Schein, 1978, p. 116). These secrets include specific work-related information which must not be revealed to competitors. A second category is discussions of what others really think of the employee, comparisons to others, and what the future holds. Thirdly, secrets are shared as to how things really get done and how things really work in the organization. Finally, there is frank accounting of what really happened around key events.

It is also interesting to look at the middle management population, both as managers and employees, since many of them are also in the establishment stage. In Designing Career Development Systems, Leibowitz and associates (1986) present a model for the interaction of employ-

ees and their managers through the career stages. In the establishment stage, employees need from their managers coaching, feedback, training, a role model, acceptance and confirmation, and protection, while managers need technical and psychological support from their subordinates.

The authors recommend helping managers become familiar with the career stages of their employees so they can facilitate the progression and transition. Managers in the establishment stage must proceed through five tasks to take charge of their role:

1. Taking hold: develop understanding of the situation, shape priorities, develop expectations and relationships with employees.
2. Immersion: developing a deeper understanding of the situations and the people.
3. Reshaping: dealing with the underlying causes of problems, being open to unanticipated problems.
4. Consolidation: following through on reshaping actions, remaining open to new developments.
5. Refinement, (Leibowitz et al., p. 125).

Programs can be designed to help managers negotiate these tasks that need to be accomplished in the establishment stage. Burack (1984) suggested a program that relates training and development to each career stage, spelling out the typical developmental experiences for each stage. "The model shows when individuals should show the new knowledges, skills and abilities requisite for promotion" (p. 59). Thus, this approach provides a focus or structure for career planning, self-assessment, and

counseling in each career stage.

The review of literature for the establishment stage has considered several theories and schemes to describe the population of the study. Each author presented a series of life-work issues and a list of tasks or challenges to be accomplished. For Super (1980), the establishment stage is characterized by the settling down in a permanent position, and implementation of the self-concept. Campbell's (1979) synthesis discussed the demonstration of ability in one's chosen occupation, as well as adapting to the organization and establishing relationships. The life transitions described by Levinson (1978) and others indicated that adults often experience a disillusioning process, which is followed by a changing sense of priorities. Schein (1978) described the stage as the gaining of full membership, independence, and competence, and also discussed various biosocial and family cycles. Dalton (cited by Leibowitz et al., 1986) and colleagues viewed the central activity as that of independent contributor. Finally, Leibowitz's (1986) model for the interaction of employees and managers during the career stages was presented. For the current project, Super's general definition of the establishment stage will be used. Schein's process of interaction with the organization will also be used as a basis for discussion of the results.

Assessing Career Needs

Organizational interventions are difficult at best, and even more so without a needs assessment. This section will review the literature pertaining to the current practices in the assessment of needs for career development in organizations. One of the purposes in doing so is to establish the need for a more specific and comprehensive assessment of the target group identified. This is not meant to criticize current practices, because many authors and companies follow sound assessment principles. However, it will be shown that the conventional assessment techniques do not adequately define the specific behaviors and needs of employees struggling with career adjustment problems.

The needs, problems, and opportunities in an organization must be identified to provide the leverage for implementing change (Leibowitz et al., 1986). After identifying sources of dissatisfaction or opportunity, the assessment data can then be used as a "tool for challenging the status quo" (p. 16). If the assessment is conducted among a wide population, the needs that surface may be broad enough to justify an extensive intervention. The data are also essential to provide a basis from which to evaluate the change. Furthermore, if key people and departments are involved in the process from the beginning, they will be more likely to support the recommendations

for the design and implementation of the program.

One strategy for assessing career needs is to look at existing data, such as annual climate surveys, personnel records, and exit interviews, which may supply data on turnover rates, length of service, etc. Asking prepared questions of department managers often uncover target groups in specific job categories, levels, or divisions. Leibowitz and associates (1986) use a questionnaire that lists possible problems, such as "employees lack career mobility," and have "unclear career paths," to which managers respond by indicating whether its a problem (pp. 20-21). Although these are leading questions, the format certainly facilitates eliciting responses from the interviewees. Other methods include one-on-one interviews (which allow for free expression but can be time consuming), and group interviews which can facilitate discussion of different viewpoints.

It would be an obvious mistake to assume that the needs of any one population are the same. Thus, it is necessary to identify the needs of target groups to make both the needs and the program design as accurate as possible. Once data are obtained from an organizational survey, they can be clarified and extended by interviews with small focus groups. These groups should be surveyed for specific needs: they may be new employees, technical employees, women, managers, or minorities. This activity

provides a direct link to a group in the organization with identified needs.

Burack and Mathys (cited in Leibowitz et al., 1986) have used an attitude survey to focus on needs. Employees indicate the extent of agreement to items such as "I believe the company has an obligation to provide a lifetime career plan for every employee" (p. 279). Similarly, an insurance company used a list of possible needs to which employees assign a level of importance, for example, "assistance in clarifying my career goals" (p. 279). The National Aeronautics and Space Administration (NASA) used a somewhat different approach (Liebowitz et al., 1986, p. 281) by listing possible needs, ("to learn about Civil Service job opportunities"), and having the employees indicate how important the need is and how well the need is currently being met. These are all clever designs and probably very successful in uncovering needs. But again, they use leading questions and force the respondent to focus on the consultant's standard list of career development activities.

Farren, Kaye, and Leibowitz (1983) have designed a standardized instrument to determine the scope of a career development system. It assesses current behavior by asking for the degree to which employees "have career discussions with managers and colleagues," for example. Possible program outcomes are provided for employees to rate on

a 10 point scale. Managers also assess their skill level on key behaviors, such as helping employees "write realistic development plans" (p. 3).

Mirabile (1985) has designed an excellent model for competency-based career development, which integrates training, job analysis, and succession planning with the career program. It is designed to answer the following questions:

1. What competencies are necessary to perform in a given position?
2. What is the current competency level of a particular employee?
3. Is the employee ready to move to a new position? Which one? When?
4. If the employee is not ready, what needs to be done to make him or her ready? (p. 30).

→ The assessment format is meant to be completed by the employee, a peer, and the supervisor. Mirabile (1985) recommends that the competency descriptions be as behaviorally specific as possible to make the evaluations more accurate. For each position in the organization, a position profile would be developed to include its purpose, responsibilities, knowledge, challenges, activities, and skills. Each position also has a list of composite competency areas for the specific knowledge and skills identified in the profile. Finally, a list of subordinates are ranked based on the evaluations for each competency.

Rothenbach (1982) observed that the implementation of

career programs is often accomplished without asking employees for their inputs on career concerns, and as a result conducted a national survey to identify some of their ideas. The factors he studied are perceptions about the equity of career systems, supervisory concerns, and employee interest, awareness, and satisfaction with career development. The results of the study indicated (p. 46) clearly that programs must be specifically designed for each particular group's needs; the survey showed significant differences between age groups and gender. The author concluded that a career development needs analysis is imperative for both individual and organizational success.

Washing and Boveington (1985) conducted a survey with data processing employees. Because "individuals expect to be treated maturely by the organization and to participate in the decisions that affect their careers" (p. 194), the authors designed the survey to measure employee perceptions about career development. For example, in response to the question "is career planning and the role that you should play ever discussed with you?," 46% of employees answered never, and 43% sometimes. This and the previous study both indicate the importance of assessing employee needs, but do not necessarily add to the study of assessment techniques. Rather, these methods support the needs analysis concepts outlined by Leibowitz and associates.

Heflich (1981) designed a comprehensive taxonomy of

personal values for assessment and selection, based on Grave's analysis of coping systems (cited in Heflich, 1981, p. 79). The problem for the selection and development of employees is that a person's beliefs, assumptions, and ways of coping with tasks is difficult to assess. For simplicity, the author has identified six value orientations: (1) security, (2) self, (3) systems, (4) success, (5) society, and (6) meaning orientations. These are combined with factors, such as learning style, to form a matrix of strategies for effective management. The manager, then, can identify the style and task to be performed, find the appropriate match on the matrix, and select a suitable strategy. This is an excellent tool and could probably be used for self-assessment as well.

Leibowitz et al., (1986b) have also designed a "career development quiz" (CDQ) to determine management and organizational readiness for career programs, and to help describe areas of possible resistance. There are 16 items, such as "our organization provides training to managers in coaching and counseling skills," to which managers indicate level of agreement. Like some of the other instruments described above, the CDQ is meant to assess needs on predetermined behaviors at the management level. The authors' survey of organizations (1985) found that the majority base their programs on a needs assessment and direct it to a target group.

According to Williamson and Otte (1986), a proper needs assessment requires a "process for arriving at what should be (the ideal), a way to take inventory of what is (the real), and a way of deciding among alternative programs or approaches to bridge the gap between the two" (p. 59). Some common symptoms that may indicate the need for career development are frustration over career options, talk of unfair practices, skewed age distributions, new technology or newly hired staff. Williamson and Otte developed an assessment instrument based on four categories of communicating information: (1) for the employees, (2) for the organization, (3) methods to use the information, and (4) information on the management climate. After the survey is administered, a task force approach is used to discuss and agree upon what really needs to be done in the organization.

Kaye et al., (1984) have used career resource centers to return responsibility for career assessment to the individual employee. The center offers "self-directed, self-paced learning and provides resources without creating dependence on the organization" (p. 112). In the four stations of the center, employees make a self-statement, a reality check, a goal identification, and a development plan. At each station employees are provided with information and material to assist them in the assessment. This concept would seem to provide a broad brush approach

to helping employees, but does not identify target groups or specific problems.

Another article by Kaye (1983) calls for the linking of career development with training and development, so that training is put into the framework of employee goals and the needs of the organizational human resources. This approach allows the organization to decide who gets trained in what areas, and how the training fits into the organization's overall plan. It is similar to Mirabile's (1985) competency based career plan and has been proven to be effective in some organizations.

Existing literature reveals that there are a variety of strategies and instruments used to assess the career needs of individuals in organizations. Leibowitz et al., (1986) recommended using existing data, questionnaires that list possible problems, interviews, and focus groups. Mirabile's (1985) competency model can be integrated with other human resource functions. Rothenbach (1982) and Washing and Boveington (1985) both conducted surveys across organizations to study employees' perceptions about career programs. A discussion of specific instruments, such as the Career Development Quiz, was also included. Finally, the concept of career resource centers was presented.

These assessment techniques do not adequately define the behaviors of employees struggling with career adjust-

ment problems. Many of the needs are descriptive only, and are presented through leading questions or statements, making the assessment transparent and obvious for the participants. Thus, most assessment techniques are lists of pre-conceived items to which employees respond on the basis of whether those items exist or are desired in the organization.

The Adjustment Process

As noted above, the Diagnostic Taxonomy of Adult Career Problems (Campbell et al., 1979) is a core document for the study of career adjustment. Many adults are undergoing career transitions and experience problems such as mid-career change, career decision making, on-the-job adjustment, underemployment, organizational morale, work productivity, obsolescence, and retirement. The Taxonomy was developed as a response to study these career transition problems, "by devising improved techniques that lead to the differential diagnosis and treatment of client problems" (p. ix).

The Taxonomy consists of four major problem categories: (1) problems in career decision making, (2) problems in implementing career plans, (3) problems in organizational/institutional performance, and (4) problems in organizational/institutional adaptation. The categories are further subdivided and defined for each career stage. For

example, for problems in adapting to the work environment, section two describes problems caused by "changes over time," such as:

1. Changes over the life span in one's attitudes, values, life style, career plans, or commitment to the organization which lead to incongruence between the individual and the environment;
2. Changes in the organizational/institutional environment which lead to incongruence between the individual and the environment, e.g. physical and administrative structure, policies, and procedures (p. 65).

However, it is not enough to simply identify a problem. Effective diagnosis requires an in-depth analysis which leads to a treatment plan. The Taxonomy proposed an assessment system that includes problem identification, problem analysis, problem evaluation, and treatment planning.

Crites (in Campbell et al., 1979) used the taxonomy to develop an instrument (CADI) to measure adjustment problems in the establishment stage. He selected problem behaviors critical to successful career adjustment, meaning that "if the worker did not accomplish certain career developmental tasks of the establishment stage, then subsequent career adjustment, as indicated by success and satisfaction, would be adversely affected" (p. 80). The six scales of the inventory measure the degree of career adjustment as outlined in the Taxonomy, and as translated into developmental tasks of the establishment stage:

1. Organizational adaptability: getting into an or-

ganization, learning the ropes, becoming socialized to expectancies.

2. Position performance: learning the job, accomplishing job duties and tasks.
3. Work habits and attitudes: being dependable, having a positive approach, accepting supervision.
4. Co-worker relationships: getting along with others, dealing effectively with interpersonal problems on the job.
5. Advancement: getting ahead, moving up the organizational ladder.
6. Career choice and plans: looking ahead, establishing goals for the future, identifying career paths (Crites, 1982, p. 20).

There are 90 items in the inventory, 15 for each scale, scored true or false. There are 20 additional questions with a multiple choice response format that are designed to assess how well an employee copes with problem situations on the job. These problematic situations cover a wide spectrum of "thwarting conditions" commonly found in the work environment. They are scored on three levels by the following criteria:

1. Integrative: removes thwarting conditions and reduces tension or anxiety.
2. Adjustive: reduces tension or anxiety but does not remove thwarting conditions.
3. Nonadjustive: neither removes thwarting conditions nor reduces tension or anxiety (Crites, 1982, p. 20).

A discussion of the Taxonomy and the CADI represents a substantial part of the research base for adult career adjustment problems and measurement. It identifies career

adjustment as consisting of various underlying problems, which can be translated into critical tasks for an individual's career stage. After the problems have been identified and assessed, an individual or group treatment plan can be designed. The treatment may well include typical career services currently being offered in organizations, but also has the potential of analyzing specific needs. In other words, if a company survey revealed the need for better career information for example, but the employees were actually feeling stuck in their careers because of underlying decision making problems, then providing additional career information would probably not be an effective service for the employees. Thus, measuring career adjustment goes much deeper because many career problems are more complicated than simply viewing them as a lack of information or training. This would help treat the causes as well as the symptoms.

Another way of looking at adjustment is London and Stumpf's (cited in Hall, 1986) concept of career motivation, which includes "being resilient in the face of change, having insight into one's self and the environment, and identifying with one's job, organization, and/or profession as career goals" (p. 25). People who are high in resilience are able to control their responses to what happens to them; they are able to take risks, cooperate with others, and adjust their energies when faced with

obstacles. Career insight refers to how realistic people are, and how accurately they relate perceptions to goals. They capitalize on their strengths and look for feedback. People with strong career identity are involved in their jobs and are likely to feel loyalty to the organization. They tend to define themselves through their work. Career motivation, then, is certainly related to adjustment. The authors have outlined specific developmental tasks and exercises to facilitate growth in these areas.

Many organizations are offering various career services to assist employees in their adjustment and development. Hewlett-Packard for example (Wilhelm, 1983), held a 14-week workshop for structured self-assessment and organizational information. Participants took the Strong Campbell Interest Inventory and a values inventory, and kept developmental diaries. After data collection, participants worked on a specific career plan within the company. In response to the concern that career aware employees would leave the company, the author suggested that "with a realistic appreciation of what the company can offer them and with a sense of how their goals fit with those of their employer, they are often more content to stay" (p. 88).

Bardsley (1984) designed a career workshop at IBM when it was discovered that employees did not understand their career goals, and were not familiar with self-evalu-

ation techniques. Some employees were missing career opportunities because they did not know what they were looking for. Another concern was productivity: "self-motivated employees have goals and understand how their current performance relates to their future opportunities" (p. 76). To counter this, the workshop introduced the career planning process by teaching participants self-assessment of values, interests, and skills, the exploration of opportunity as it relates to current and future jobs, and how to establish a career plan. This kind of workshop seems to be very typical in today's companies, especially large companies. The programs also include some indicators of program success, such as excellence ratings and recommendations for continuing, in addition to tips for designing programs.

Hanson's description (1982) of the workshop at Lawrence Livermore National Laboratory is perhaps the most referenced program in the literature. One reason is that the author conducted several methods of evaluation and follow-up. For example, she used an earlier form of Crites' (cited by Hanson, 1982) Career Adjustment Inventory as a pre-post test for participants. The program was very successful in achieving its objectives, and "had its greatest effect on the extent to which individuals assume an internal control in directing and managing their career development" (p. 61). As a result of the program, signif-

ificant numbers of employees changed departments in the organization, changed job titles and duties, and took courses to upgrade their skills. There are many other articles on career services such as employee workshops, but the three articles described above have been chosen to represent that body of literature.

There are some interesting concepts that also relate to the career adjustment process. In a fascinating study by the Association of American Colleges (Shulman, 1983), the authors argued that Humanities graduates can often be more successful in business careers than Business graduates. One of the major reasons is that work responsibilities change after a few years of employment: "broader, less content specific skills are required, and the need for interpersonal and communication skills increases" (p. 3). College graduates who advanced to more responsible positions had to call upon these skills which were different than those used in their first position. Thus, vocational preparation provides access to the first job, but its importance diminishes with time. Occupational shifts require adjustment, and those that are successful seem to have skills in communication and interpersonal relations. This would support Crites' generalization (Campbell et al., 1979) that "the single most critical behavior in job failure is the inability to get along with others" (p. 80). Jackson and Vitberg (1987) describe "career

entrepreneurship" as a new employee adjustment skill. This concept comes from the fact that the implied contract of performance-based job security is no longer a viable guarantee in today's businesses. Entrepreneurs are a new breed of employee who look for bigger and better jobs. "A career entrepreneur is one who manages the enhancement of his or her own personal skills, knowledge, and qualities, and applies these resources to producing the best possible output while increasing personal income and satisfaction" (p. 16). They innovate and create jobs if necessary, indicating an internal locus and individual responsibility, which is another dimension of career adjustment.

Mentoring is receiving a lot of attention in the literature as a practice that can help employees adjust to the realities of the organization, and to facilitate career growth. Clawson's (1985) review of the subject shows that although mentoring relationships are hard to define and institutionalize, the developmental quality of superior/subordinate relationships are definitely effective. He designed evaluation forms to identify and evaluate the various facets of the working arrangements with mentors. The definition was expanded to include teaching, coaching, role modeling, protecting, and sponsoring. Mentoring is an obvious yet subtle practice that has most likely existed in organizations for many years. The efforts of contemporary authors are directed toward the formalization of

mentoring "programs."

Another topic that has received considerable attention is organizational cultures, with the implication for careers being the "cultural match" of employees and their employers. Wallach's (1983) review concentrates on the matching process of the employee's personality and motivation with that of the corporate culture. The author identified three kinds of cultures--(1) bureaucratic, (2) innovative, and (3) supportive--which can be measured with an instrument called the "organizational culture index" (p. 32). There are also three social motivators--(1) achievement, (2) affiliation, and (3) power--which can be matched to the corresponding cultures. Wallach's model is intended to be used for selection and training purposes to insure the optimum "fit" for employees. Although culture is a seemingly external factor for employees, they might do well to consider its influence for their career adjustment.

The concept of redesigning jobs also has implications for the current study, because the process allows organizations to utilize existing personnel to meet the changing needs of both. The process, as outlined by Crystal and Deems (1983), is similar to other career services in that it analyzes the employee's skills, values, etc., and pairs them with the projected needs of the company. The idea is based on the U.S Department of Labor's projection that a-

bout one third of the job openings in the next few years will be for jobs that did not exist a few years ago.

Bolles' essay (1982) on job-matching and creativity is an excellent description of adjusting to individual and organizational needs. He argues that job descriptions, and corporate objectives for that matter, are static and mechanistic, while in reality both are changing and evolving all the time. In a sense, each person "creates" their own job. The position has a significant discretionary element to it, in which the job tasks can be accomplished in one of many different ways. Secondly, the individual brings to the job a unique background and set of skills, which may be quite different than that of the predecessor, even though the job is basically the same. In addition, the job can change substantially without the employee ever leaving the desk. The employee can create their own job by challenging the assumptions upon which the job is based, by looking for patterns in the job that no else has discovered, by making connections between previously unrelated aspects of the job, by experimenting with new ways to accomplish tasks, and by using accident or chance to learn new things about the job. Although job creativity and career adjustment are certainly not synonymous, the career adjusted person is likely to be more creative in developing themselves and their job in the organization.

This review of the literature has discussed the adjustment process as it relates to individual careers and organizations. The Taxonomy of adult career problems was shown to be a comprehensive analysis of adjustment patterns, which led to the design of the CADI. The measurement of career adjustment then, may be more important than the conventional assessment of career needs.

London and Stumpf's (cited in Hall, 1986) concept of career motivation was discussed to further identify the various dimensions of adjustment. A review of successful career workshops at Hewlett-Packard, IBM, and Lawrence Livermore was presented to show how some companies are attempting to address adjustment problems. In addition, it was shown that Liberal Arts graduates can often compete with business graduates because of their interpersonal skills. Organizational members are also experimenting with career entrepreneurship, mentoring, and cultural match as three ways to facilitate adjustment. Crystal and Deems' (1983) ideas of redesigning jobs was shown to be related to adjustment because the process recognizes the changing needs of both individuals and organizations. Finally, Bolles' (1982) concept of job creativity argued that employees can change and create compatible positions for themselves.

CHAPTER III

DESIGN AND METHODOLOGY

Approval was obtained to conduct the study from the Western Michigan University Human Subjects Institutional Review Board. Permission was also granted by the employing organization to conduct the study with a sample of its employees. The testing phase of the study began by administering the Career Adjustment and Development Inventory (Crites, 1982). The results were then tabulated and analyzed on several variables. A discussion of the implications for program design, and recommendations for further research concluded the formal presentation.

The Organization

The study was conducted at a local manufacturing company employing about 800 people. The company is 35 years old and still developing new markets for its products. It is well-established in the community and has an excellent reputation as an employer. The company has a very typical organizational scheme, with operational departments in sales, engineering, and administrative areas. The bulk of employees are in manufacturing. There are four functional locations: the corporate office, the local manufacturing plant, and additional manufacturing facilities in mid-east

and south-east locations.

Subjects

The population consisted of all salaried employees in the age group of 26-42 years old, which represented clerical, professional, and managerial employees in the establishment career stage (Super, 1980). The preselected sample in this study made up about 12% of the company's workforce and about 80% of the salaried group. Specifically, there were 93 employees in the establishment stage, consisting of 66 males and 27 females. The employees in this group had an average of 6 1/2 years of service with the company. An additional random sample of employees, whose age was less than 26 or greater than 42, was also selected for the study. This additional group was selected to determine if the CADI was sensitive enough to identify those persons not in the establishment stage. For the total sample, the range of ages was 21 to 57, while the median age was 39, and the mean was 35.

Instrumentation

Data for the study were collected by using the Career Adjustment and Development Inventory (Crites, 1982, see appendix B) in its updated version (Crites, 1987). Crites originally designed the inventory as a test of the Taxonomy of Adult Career Problems (Campbell et al., 1979) for

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the establishment career stage. The Taxonomy identified six career developmental tasks that must be accomplished in the establishment stage, and Crites wrote 15 items for each task which are represented by the six scales in the inventory.

From many testings in organizations, the CADI has established internal consistency reliability. "For the total 90-item scale, the Kuder-Richardson Formula 20 coefficients score in the mid-80s. For the shorter, separate scales, the r 's are understandably lower, but are nonetheless acceptable. They cluster in the .65-.70 range" (Crites, 1982, p. 22). Thus both the separate scales and the total are within the boundaries of acceptability. Fifteen items for each scale appear to be sufficient for differentiating career adjustment among adults, and there are only negligible sex bias differences. Crites' research (1982) also showed acceptable validity through a study of intercorrelations between the scales.

There are a total of seven scales in the Career Adjustment and Development Inventory. The first six scales have 15 items each; correct responses are totaled ranging from zero to 15. The last scale, called "adjustment" (ADJ), has 20 multiple choice items which are scored as either integrative (3 points), adjustive (2 points), or non-adjustive (1 point) for each item. Thus, there are 90 possible points on part I, and 60 possible points on part

II, for a total of 150 possible points for each participant. High scores (the preferred response) indicate that the participant has a high degree of career adjustment on those scales. (See appendices B and D for the specific test items for each scale). A description of the scales is presented below.

POS = Position Performance: learning the job, accomplishing job duties and tasks.

WHA = Work Habits and Attitudes: being dependable, having a positive approach, accepting supervision.

ADV = Advancement: getting ahead, moving up the organizational ladder.

COR = Co-worker Relationships: getting along with others, dealing effectively with interpersonal problems on the job.

ORG = Organizational Adaptability: getting into an organization, learning the ropes, becoming socialized to expectancies.

CAR = Career Choice and Plans: looking ahead, establishing goals for the future, identifying career paths.

ADJ = a composite score of the multiple choice items measuring career adjustment and coping strategies.

Experimental Procedures

Each participant was notified by written announcement (see appendix A) prior to the data gathering stage. They were informed of the purpose of the study, and were told that their participation was both voluntary and anonymous. Conveniently, the personnel managers at each location were

all included in the study, which helped coordinate and support the project. Each participant completed the inventory at their work site, on company time, and returned it to the researcher by mail within two weeks.

Participants identified their age, gender, number of years of service, and location, on their answer sheet. The answer sheets were scored on the seven scales by hand using templates made by the researcher. The scores were verified by an associate. The scoring key is presented in Appendix D.

Data Analysis

Subject's scores on the CADI subscales were compared using a one-way analysis of variance on the basis of four dimensions: (1) location, (2) years of service, (3) gender, and (4) age. Tables were prepared for each variable, with means and standard deviations on each scale, providing summary comparisons of the data. Since the study was action research, and since the CADI had not been used for this purpose before, a comprehensive analysis of the results is provided.

Evaluation

A process evaluation was also conducted to provide observations on the use of the CADI for needs analysis. First, a process log was kept to note any significance or

problems with the administration of the CADI. Second, the researcher conducted focused interviews two weeks after the data collection with a sample of the participants (Appendix E).

The criteria used to measure the success of the evaluation were adapted from the Joint Committee on Standards for Educational Evaluation (cited by Brinkerhoff, Brethower, Hluchyj, and Nowakowski, 1983). The Joint Committee organized the standards into four domains of evaluation:

1. Utility: evaluations should be useful and practical.
2. Feasibility: evaluations should be realistic and prudent.
3. Propriety: evaluations should be conducted legally and ethically.
4. Accuracy: evaluations should be technically adequate (pp. 210-213).

The evaluation process was compared with these criterion, and the results served as a meta-evaluation.

Operational Hypothesis

Because the study design was action research, it was intended to solve a specific problem with direct application to the work setting. The research questions were:

1. What is the degree of career adjustment of the sample?
2. Are there demographic variables--such as location, years of service, gender, and age--that may affect pro-

gram design?

3. Does the CADI hold promise as a career development needs analysis instrument?

The operational hypothesis, then, was used as a strategic approach to the problem rather than a scientific hypothesis to be tested. The utility of the project was in its contribution to career development needs assessment in organizations such as business and industry.

The strategy was to measure the degree and dimensionality of career adjustment across a substantial sample of the company for the purposes of program assessment and design. The need for such a study had been established from a review of published literature. Because of the variability of the subjects, a broad range of career adjustment as measured by the CADI was expected. It was anticipated that such an assessment would be superior to other techniques in uncovering adjustment problems. An important outcome of the study was to assess the need for a career guidance and counseling program, prior to, or in addition to, the more typical career information program.

CHAPTER IV

RESULTS

This chapter describes the responses of the subjects and the results of the analysis of variance of the groups on the four variables. A discussion of the norms and the evaluation process is also included.

The Sample

A total of 117 questionnaires were sent to the subjects at four different locations (see Table 1), and 72% of the sample surveyed chose to participate in the study.

Table 1
Number of Respondents in Each
Location of the Study

Location	Population	Responses	Rate
Corporate	34	21	62%
Plant 1	28	24	86%
Plant 2	38	24	63%
Plant 3	17	15	88%
Totals	117	84	72%

It was important to identify some of the standard demographics of the sample by each location. Gender and

years of service are presented in Table 2. For both variables, the subjects that participated in the study represented accurate proportions of the population at each location.

Table 2
Demographics of the Subjects in
Each Location of the Study

Location	N	Gender		Mean Years of Service
		Males	Females	
Corporate	21	11	10	6.5
Plant 1	24	16	8	7.5
Plant 2	24	17	7	8.7
Plant 3	15	11	4	3.3
Totals	84	55	29	

Thirdly, the sample was defined by age group in relation to the establishment stage. In Table 3, the persons who were prior to the establishment stage, within the stage, and beyond the stage are presented. There were 53 participants in the establishment stage, that is, between the ages of 26 and 42. In addition, 11 people younger than 26, and 20 people older than 42, also participated in the study. The average years of service for all participants at this company was 6.8; a frequency distribution revealed that 30% of the participants had only one to two

years of service, and another 30% had between three and five years of service. Thus, the distribution on this variable was negatively skewed towards the lower end of the scale. Over half the sample had five years of service or less, indicating that the company had experienced recent growth.

Table 3
Participant's Age in Relation
to the Establishment Stage

Location	N	Before Stage	Within Stage	Beyond Stage
Corporate	21	4	15	2
Plant 1	24	3	17	4
Plant 2	24	4	12	8
Plant 3	15	0	9	6
Totals	84	11	53	20

Location

The means and standard deviations for each scale and location are displayed in Table 4, as well as a total score and F ratios. A one-way analysis of variance revealed that, for 3 and 80 degrees of freedom, the critical value of F at the .05 level of significance was 2.76. The means of plant three were significantly different from those of the other locations on six of the eight CADI

scales.

Table 4
Summary Scores on the CADI for
Each Location of the Study

CADI Scale		Corp. n=21	Plt.1 n=24	Plt.2 n=24	Plt.3 n=15	F Ratio
POS	Mean	13.71	13.88	14.38	14.93	4.26 *
	Std	1.55	1.20	0.81	0.25	
WHA	Mean	13.24	13.17	13.00	13.73	1.11
	Std	1.69	1.31	0.91	0.44	
ADV	Mean	9.76	10.92	10.67	12.73	4.70 *
	Std	2.41	2.12	2.79	1.44	
COR	Mean	12.38	12.75	12.04	14.40	7.51 *
	Std	1.68	1.33	1.97	0.49	
ORG	Mean	14.10	13.75	13.58	15.00	3.91 *
	Std	1.48	1.16	1.63	0.00	
CAR	Mean	11.52	12.21	11.92	13.80	4.62 *
	Std	1.89	2.14	1.87	1.11	
ADJ	Mean	55.05	54.96	54.33	55.93	1.06
	Std	3.34	2.92	2.51	0.68	
Total Score	Mean	129.76	131.63	129.92	140.53	7.97 *
	Std	8.98	6.22	8.23	2.60	

*p<.05.

The range of the mean scores for each location were generally consistent down the scales. Plant three, however, was highest on all the scales, and even showed a perfect score on the Organizational Adaptability (ORG) scale. The total score was about 10 points higher than the other

three locations. Notice also, that the standard deviations for plant three were consistently smaller, showing less variation, especially for the total score deviation compared to the other locations.

There may be a relationship between the two scales of Advancement (ADV) and Career-Choice-and-Plans (CAR), that is, both scales are consistently lower for all four locations. These are also the two topics most frequently presented in career workshops, indicating a possible need for this organization. Crites identified these two scales (in Campbell et al., 1979) as career activities that normally occur later in the establishment stage, and thus, would generally show lower scores.

Years of Service

The number of years that participants have been employed with the organization was used as an exploratory variable in the study. Since no data were available, it was hypothesized that years of service might be an important consideration for program design. The data on the four categories of years is presented in Table 5; the categories were derived from a frequency distribution of the total population years of service, and were divided by logical breaks in the frequencies.

Table 5
Summary Scores on the CADI for Each of the
Years of Service Groups

CADI Scale		1-2 Years n=25	3-5 Years n=25	6-13 Years n=20	15-26 Years n=14	F Ratio
POS	Mean	14.20	14.48	13.82	14.19	1.11
	Std	1.06	0.96	1.40	1.18	
WHA	Mean	13.52	13.29	13.18	12.81	1.07
	Std	0.98	1.16	1.53	1.13	
ADV	Mean	11.28	11.52	10.23	10.31	1.45
	Std	2.32	2.15	3.03	2.02	
COR	Mean	13.12	13.10	12.18	12.50	1.56
	Std	1.56	1.34	1.90	1.97	
ORG	Mean	14.36	14.33	13.68	13.50	2.08
	Std	1.29	1.13	1.39	1.58	
CAR	Mean	12.84	12.24	12.00	11.63	1.36
	Std	1.71	1.92	2.13	2.09	
ADJ	Mean	54.80	54.81	55.41	54.88	0.24
	Std	2.64	2.56	2.64	3.08	
Total Score	Mean	134.52	133.76	130.50	129.81	1.48
	Std	7.46	6.89	9.34	8.08	

*p<.05.

As can be readily seen from the data, the means were remarkably similar between the years of service groups for each scale. The ADV and CAR scales were again the lowest, and had the most variability. The total scores showed a descending order according to the number of years of service, although not significantly. A one way analysis of

variance revealed that, for 3 and 80 degrees of freedom, the critical value of F at .05 level of significance was 2.76. Therefore, there were no significant differences among the four groups on the basis of years of service.

Gender

The use of gender in the study was used as a further test of the CADI, and also to explore any program design considerations. The means for the two groups are presented in Table 6.

A one way analysis of variance revealed that, for one and 82 degrees of freedom, the critical value of F at .05 level of significance was 4.00. The scores between males and females are, therefore, very similar, with statistically significant differences between the two groups on the Work-Habits-and-Attitudes scale only. This scale measures the extent to which individuals have a positive approach and accept supervision.

It is difficult to know if the absence of sex differences is due to the use of the CADI, or to the equality of the sample. The CADI may not be sensitive enough to detect sex differences, or there may not be significant differences among the sample. The scores do follow the same pattern of lower means for the ADV and CAR scales found in the analyses of the other variables.

Table 6
Summary Scores on the CADI
for Each Gender Group

CADI Scales		Males n=55	Females n=29	F Ratio
POS	Mean	14.18	14.14	0.03
	Std	1.15	1.25	
WHA	Mean	13.04	13.62	4.33 *
	Std	1.29	1.25	
ADV	Mean	10.93	10.79	0.05
	Std	2.53	2.45	
COR	Mean	12.67	12.90	0.31
	Std	1.70	1.81	
ORG	Mean	13.89	14.24	1.19
	Std	1.50	1.13	
CAR	Mean	12.22	12.28	0.02
	Std	1.87	2.24	
ADJ	Mean	54.82	55.28	1.36
	Std	2.95	2.18	
Total Score	Mean	131.75	133.24	0.62
	Std	8.39	7.73	

*p<.05.

Age

The measurement of different age groups was also an important variable for the current study, since the CADI was designed for the establishment career stage employee, and since about 80% of the management group of the host company fell into that category. The data were organized

into three age groups: (1) those before the establishment stage, (2) those within the stage, and (3) those beyond the stage. The data are presented in Table 7.

Table 7
Summary Scores on the CADI
for Each Age Group

CADI Scale		Establishment Before	Within	Stage Beyond	F Ratio
		n=11	n=53	n=20	
POS	Mean	13.73	14.15	14.43	1.27
	Std	1.21	1.20	1.15	
WHA	Mean	13.09	13.33	13.10	0.34
	Std	1.00	1.37	0.91	
ADV	Mean	10.27	10.87	11.24	0.53
	Std	2.30	2.63	2.51	
COR	Mean	12.36	12.79	12.86	0.32
	Std	1.77	1.47	1.65	
ORG	Mean	14.09	14.04	13.90	0.09
	Std	1.16	1.33	1.21	
CAR	Mean	11.55	12.19	12.71	1.26
	Std	1.83	1.94	2.01	
ADJ	Mean	54.27	54.87	55.62	0.98
	Std	3.02	2.70	2.46	
Total Score	Mean	129.36	132.23	133.86	1.07
	Std	6.00	7.87	9.48	

*p<.05.

Analysis of the results reveals that the mean scores increased as age increased. The only exceptions were the ORG scale, which had minor differences in descending or-

der, and the WHA scale which increased for the group within the establishment stage and decreased for the group beyond the establishment stage. Like the newer plant, this may be due to the better training and orientation of younger employees. On all other scales though, the group within the establishment stage was higher than those before, and the group beyond the stage was higher than those within. A one-way analysis of variance revealed that, for 2 and 81 degrees of freedom, the critical value of F at the .05 level of significance was 3.15. The hypothesis that older employees have a higher degree of career adjustment does not seem to be supported in the sample studied.

Norms

National norms for the CADI were not available, so no true comparison could be made from the results of the research sample to the larger population. However, Crites did publish results from the original testing of the CADI (in Campbell et al., 1979), making a preliminary comparison possible. In Table 8, the means and standard deviations for the first six scales from the two samples are presented, as well as their hierarchical order.

As can be seen from the two columns in Table 8, the samples compared very favorably. There was a clear pattern between the two studies: the highs and lows from one

sample were the same highs and lows of the other. Even the variances were very similar. The research sample was consistently higher, except on the ADV scale. This was probably attributable to the higher expectations for career advancement of today's employees.

Table 8
Comparison of Two Sample Testings of the CADI
and the Hierarchical Order of the Scales

Scale		Crites' Sample	Order	Research Sample	Order
POS	Mean	13.30	2	14.17	1
	Std	1.42		1.18	
WHA	Mean	12.59	3	13.24	3
	Std	1.80		1.24	
ADV	Mean	11.53	5	10.88	6
	Std	2.64		2.50	
COR	Mean	12.29	4	12.75	4
	Std	1.78		1.74	
ORG	Mean	13.87	1	14.01	2
	Std	1.45		1.39	
CAR	Mean	10.58	6	12.24	5
	Std	2.37		2.00	

Secondly, Crites found that a hierarchical pattern emerged which was consistent with the developmental continuum of the establishment stage. The largest means, the ORG and POS scales, are presumably mastered early in the stage. The intermediate sequence, the WHA and COR scales, are "ongoing tasks which occupy a central focus during the

middle of the establishment stage" (p. 84). Finally, the lowest means, the ADV and CAR scales, have a future orientation and occur later in the stage. Although the individual numbers are slightly out of sequence, the three pairs of scales for the research sample follow the same pattern.

Thirdly, internal norms were created from the data of the research sample, using cumulative frequencies, for each variable group. The norms for the total scores only are reported in Appendix G. The complete norms are available from the researcher for the interested reader.

Evaluation

One of the purposes of the study was to evaluate the use of the CADI as a needs assessment instrument. It will be remembered from the review of literature that various career assessment techniques were discussed, and were generally found to be somewhat transparent and self-fulfilling. The CADI, on the other hand, was developed from a taxonomy of adult career problems, and designed specifically to measure behaviors that were defined by the six critical tasks of the establishment stage. It was anticipated that the CADI would prove superior in uncovering adjustment problems.

Discussion Groups

The first phase of the evaluation process for the study was the conducting of focused discussion groups. The purpose of the groups was to conduct a process evaluation of the CADI. Two groups of seven participants each were randomly chosen from two of the locations in the sample. The discussions were conducted about two weeks after the completion of the CADI, and were led by the principle investigator. The following summary represents the group leader's interpretation of the discussions.

A list of discussion questions was provided to the discussion participants to facilitate consistency among the groups, (see Appendix E). The discussions began with an explanation of the study and the evaluation techniques, and several direct questions related to their experience of responding to the survey. According to the groups, the CADI took an average of about 30 minutes to complete. The opinion of the participants was that the reading level required for the instrument was late middle school to early high school. The general reaction to the process was indifferent to positive. They felt that they could relate to the questions, in the sense that the situations were realistic for working adults, even though some of the questions were too easy, meaning the "correct" answer was obvious.

Many of the participants had been involved in other

kinds of assessments throughout their careers, such as interest and aptitude testing, training needs, and organizational evaluation. Their memories of these exercises were mostly negative: the instruments were poorly constructed, they never received any feedback or results, nor did they understand the purpose of the assessment, and thus, felt the assessments were a waste of time.

They also had some complaints about taking the CADI. Foremost was that the questions were too repetitive. This is understandable because there are 15 questions for each scale, and many of them are very similar, being the same question asked in a slightly different way. In addition, they complained that their answers were "borderline," meaning that the answer was neither entirely true nor entirely false, a common complaint with this type of response format.

The participants commented that Part II of the CADI was much more interesting and realistic. They did complain however that the "wrong" answer was too obvious, (the non-adjustive choice). Finally, the group discussed the point that, like many multiple-choice opinion formats, the "best answer" was not necessarily how the individual would actually respond, but instead they answered what they thought was the preferred response.

On the question of transparency, the groups were split among their responses. Some participants felt that

the CADI questions were straightforward and that they were aware of what was being measured. Others indicated that the questions were more subtle and wondered what they were really being asked. Interestingly, the groups felt that some questions were hard to relate to, or not applicable, suggesting that the participants may not be aware of, or agree with, the critical behaviors identified by the instrument.

Many of the questions, such as those on career goals, stimulated the participants to think more about their individual career plans. The discussion was timely in about half the cases because they had already been wondering about their careers, and the survey helped them ask some important questions. Five of the participants were more neutral about their reaction, commenting that the questions only reconfirmed their present situations, which may be useful as well. Even in these cases however, the participants realized that they needed more direction for their careers. Three people indicated that they would have liked individual consultation because of their struggle with career concerns and possible adjustment problems.

Typically, the groups asked about the company's responsibility for helping employees with their careers. They seemed to know "other" people that would benefit from a formal career program, and presented several recent changes in the company that added to the situation. Ca-

reer counseling was also mentioned as something that was needed for some people with "personality problems" that might be uncovered by the CADI during personal interviews.

The groups felt that the CADI was a fairly accurate assessment of career adjustment. To present the extreme views, one participant said the instrument was "too general", and one said the instrument was "like taking a snapshot" of their current career problems. Although they saw the potential of the CADI to uncover adjustment issues, the groups were virtually unanimous in wanting to know the results of the questionnaire, and indeed, felt that they could help interpret the results for the company. It was unfortunate that, for purposes of the study, the participant's answers were anonymous, and therefore could not be reported back to the individuals. This seemed to leave the participant's with a need to know more about their career adjustment and development process.

The results of the group evaluation were comparable to the feedback Crites received using a reactions questionnaire (in Campbell et al., 1979). In his sample, 79% agreed that the statements "made sense". Another 75% reported that the CADI items were relevant to them. One person in Crites' sample commented, for example, that the instrument was superior to most other questionnaires of a similar nature.

✓ Process Log

The second part of the evaluation was a process log kept by the researcher for the purpose of documenting any important problems or events related to the use of the CADI during the study. One challenge was the availability of information on the CADI. It is still a relatively new instrument, with few published references, making it necessary to contact the author directly. National norms for the CADI were being developed by the author during the course of the study but were currently not available.

The quality of the appearance of the instrument was poor, in contrast to many similar instruments which are commercially available. There were several typographical errors, and stray marks from photocopying, which necessitated re-typing the entire instrument and making enough copies for the study. An answer sheet also had to be designed, since a standard sheet and scoring services were not available. The CADI is time consuming to score manually because of the six scales and the multiple choice section.

Although it is not the fault of the instrument, it needs to be noted that seven participants chose not to fill out the demographic information on the answer sheet, making their answers unusable for the study. This reduced the sample size, and introduced an unknown element into the study. However, the answers were scored anyway to see

if they were in some way different from those that volunteered the necessary information, but no differences were found.

In summary, a total of 72% of the subjects contacted volunteered to participate in the study. Of those responding, their gender and number of years of service were proportionate to the population of the organization. Plant three had much higher scores on the CADI scales making it significantly different than the other locations. The gender, years of service, and age of participants did not reveal significant differences. A comparison to an earlier testing of the CADI revealed that the study group followed the same task/time pattern. Finally, the discussions groups and process log presented some of the reactions to the administration of the instrument for evaluation purposes.

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

The use of the Career Adjustment and Development Inventory for a career needs assessment in a business environment provided some potentially interesting and useful results. The study included four variables commonly used in program design: (1) location, (2) years of service, (3) gender, and (4) age. A process evaluation was also conducted which showed a moderately favorable reaction to the inventory. Included in this chapter are more specific conclusions about the study.

The Sample

The host organization for the study included a diverse population at four different locations: two in the midwest, one in the mideast, and one in the southeast. The potential sample size was 117, with 84 people, or 72% responding. Certainly this was not a large sample size if the only purpose was test validation, but for a management needs assessment the sample was adequate. Secondly, the response rate was acceptable, even though higher response rates are always desirable. It was however unfortunate that the response rates for two of the locations were 62% and 63%. Further research should be conducted in larger

organizations with diverse cultures, which would tend to overcome possible inaccuracies related to the sub-sample and sample size.

The distribution of the gender groups and years of service in the sample was also appropriate. About 65% of the sample who chose to participate in the study were male. This is certainly not a high percentage even by today's standards. The average years of service for the participants was 6.8, which may indicate a relatively young, or new, workforce, but one which is normal in the sense that it is appropriate for the size and age of the organization studied.

About 80% of the management group were in the establishment career stage, (between the ages of 26 and 42), but only about 63% of that group chose to participate in the study. The reasons are not clear, but conversations with the other personnel managers indicated that these people are generally middle managers with line responsibilities, and thus, they were very hard to reach because of time restrictions. Interestingly, the highest response rate was from those individuals who were beyond the establishment stage, 42 or more years of age. This may suggest that either these people "have more time," or that they may have serious career concerns such as "plateauing" or early retirement. Further investigation of these questions may provide valuable insights for program design.

Variable One: Location

When the scores of the four different locations were compared, significant differences were found on six of the eight measures only because of the higher scores from the plant three location in the southeast. The reasons for this dramatic difference at one location are not clear, and any explanation is speculative. Nevertheless, an interview with the personnel manager at this location was conducted to discuss the results.

The plant is located in a rural south-eastern area, and at four years old, is the newest facility in the company. The number of years of service is of course lower, even though about half the management group is not indigenous to the area but were transferred from other locations when the new division was created. The personnel manager explained that many of the employees from this culture are not as well educated as their counterparts, and seem to be satisfied with less. In addition, there are many new companies moving into the area, but most employees appear to be quite satisfied with the host employer. This suggestion is supported by a recent employee attitude survey, (a project unrelated to the present paper), which showed that this location had a higher level of job satisfaction on most scales than the other three locations.

The lower variability in the scores for plant three

might suggest better orientation, training, and general preparation in starting up a new plant. In any event, the scores were certainly more homogeneous than the other locations. The personnel manager explained that the employees at this location sincerely enjoy their work, even though there is not as much opportunity for advancement at the present time. The employees also enjoy doing the kind of work for this industry.

All four locations followed the same pattern of lowest scores on the scales for Advancement and Career-Choice-and-Plans. Interestingly, the corporate location is probably the most career-aware group, yet their scores on both scales were the lowest of all groups. Conversations with the management of this group revealed a much higher level of expectation for advancement, but at the same time their preparation level for career choice and plans was inadequate. The fact that these needs were surfaced and identified by the CADI would tend to support its use as a career needs assessment instrument, and would also serve to alert other researchers that there can be significant differences between several locations and cultures. These differences should be considered in designing a career development program by modifying the design where necessary to account for the group differences. Data collection using the CADI could be followed by focus group discussions to determine each group's specific

needs.

Variable Two: Years of Service

The study of years of service needs additional research to determine its significance to career development programs. The time spent in an organization can often be an indicator, whether positive or negative, of the employees' perception of their career progress. However, there is no correlation between the number of years of service and the career stage of individuals, especially when the increased mobility of today's managers is considered. In other words, an employee with a relatively short period of service may be a young person right out of college, or a seasoned executive in the maintenance career stage that just changed companies for a better position.

The study utilized this variable as part of an exploration to determine if employee service might be a significant factor in program design. The research data showed no statistically different results between years of service groups, thus, years of service was not a significant variable for career program design for the sample. The results did show a descending pattern from low to high years, indicating the possibility of better training and orientation of newer employees, but the results were not conclusive.

However, counselors would still be advised to con-

sider this variable on an individual basis. Among the individual scores, which are not reported here, there were several participants in each service group that had non-adjustive responses, which may indicate the need for assistance. Whether employees have low or high years of service, the time spent in an organization can be an important individual variable. But, the variable may not be significant for program design for a large group, even though there could be individual cases in which years of service with the organization is a concern.

Variable Three: Gender

Scores for the two gender groups were remarkably similar. The only significant difference was on the Work-Habits-and-Attitudes scale. The items in the inventory for this scale address behaviors such as planning work, accepting supervision, and attitudes toward work and the employer. The purpose of the research was to determine if differences exist for program design considerations. The evidence for the absence of differences on this scale was not conclusive.

Again, this variable does not seem significant for program design. That does not mean that women do not have different career development needs, but only that the needs analysis failed to reveal significant differences which may affect program design. The culture of the host

company tends to support both gender groups, and discrimination is not perceived to be a problem. However, the literature does show that other companies may have these concerns, as indicated by the number of workshops and programs designed specifically for women and minorities. So the use of the CADI in other organizations may reveal significant differences between gender groups, which could be discussed in a focus group to determine specific needs for a program.

Variable Four: Age

The measurement of three age groups in relation to the establishment stage was meant to test the sensitivity of the CADI. It was found that there were no statistically significant differences between age groups that were before the stage, within the stage, or beyond the stage. However, as expected, the scores were in an ascending order according to age. Thus, in general, one would expect a higher degree of career adjustment as the age of the participants increases. It was not conclusive from the results whether the CADI was sensitive enough to differentiate age groups when administered to a large sample. Statistically, the low F ratios were a result of small differences between the groups, even though there were large individual differences within the groups. Certainly, more work should be done on this question if it is

considered important to the use of the CADI as an assessment instrument. Career stages are somewhat artificial divisions with possible overlap, and perhaps not useful for specific age groups.

One explanation for the homogeneity of the three age groups may be found within the organization. As a small private company, its professionalism increased as the size of the organization increased. This means that younger employees, who are relatively new to the organization, began their career at a time when the company had a more competent human resource system. Older employees on the other hand, started their career and developed during a time when the management system was not as organized or professional. This evolution might tend to blur the differences on career adjustment between the age groups.

It is concluded that either the instrument was not sensitive enough to differentiate age groups, or the critical behaviors identified by Crites are not as age-specific as originally thought. Perhaps a larger sample would have shown more significant differences. A follow up study could be designed to explore this question further by interviewing participants in a career workshop for specific age groups and career adjustment behaviors.

Norms

Based on a preliminary comparison to Crites' data,

the research results followed the same developmental pattern identified in the establishment stage. The data converged on a task/time sequence, which parallels the three phases of career adjustment. The highest scores are those that are more completely mastered, Organizational Adaptability and Position Performance, which occur early in the stage. In the intermediate phase, the worker is preoccupied with present work activities (WHA) and interpersonal associations (COR), which again is reflected in the scores for these two scales. The last phase of the establishment stage is more future oriented, predominantly focused on the tasks of advancement and career planning.

Although an established norm bank was not available, the research sample seemed to provide an accurate test of the CADI, and the results are probably generalizable to other populations in business environments. But because the adjustment process spans considerable time, it would be helpful to have longitudinal data. Program designers could then more accurately diagnose immature patterns of adjustment and formulate differential interventions.

Process Evaluation

The discussion groups provided an evaluation of the CADI as an assessment instrument. The participants' reactions were neutral to positive: they complained about some of the typical test-taking behaviors, but found the

questions stimulating because they touched on issues that the participants were already concerned about. The CADI turned out to be an accurate needs assessment for career adjustment, but left the groups with a desire for a formalized career development program in which they could receive guidance and counseling on their abilities and on opportunities in the company.

The evaluation compared favorably, for the most part, against the standards outlined by the Joint Committee (see page 45). The results of the evaluation were useful and pertinent, and were reported in a manner that can be replicated. However, other researchers should be cautioned that the documentation of the group discussions may be subjective. The evaluation was also practical for the purpose and context of the study, was cost effective, and was considerate of the different interests of the members.

Participation in the evaluation was voluntary and confidential; the purpose and scope of the project were clearly outlined by the researcher. A balance of both strengths and weaknesses was reported. However, the source of information (focus groups) may not be defensible, and the information-gathering instrument (discussion questions) may not have the desired validity and reliability. On a five point scale from poor to excellent, the evaluation could be judged a four (good) on the utility, feasibility, and propriety criteria, and a two (less than

satisfactory) on the accuracy criterion.

Conclusions

The CADI was designed to measure career adjustment in the establishment stage. Its use as a needs assessment instrument for the design of a career development program was shown to be effective in several areas.

1. What is the degree of career adjustment of the sample? The data illustrated the scores of a substantial sample on seven dimensions of adjustment, and included separate analyses on four variables. The scores were generally on the high side, higher than Crites' earlier sample, and differentiated two scales, Advancement and Career-Choice-and-Plans, that were consistently lower for all groups. Internal norms were also created to provide a more detailed analysis of the group results. The data were sufficient to describe the career adjustment of each individual in the sample, and to design an effective career program for the host organization. The new program could also include topics outlined in the literature such as mentoring and job creativity.

2. Are there demographic variables, such as location, years of service, gender, and age, that may affect program design? It would certainly be wise for the program developer to consider the specific location of the implementation. The data from the study clearly showed extreme

scores at one location. As a group, the sample did not reveal significant differences for years of service, although this may be important for certain individuals which would be better dealt with in a one-on-one session. Gender was not supported by the data as a significant variable for program design, meaning that males and females have very similar adjustment levels. The analysis of three age groups also did not reveal substantial differences, although interesting patterns were observed that could be verified with a larger sample. The review of literature indicated that these variables do operate in some organizations.

3. Does the CADI hold promise as a career development needs analysis instrument? The CADI was designed to measure behaviors critical to the establishment stage. It identified individual counseling needs for several cases, and also identified the needs of the group for a workshop on career planning. The degree of career adjustment of an individual or group is more pertinent to needs analysis than the listing of common career activities in an organization. The need for identified career paths, for example, may only be a symptom of a more basic career adjustment concern, such as indecision. Thus, the CADI may be used as an excellent starting point to evaluate career needs, where participants are measured on adjustment prior to being involved in conventional career services. The

CADI can also be used as the basis of a career workshop to teach participants career skills, such as goal clarification, because the instrument is designed to measure those behaviors. However, additional research needs to be done on the use of the instrument to improve its validity.

The results from a diverse sample population provided valuable insights into the assessment process. There were no significant differences between the groups on three of the exploratory variables. Further research is needed on the career adjustment of different age groups and gender groups, and on employees' self-perceptions of their career progress. The review of literature revealed that the changing conditions of society, and of the workplace, require new adjustment skills for working adults. The project was a positive first step to address the problem of assessing and providing career services in organizations.

APPENDICES

Appendix A
Cover Letter to Participants

Dear fellow employee:

Thank you in advance for agreeing to participate in this project. I am doing the study both for graduate school and for the company. My interest is in adult career adjustment, so the purpose of the study is to conduct a needs assessment for the salaried group in our company. There are also some questions to help determine how the assessment process worked.

Your participation is completely voluntary and anonymous; please do not write your name anywhere on the forms. I would urge you to participate because I think both you and the company can benefit. You may keep the questionnaire so you can refer to it later.

There are three materials enclosed in this packet. Find the Career Adjustment and Development Inventory, and its answer sheet, and complete the inventory. Then, when you have finished that, please answer the Evaluation Questionnaire. Send the answer sheet and the evaluation form to me through the coordinator at your location as soon as possible. If you are interested in the results, I can send you the scoring key. I may publish a group report as well. Thanks again for your help.

Appendix B
Career Adjustment and Development Inventory

PLEASE NOTE:

Copyrighted materials in this document have not been filmed at the request of the author. They are available for consultation, however, in the author's university library.

These consist of pages:

82-87

89

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U·M·I

Appendix C
Answer Sheet for the CADI

Appendix D
Scoring Key for the CADI

Appendix E
Discussion Questions

DISCUSSION QUESTIONS

1. Provide introductions and ice breakers.
2. Describe the study and the CADI.
3. Explain process evaluation techniques.
4. Have you ever participated in a needs assessment?
5. Did you notice any problems with this one?
6. Were the questions transparent?
7. What is the approximate reading level of the CADI?
8. Did you find the process interesting? Useful?
9. Did it raise the level of awareness of your career?
10. Do you have other career issues that need attention?
11. Do you think this company needs a career program?
12. Do you think the inventory helps uncover adjustment problems?
13. Do you have career needs that the CADI did not uncover?
14. In general, do you think the CADI is an accurate and complete career needs assessment?

Appendix F
Internal Norms for Total Scores

Total Score Norms for all Locations				
Score Category	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Corporate Office				
116.0-119.1	5	25.00%	5	25.00%
119.1-122.2	1	5.00%	6	30.00%
122.2-125.3	1	5.00%	7	35.00%
125.3-128.4	0	.00%	7	35.00%
128.4-131.6	5	25.00%	12	60.00%
131.6-134.7	1	5.00%	13	65.00%
134.7-137.8	3	15.00%	16	80.00%
137.8-140.9	2	10.00%	18	90.00%
140.9-144.0	1	5.00%	19	95.00%
144.0-147.1	1	5.00%	20	100.00%
Plant 1				
120.0-122.5	2	8.33%	2	8.33%
122.5-125.1	3	12.50%	5	20.83%
125.1-127.7	0	.00%	5	20.83%
127.7-130.2	4	16.67%	9	37.50%
130.2-132.8	4	16.67%	13	54.17%
132.8-135.3	5	20.83%	18	75.00%
135.3-137.9	3	12.50%	21	87.50%
137.9-140.4	0	.00%	21	87.50%
140.4-143.0	1	4.17%	22	91.67%
143.0-145.6	2	8.33%	24	100.00%

Plant 2

110.0-113.6	2	8.33%	2	8.33%
113.6-117.1	0	.00%	2	8.33%
117.1-120.7	2	8.33%	4	16.67%
120.7-124.2	0	.00%	4	16.67%
124.2-127.8	2	8.33%	6	25.00%
127.8-131.3	6	25.00%	12	50.00%
131.3-134.9	5	20.83%	17	70.83%
134.9-138.4	4	16.67%	21	87.50%
138.4-142.0	1	4.17%	22	91.67%
142.0-145.6	2	8.33%	24	100.00%

Plant 3

134.0-136.0	1	6.67%	1	6.67%
136.0-138.0	2	13.33%	3	20.00%
138.0-140.0	0	.00%	3	20.00%
140.0-142.0	6	40.00%	9	60.00%
142.0-144.0	6	40.00%	15	100.00%

Total Score Norms for Years of Service Groups

Score Category	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1-2 Years				
116-119	1	4.00%	1	4.00%
119-122	1	4.00%	2	8.00%
122-125	1	4.00%	3	12.00%
125-128	1	4.00%	4	16.00%
128-131	3	12.00%	7	28.00%
131-134	4	16.00%	11	44.00%
134-137	4	16.00%	15	60.00%
137-140	1	4.00%	16	64.00%
140-143	6	24.00%	22	88.00%
143-146	3	12.00%	25	100.00%
3-5 Years				
120.0-122.6	1	4.76%	1	4.76%
122.6-125.1	1	4.76%	2	9.52%
125.1-127.7	1	4.76%	3	14.29%
127.7-130.2	5	23.81%	8	38.10%
130.2-132.8	3	14.29%	11	52.38%
132.8-135.3	2	9.52%	13	61.90%
135.3-137.9	1	4.76%	14	66.97%
137.9-140.4	1	4.76%	15	71.43%
140.4-143.0	2	9.52%	17	80.95%
143.0-145.6	4	19.05%	21	100.00%

6-13 Years

110.0-113.8	1	4.55%	1	4.55%
113.8-117.6	2	9.09%	3	13.64%
117.6-121.3	2	9.09%	5	22.73%
121.3-125.1	2	9.09%	7	31.82%
125.1-128.9	1	2.55%	8	36.36%
128.9-132.7	1	4.55%	9	40.91%
132.7-136.4	7	31.82%	16	72.73%
136.4-140.2	4	18.18%	20	90.91%
140.2-144.0	1	4.55%	21	95.45%
144.0-147.8	1	4.55%	22	100.00%

15-26 Years

111.0-114.6	1	6.25%	1	6.25%
114.6-118.1	1	6.25%	2	12.50%
118.1-121.7	1	6.25%	3	18.75%
121.7-125.2	1	6.25%	4	25.00%
125.2-128.8	2	12.50%	6	37.50%
128.8-132.3	3	18.75%	9	56.25%
132.3-135.9	3	18.75%	12	75.00%
135.9-139.4	3	18.75%	15	93.75%
139.4-143.0	0	.00%	15	93.75%
143.0-146.6	1	6.25%	16	100.00%

Total Score Norms for Gender Groups				
Score Category	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Males				
111.0-114.7	1	1.82%	1	1.82%
114.7-118.3	5	9.09%	6	10.91%
118.3-122.0	4	7.27%	10	18.18%
122.0-125.7	2	3.64%	12	21.82%
125.7-129.3	7	12.73%	19	34.55%
129.3-133.0	7	12.73%	26	47.27%
133.0-136.7	11	20.00%	37	67.27%
136.7-140.3	8	14.55%	45	81.82%
140.3-144.0	9	16.36%	54	98.18%
144.0-147.7	1	1.82%	55	100.00%
Females				
110.0-113.7	1	3.45%	1	3.45%
113.7-117.3	0	.00%	1	3.45%
117.3-121.0	0	.00%	1	3.45%
121.0-124.7	3	10.34%	4	13.79%
124.7-128.3	3	10.34%	7	24.14%
128.3-132.0	4	13.79%	11	37.93%
132.0-135.7	7	24.14%	18	62.07%
135.7-139.3	4	13.79%	22	75.86%
139.3-143.0	1	3.45%	23	79.31%
143.0-146.7	6	20.69%	29	100.00%

Total Score Norms for Age Groups				
Score Category	Frequency	Percent	Cumulative Frequency	Cumulative Percent
Before Establishment Stage				
119.0-121.3	2	18.18%	2	18.18%
121.3-123.7	0	.00%	2	18.18%
123.7-126.0	1	9.09%	3	27.27%
126.0-128.3	1	9.09%	4	36.36%
128.3-130.7	2	18.18%	6	54.55%
130.7-133.0	2	18.18%	8	72.73%
133.0-135.3	1	9.09%	9	81.82%
135.3-137.7	1	9.09%	10	90.91%
137.7-140.0	0	.00%	10	90.91%
140.0-142.3	1	9.09%	11	100.00%
Within Establishment Stage				
110.0-113.8	1	1.92%	1	1.92%
113.8-117.6	3	5.77%	4	7.69%
117.6-121.3	1	1.92%	5	9.62%
121.3-125.1	5	9.62%	10	19.23%
125.1-128.9	3	5.77%	13	25.00%
128.9-132.7	10	19.23%	23	44.23%
132.7-136.4	14	26.92%	37	71.15%
136.4-140.2	5	9.62%	42	80.77%
140.2-144.0	9	17.31%	51	98.08%
144.0-147.8	1	1.92%	52	100.00%

Beyond Establishment Stage

111.0-114.6	1	4.76%	1	4.76%
114.6-118.1	2	9.52%	3	14.29%
118.1-121.7	1	4.76%	4	19.05%
121.7-125.2	0	.00%	4	19.05%
125.2-128.8	1	4.76%	5	23.81%
128.8-132.3	2	9.52%	7	33.33%
132.3-135.9	2	9.52%	9	42.86%
135.9-139.4	3	14.29%	12	57.14%
139.4-143.0	6	28.57%	18	85.71%
143.0-146.6	3	14.29%	21	100.00%

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