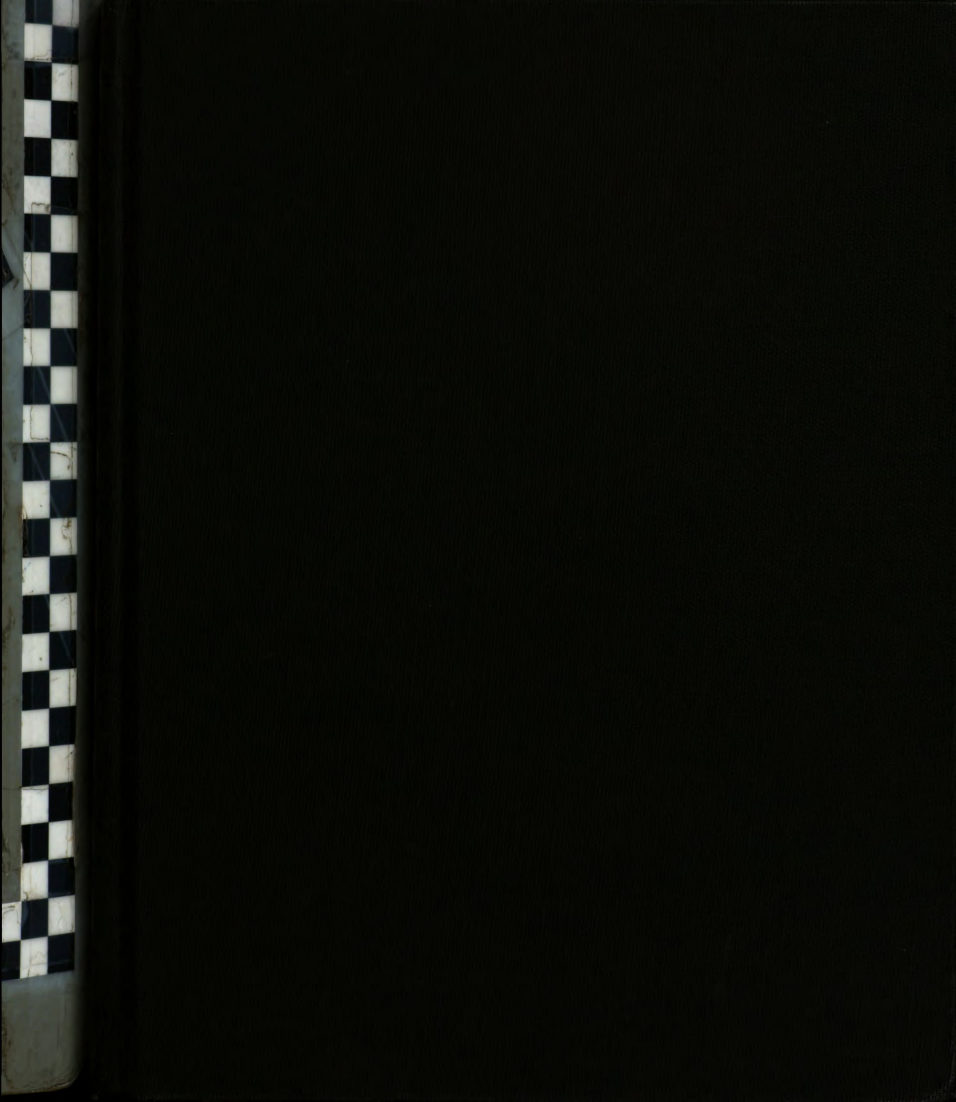




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A COMPARATIVE ANALYSIS OF PSYCHOSOCIAL DEVELOPMENT
AND VOCATIONAL MATURITY OF ADULT RETRAINING
STUDENT'S PERSISTENCE AT A
COMMUNITY COLLEGE

presented by

Brian Leigh Desbiens

has been accepted towards fulfillment
of the requirements for

Doctor of Philosophy degree in Department of Counseling,
Personnel Services and
Educational Psychology

Dr. William Farquhar
Dr. William Farquhar

Major professor

Date October 4, 1979



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A COMPARATIVE ANALYSIS OF PSYCHOSOCIAL DEVELOPMENT
AND VOCATIONAL MATURITY OF ADULT RETRAINING
STUDENT'S PERSISTENCE AT A
COMMUNITY COLLEGE

By

Brian Leigh Desbiens

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Department of Counseling, Personnel Services and
Educational Psychology

1979

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ABSTRACT

A COMPARATIVE ANALYSIS OF PSYCHOSOCIAL DEVELOPMENT AND VOCATIONAL MATURITY OF ADULT RETRAINING STUDENT'S PERSISTENCE AT A COMMUNITY COLLEGE

By

Brian Leigh Desbiens

The major purpose of this study was to identify psychosocial and vocational maturity differences among persisters and non-persisters in an adult academic re-training program at a community college. The relationship between the constructs of psychosocial and vocational development have potential theoretical value. Also, there are implications for educators and counselors regarding retention.

A review of the literature supported the hypotheses that: vocational development, in particular, the construct of vocational maturity, was part of general development and closely related to the construct of psychosocial development; psychosocial factors were crucial in understanding the motivation of students and their persistence or non-persistence in college; and differences in demographic characteristics, such as age, sex, and work experience impact on the development of social and vocational maturity.

One hundred and twenty-seven adults enrolled in academic upgrading (sixth through twelfth grade) programs volunteered to participate in this naturalistic study. The adults were administered the "Adult Student Development Questionnaire" during their first week orientation program. It consisted of: (1) the "Psychosocial Development Inventory" which measured the first six stages of Erikson's theory of psychosocial development; (2) the "Career Maturity Inventory Attitude Scale" which measured John Crites' definition of vocational maturity; and (3) a demographic survey. Follow-up data was collected on the students for the next six to nine months to identify the reasons non-persisters gave for discontinuation from their programs. Statistical hypotheses formulated to test the relationships among career maturity, psychosocial development, age, gender, persistence, non-persistence, and selected demographic characteristics were analyzed by means of Pearson Product-Moment Correlation Coefficients, One-Way Analysis of Variance, Chi Square Crosstabulations, Multiple Regression Analysis, and T-tests.

Reliability (internal consistency) for the instruments ranged from .30 to .78. A significant relationship (.05) was found between the measures of psychosocial and vocational maturity. Two positive psychosocial subscales (Trust and Identity) were significant as well as all six negative subscales (Mistrust, Shame and Doubt, Guilt, Inferiority, Identity Diffusion, Isolation); while four of the six psychosocial stage scales were significant at the .01 level

(Trust-Mistrust, Autonomy-Shame and Doubt, Industry-Inferiority, Intimacy-Isolation) when correlated with career maturity. No differences were found between the scores of persisters and non-persisters on the measure of psychosocial development, vocational maturity, nor by gender. Some differences were found when controlling for age. Older students scored higher on Industry and Career Maturity, while younger students had a greater sense of Initiative, Shame and Doubt, and Inferiority.

Additional exploration found that those subjects rating self low on physical health were more likely to drop out. Multiple Regression Analysis revealed the importance of such variable as: Job Stability, Identity, Inferiority, Marital Status, and Career Maturity in accounting for variance between persisters and non-persisters.

The results of the study have: (1) further substantiated the integral relationship between vocational and psychosocial development; (2) identified psychosocial factors (Identity, Inferiority) and other variables (Career Maturity, Job Stability, Highest Educational Level Completed, Marital Status) that account for variance between persisters and non-persisters; (3) identified the need for different methods of intervention in counseling based on developmental theory; (4) identified differences between adult persisters and non-persisters in academic upgrading that are distinct from previous research on persistence; (5) identified attitudes toward physical health as an important factor in persistence;

and (6) established the importance of early psychosocial stage resolution (Trust, Autonomy, Industry) in the development of vocational maturity.

The study was limited by its follow-up technique in distinguishing psychosocial and vocational maturity factors for persisters and non-persisters. However, the results do imply that counselors should view the counselee as a developing totality instead of having a segmented perspective of client concerns. Adult students differ from adolescents and require different interventions to help them successfully overcome previous limitations. The identification of specific types of counseling methods effective with adult retraining students should be based on a developmental stage theory.

Further replication of this type of study with other populations is recommended to see if lack of gender differences found are indicative of this population or reflective of social change in society. Further validation of the "Psychosocial Development Inventory" is also indicated using different criterion groups and different behavioral measures.

To MOM

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CHAPTER I

THE PROBLEM

Introduction

A strong work ethic dominates the Western Culture. Ingrained in this ethic is the importance of having a job and preferably a career. People measure the relative status of others and consequently how they feel and think about them by their work or intended contribution to society. They ask their children: "What do you want to be?" "How would you like to contribute to society?" "What would you like to do?" These are measures of their children's life-activity plans. The children's responses when compared to people's personal expectation, influence their perceptions of their children. Similarly, educational institutions expect individuals to choose, at predetermined intervals, and to progress at a prescribed pace.

People are often asked: "Who and what are you?" They might answer by giving family relationships, group membership, nationality, occupation, religion, age, sex, and/or skin color. Each of these attributes can be a dimension of identity; but whether it is actually included in an individual's sense of ego identity depends on the importance society assigns to the dimension and on the degree to which

society's value system is shared. The construct of ego identity was first developed by Erikson (1950, 1959) as part of a theory of lifelong development of an individual's sense of ego development. Ego development is an integrally social as well as individual concept. Holt defined ego development as "a feeling of being a worthy person because one fits into a coherent and valued order of things."¹ But society assigns different degrees of importance to different dimensions as indicated above. Occupations are a highly valued dimension in society. Whether the person gives similar value to an occupation is essentially a subjective phenomenon. However, if there is a discrepancy between how society and the individual value an occupation, or in the person's attainment of the societal value, society may make its evaluation of the individual forcefully clear. The individual also becomes aware of the position given them relative to a reference group and as Erikson points out, the reference group is composed of "those who count and those who give the individual that inner assuredness of anticipated recognition which, as a part of a sense of psychosocial well-being, makes up the experience of a sense of identity."² If the individual does not fit into a coherent and valued order, they are therefore

¹Holt, R.R., "Recent Developments in Psychoanalytic Ego Psychology and Their Implications for Diagnostic Testing," Journal of Projective Techniques, (1960), 24, p. 254.

²Ross, Alan O., "Ego Identity and the Social Order: A Psychosocial Analysis of Six Indonesians," Psychological Monographs: General and Applied, (1962), vol. 76, no. 23, p. 25.

perceived to be marginal with respect to an important dimension of "who and what" they are expected to be. They then become marginal or potentially perceive themselves as lacking in relationship to his/her reference group.

The Problem

Given then that society has established certain norms both psychosocial and vocational, the problem becomes for many what to do if they are not conforming with societal expectations, even though they may wish to conform. How can helpers (psychologists, counselors, educators) assist individuals to identify his/her level of psychosocial and vocational development? How can helpers identify behaviors that prevent individuals from progressing in career and educational plans? How are career attitudes and psychosocial development related? What differences do sex and age have on psychosocial development and vocational maturity for adults returning to college? These questions are the focal points for this study. While the answers may have many implications, the primary concern of this study will be on identifying the relationship between psychosocial and vocational development as they relate to an individual's ability to successfully complete their stated formal educational goals.

Background

In the past two decades, there has been an emphasis on the study of vocational behavior and psychosocial

development. In the vocational area, such authors as Crites (1973); Ginsberg, Ginzberg, Axlerad and Herma (1951); Super (1953, 1957); and Tiedeman and O'Hara (1963) have developed theories of vocational maturity and stages of vocational development. Likewise, in the psychosocial area, the study of life span development by Erik Erikson (1963) has outlined a psychosocial theory of human development that delineates various developmental stages, problems, and crises.

In the past ten years, Anne Constantinople (1969) and Pat Munley (1973) have examined Erikson's stages of development in relation to vocational and social behavior. The study reported here examined psychosocial development and vocational maturity with a particular population and related these constructs to a particular level and problem area of education.

The level of education which was investigated is that of the adult returning to school in order to finish his/her high school equivalency or obtain some specific skill training for a job. The area is poorly researched in Canada although the Federal Government invests annually some three quarters of a billion dollars for funding of Adult Retraining Programs. Secondly, the problem area was what distinguishes persisters from non-persisters.

There have been many studies conducted delineating the specific factors that characterize the reasons why students drop out of college (Astin, 1977; Calder, 1977; Brooker, 1975; Flegg, 1978; Sainty, 1971; Truesdell, 1975;

Near, 1977)). However, very few have attempted to go beyond the symptomatology to view the student from a development perspective.

Need for the Study

Persistence

Persistence is a particularly relevant topic these days due to the impending, if not existing, decline in post-secondary bound students. Traditionally, administrators and faculty have seen recruitment as the principal means of keeping enrollment up; however, with the supply dwindling, the focus has turned to the retention of those already attracted to an institution. Since many institutions are still funded on some sort of per capita formula, it becomes cost effective to invest resources to prevent students from dropping out (Astin, 1977). More importantly, from an educator's point of view, it is more ethically responsible to serve those who are admitted into educational institutions.

College and university populations are also dramatically changing. Lifelong learning is becoming a necessity and adults are returning to complete educational goals that lead to employment (Desbiens, 1978). With unemployment rates in the United States and Canada increasing and very little sign of significant reduction, the adult learner has sought retraining in colleges that provide vocational education. Vocational-technical education has been reborn and those experiencing difficulties in obtaining satisfactory

employment have turned to education, under government support, to remedy their life situation. In addition, social factors have changed and adult women constitute the largest expanding population placing demands on colleges and universities. In Canada, the Federal Government's Canada Employment Commission is mandated to help employers obtain employees, and employees to seek jobs or preparation for jobs. The latter task is accomplished mainly by sponsoring individuals, who have been out of full-time work for one year, to return to a College of Applied Arts and Technology for upgrading in academic or specific skill training for a specific type of job.

The problem faced, however, by the colleges offering adult retraining programs is that some 55 percent (Sainty, 1971) drop out before completing programs. This attrition rate is particularly high since all programs are shorter than fifty-two weeks and most run for twenty to forty weeks in duration. It is not surprising that adults returning to school have difficulties. Generally, his/her previous school experience was negative, since most dropped out of school due to failure or psychosocial difficulties. In addition, the length of time out of school for adults is considerable. A recent study at St. Clair College found that 68 percent of adult retraining students had been out of college three or more years before returning to school, yet the average age was twenty-three (Desbiens, 1978).

Most attrition studies describe the individual demographically; however, the question is dynamically what has transpired for that individual? What behaviors have led to a lack of job retention or career planning? What psychosocial behaviors does he/she demonstrate and how might they be related to his/her career and educational situations? Which behaviors should be addressed in order to help the individual to persist in his/her education, so that he/she can become more employable and can realistically expect a career? Research is needed to study non-persisters as growing developing individuals.

Vocational Counseling

Historically, the vocational counseling field has been a trait factor field, in which the counselors match the client's traits against the traits of an occupation and assume that if a fit occurs, the person will be successful and satisfied (Super, 1974). However, Donald Super in his Career Pattern Study (1955) and in a subsequent follow-up by Super and Overstreet in 1960, began to formulate the concept of career maturity which addressed itself to the question of "how do we know that the individual is ready to choose or not?" In the Career Pattern Study, the focus was on looking at what is the career development process that an individual goes through in his/her lifetime. Super pictured vocational or career development as a continuous process, similar to conceptualizations held by other developmental theorists

(Harris, 1974). Super saw the organism as an essentially active, open system. Trait factor theory reflected a static, passive, closed system similar to classical mechanics.

Developmental Perspective

Harris (1974) states:

The direction of change in behavior is from the random, undifferentiated activity of the very immature to the more specific, differentiated yet organized and directed behavior of the mature organism. 'A consequence of this time-related and hierarchical character of behavior structure is that the organization process is directional and much of it is irreversible.'³ Inherent in the 'stage' concept of development is the idea that each successive stage presupposes the preceding ones. It follows if one of these is incomplete or insufficient, this deficiency will reverberate through all successive stages. It is this feature of a complex hierarchically organized structure that Erikson (1963) has emphasized in his description of personality development, which Buehler (1959) has described in the study of biography, which Havighurst (1953) calls "developmental tasks" in education, and which Piaget (1953, 1969) sees as essential in achieving the capacity to think abstractly and "experimentally" in cognitive development. The individual progressively moves from dependency to independence by acquiring skills and competencies necessary to perform adequately in ways valued by others; as he gains cognitive abilities which permit abstraction and generalization, he moves from a "now" to a "future" orientation; and as he moves from immediate to delayed gratification in his affective and impulsive life, he can increasingly select and commit himself to social as well as refined personal goals.⁴

³Werner, H., "The Concept of Development from a Comparative and Organismic Point of View," ed. D.B. Harris, The Concept of Development, (Minneapolis, Minn: University of Minnesota Press, 1957), p. 124.

⁴Harris, Dale B., "Developmental Psychology Looks at Career Development," Chapt. 7, in Measuring Vocational Maturity for Counseling and Evaluation, (Washington: A.P.G.A. Press, 1974), Donald E. Super (Ed.), p. 91.

The developmental view is a progressive sequential process whether maturity be in terms of psychosocial or career development. The factors identified with attrition or drop-outs are mere symptoms of a more central pattern or style of life. Certainly vocational or educational choices are major factors in an individual's life, but they symbolically represent the acting out of the individual's personhood in the world. One of the factors that Astin (1977) found correlated significantly with college attrition was frequency of smoking. Those who were very frequent chain smokers were a much higher risk than non-smokers. But non-smoking did not keep the individual in college! Non-smoking simply was symbolic of a more underlying behavior dynamic. This type of factor identification allows educators to develop profiles to screen out individuals from entering programs, and to whom programs of intervention ought to be delivered. However, drop-out profiles provide little direction in terms of how to address or fundamentally resolve underlying behavior patterns, or how to understand what is transpiring for that individual. Profiles are helpful in attacking immediate problems, for example, changing type of financial aid programs available so as to gain retention power. But what are the personality factors behind males preferring grants and females loans (Astin, 1977)? In the study reported here, the author attempted to grapple with an approach to the identification of psychosocial and vocational factors that may help identify underlying dynamics

and attitudes. The results reported should be able to provide assistance in the development of programs and environments that are more conducive to the types of adult individuals being admitted to colleges.

Scope of Study

To examine all aspects of psychosocial development and vocational development is far beyond the intended scope of this study. The investigation was limited to an inquiry into the psychosocial development perspective as theoretically conceived by Erik Erikson. Further elaboration on Erikson's theory is presented in the "Theory and Related Research" sections. From the vocational perspective, John Crites' definition of vocational maturity was used. Further elaboration of Crites' theory is presented in the "Theory Section" and chapter on "Related Research." The study intentionally was focused on a particular problem in education, persistence and non-persistence of adults returning to formal education, because of its relevance at this time. The adult student, who is older yet has not completed high school education, presents a unique problem to educators and college counselors. As extension programs, continuing education programs, and full-time retraining programs continue to expand, the need for further knowledge of the adult learner's uniqueness becomes more evident.

Purpose of the Study

The basic purpose of the study was to identify psychosocial and vocational maturity characteristics among persisters and non-persisters in adult academic upgrading programs (arts and sciences, business and commerce) at a community college. More specifically, the author intended:

1. To identify characteristics associated with attrition
2. To identify factors that provide direction for program development
3. To provide an opportunity to compare the concepts of psychosocial and vocational maturity as they relate to individual development
4. To identify the stages in psychosocial development and attitudinal factors of vocational maturity which influence persistence and non-persistence
5. To identify points at which intervention could be beneficially made

Hopefully, the outcome of the entire study is a clearer understanding of ways to help adults, returning to formal education, to complete successfully their educational and career goals. Theoretically, the study was undertaken in order to contribute to an understanding of the relationship between vocational maturity attitudes and psychosocial development, and how they help to explain reasons for persistence or dropping out of college. College counselors by using techniques suggested here may be able to identify "high" and "low" risk students. Direction is suggested for intervention with individuals following theoretical frameworks in the psychological and career maturity dimensions of counseling.

General Hypotheses Stated Prior to Study

1. There will be a significant relationship between the measure of vocational maturity ("Career Maturity Inventory," 1973) and the measure of psychosocial development ("Psychosocial Development Inventory," 1969).

2. There will be a positive relationship between scores on vocational maturity and the six positive scales of the psychosocial inventory. There will be a negative relationship between scores on vocational maturity and the six negative scales of psychosocial development.

3. Persisting students will demonstrate higher levels of psychosocial development than non-persisting students. Those who are able to complete college academic upgrading programs are more psychosocially mature according to Erikson's epigenetic stages of development as measured by Constantinople's "Psychosocial Development Inventory." Non-persisters will report more difficulty with developmental stages four (competency) than persisters. Incidentally, non-persisters also will report more difficulty with the first three stages than persisters.

4. Persisting students will demonstrate higher levels of vocational maturity than non-persisting students. It will be shown that a higher proportion of those who score higher on vocational maturity, as measured by John Crites' "Career Maturity Attitudinal Scale" will complete their planned educational goals than those who score low on the "Vocational Maturity Attitudinal Scale." Conversely, a

higher proportion of those who score low on the "Vocational Maturity Attitudinal Scale" will drop out than those who score high on the vocational maturity measure.

5. There will be a difference on psychosocial and vocational maturity by gender. Females will tend to demonstrate higher levels of psychosocial maturity and vocational maturity than males.

6. There will be a difference on psychosocial and vocational maturity by age. Older individuals will score higher on psychosocial and vocational maturity than those younger.

Operational Definitions

For the purpose of this study, the following operational definitions were used:

Vocational Maturity - is operationally defined by the raw score obtained on the "Career Maturity Attitudinal Scale" of John Crites' "Career Maturity Inventory."

Psychosocial Development - is operationally defined by the raw scores obtained on the twelve scales of Constantinople's "Psychosocial Development Inventory."

Persistence - is operationally defined as anyone completing his/her program of choice, discontinuing in order to take a full-time job, or still in adult retraining programs on July 1, 1979.

Non-Persistence - is operationally defined as anyone not completing his/her program of choice, or discontinuing but not obtaining a full-time job. The non-persistence group does not include anyone who is discontinued for academic or health reasons.

Theory

The purpose of this section is to expand on the theoretical concepts presented previously which form the basis of this study. To reiterate, the two basic concepts presented are: vocational maturity which is drawn from the vocational psychology field, and psychosocial development according to Erikson, which is drawn from the field of developmental psychology. The theoretical underpinnings of these concepts are presented here, while in Chapter II specifically related research is delineated. Basic research on persistence is included in this section.

Vocational Maturity

What constitutes vocational maturity? According to Lenore W. Harmon (1974):

Vocational maturity is being at the average level of vocational development for one's age, in the same way that mental maturity is being at the average level of intellectual development for one's age. . . . The first reason for measuring vocational maturity is to provide a normative understanding of just what level of vocational development can be expected from individuals of various ages.⁵

⁵Harmon, Lenore W., "Problems in Measuring Vocational Maturity: A Counseling Perspective," ed. Donald E. Super, Chapt. 6, Measuring Vocational Maturity for Counseling and Evaluation, (Washington: A.P.G.A. Press, 1974), p. 81.

Thus, individuals are expected to demonstrate at particular times certain attitudes and behaviors towards their vocational future. When an individual deviates from the social norm, he/she is either perceived to be precocious or retarded.

The terms "adjustment" and "maturity" are often confused. Super states:

Both are sometimes defined in normative and sometimes absolute terms, each kind of definition having serious conceptual defects. But adjustment is appropriately defined as the outcome of behavior, i.e., in terms of success and satisfaction. Maturity is best defined as the repertoire of coping behavior leading to outcomes, compared with the behavior repertoire of the peer group, thus making it a developmental rather than an outcome construct. The degree of maturity attained by an individual determines, in part, his adjustment, for adjustment requires an appropriately developed behavioral repertoire for satisfactory outcome.⁶

Therefore, "adjustment" is dependent on "maturity."

Donald Super, in his Career Pattern Study (1955), was the first to present a theoretical model of vocational maturity. This model consisted of six dimensions and, within them, twenty indicies. Super's final model of vocational maturity was operationally defined as the repertoire of behaviors indicated in Table 1.1 for a particular reference group, i.e., ninth graders. Super felt it was "The place reached, by an individual on the continuum of vocational

⁶Super, Donald E., "Vocational Maturity Theory: Toward Implementing a Psychology of Careers in Career Education and Guidance," Chapt. 1, Measuring Vocational Maturity for Counseling and Evaluation, (Washington: A.P.G.A. Press, 1974), Donald E. Super (Ed.), p. 9.

Table 1.1

A Factor Analytic Model of Vocational Maturity in Ninth Grade
(Developed by Donald Super, 1957)⁷

- | | |
|------------|--|
| Factor I | Planning Orientation |
| | A. Acceptance of responsibility |
| | B. Specificity of information (more immediate types) |
| | C. Specificity of planning |
| | D. Steps taken to obtain information |
| | E. Awareness of the need for choices |
| Factor II | The Long View Ahead |
| | A. Awareness of the need for ultimate choices |
| | B. Specificity of information (remoter types) |
| | C. Entry planning |
| | D. Awareness of factors in choice |
| | E. Awareness of contingency factors |
| | F. Acceptance of responsibility |
| Factor III | The Short View Ahead |
| | A. Specificity of planning |
| | B. Awareness of the need for immediate choices |
| | C. Acceptance of responsibility of choice |
| | D. Steps taken to obtain information for high school |
| Factor IV | The Intermediate View |
| | A. Awareness of factors in choice |
| | B. Awareness of need for intermediate choices |
| | C. Specificity of post-high school plans |
| | D. Awareness of contingency factors |

⁷Super, Donald E., "Vocational Maturity Theory: Toward Implementing a Psychology of Careers in Career Education and Guidance," Chapt. 1, Measuring Vocational Maturity for Counseling and Evaluation, (Washington: A.P.G.A. Press, 1974), p. 9.

development from exploration to decline that determined their vocational maturity."⁸ The assumption is that vocational behavior matures for most individuals as he/she progresses from late childhood through adolescence to early adulthood.

John Crites, building on Super's theory of vocational development, classified the various vocational maturity indices as: consistency, wisdom, choice attitudes, and choice competencies (Crites, 1973, 1976). He treated separately the affective or attitudinal, and the cognitive or intellectual aspects of choice making. The important contribution of Crites' model is this distinction between cognitive and attitudinal variables, and the clarity with which he depicts them. (See Table 1.2)

Other researchers have elaborated on the vocational maturity concept but primarily within the context of Super's and Crites' conceptual framework. For instance, Westbrook and Mastie (1973) have elaborated on the cognitive component of vocational maturity. It was their contention that the cognitive component accounts for a substantial proportion of the variance of vocational maturity scales (Westbrook, Parry-Hill, and Woodbury, 1971). Towards that end they developed the "Cognitive Vocational Maturity Inventory" to measure those aspects. Forrest and Thompson (1971)

⁸Idem, "Dimensions and Measurement of Vocational Maturity," Teachers College Record, 1955, 57, p. 153.

collaborated with Super to develop the "Career Development Inventory" which measures the components of Super's concept of vocational maturity. Crites has developed the "Career Maturity Inventory" to measure his theoretical definition. These instruments are discussed in Chapter III.

The concept of vocational maturity is thus a relatively new concept which has gained acceptance because of its value in measuring an individual's progress in accordance with an expected schema and within a proper time frame. The specific components of vocational maturity vary according to theorists. Most agree that it is the process of choice of a career, specific skills (for example, problem solving, planning, self-appraisal, goal selection, occupational information) and specific attitudes (for example, involvement, orientation, independence, preference, conception) that comprise the concept.

In the current study, the assumption was made that vocational behavior matures for most individuals as he/she progresses from childhood to adulthood (monotonically) and that vocational maturity incorporates attitudinal and cognitive factors. This study focused on the attitudinal components. The cognitive components of Crites' model are tangible; for example, the consistency of career choice is reflected in a person's life situation and the realism of career choice can be measured by available instrumentation. Specific skill programs in problem solving are available.

The attitudinal factors have been found to be reflective of an individuals' basic position on career choice. Also, the components of the attitudinal scale (involvement, orientation, independence, preference, conception) appear relevant to other concepts of psychosocial development and persistence.

Psychosocial Development

Erik Erikson in his classic work, Identity, Youth and Crisis (1968), presented his theory of psychosocial development. When Erikson describes psychosocial development, he is essentially focusing on the emergence and development of the ego, a selective, integrating coherent agency "which bridges one's inner life and social roles."¹⁰ He contends that the development of the ego and a sense of identity follows the epigenetic principle that "anything that grows has a ground plan . . . and out of this ground plan the parts arise, each part having its time of special ascendancy, until all parts have arisen to form a functioning whole."¹¹ His epigenetic chart is outlined in Table 1.3.

According to Erikson, each stage of psychosocial development involves some important crisis which is the outcome of a socially posed problem, which is the result of

¹⁰Erikson, Erik H., Insight and Responsibility, (New York: W.W. Norton and Co., 1964), p. 148.

¹¹Idem, "Identity and the Life Cycle," Psychological Issues Monograph, vol. 1, (New York: International Universities Press, 1959), p. 52.

Table 1.3

Erikson's Epigenetic Chart¹²

									INTEGRITY versus DESPAIR
								GENERATIVITY versus STAGNATION	
								INTIMACY versus ISOLATION	
Temporal Perspective versus Time Confusion	Self-Certainty versus Self- Consciousness	Role Experimentation versus Role Fixation	Apprenticeship versus Work Paralysis	IDENTITY versus IDENTITY CONFUSION	Sexual Polarization versus Bisexual Confusion	Leader-and Followership versus Authority Confusion	Ideological Commitment versus Confusion of Values		
			INDUSTRY versus INFERIORITY	Task Identification versus Sense of Futility					
		INITIATIVE versus GUILT		Anticipation of Roles versus Role Inhibition					
	AUTONOMY versus SHAME, DOUBT			Will to Be Oneself versus Self-Doubt					
TRUST versus MISTRUST				Mutual Recognition versus Autistic Isolation					

¹²Erikson, Erik H., Identity, Youth and Crisis, (New York: Norton, 1968), p. 94.

the interaction of three domains: a person's physical stage; his encounter with society and the social roles he plays; and his internal ordering of those experiences, his ego functioning. The components of an individual's personality are determined by the manner in which these successive crises are resolved. The successful resolution of the crisis of that first stage is viewed as resulting in the development of Basic Trust, while an unsuccessful resolution is seen as leading to development of Basic Mistrust. In actuality Basic Trust and Basic Mistrust is a continuum with most individuals falling between these extremes. The six continuum representing the personality components thought to develop during the six stages from birth through late adolescence and early childhood are:

1. Basic Trust versus Basic Mistrust
2. Autonomy versus Shame and Doubt
3. Initiative versus Guilt
4. Industry versus Inferiority
5. Identity versus Identity Confusion
6. Intimacy versus Isolation

The major assumption in Erikson's theory is that the more successful an individual is in resolving the crisis at each stage, the greater his/her degree of psychosocial maturity. This is due to the fact that the epigenetic scheme creates a central psychosocial task. The individual must ask and answer the questions: "Who am I?" "What will I be?"

Knefelkamp points out that:

If a person fails to undertake the identity task or is unable to find his way, he risks role confusion, a pervasive sense of alienation or diffusion in which he is unsure of the meaning in his life and drifts along on the path of least resistance.¹³

Knefelkamp further states:

Erikson argues that coming to a sense of identity is most often tied to the making of vocational and ideological commitments. To participate in society, the young adult must establish a vocational direction and value orientation. These more concrete or visible aspects of identity both derive from and contribute to the 'sense of identity' which Erikson emphasizes as the central outcome of this life stage. The issue of vocational choice often appears to be the focal point of the broader identity resolution task for men. Erikson is less clear about the nature of identity resolution for women. Douvan and Adelson (1966) suggest that it is substantially different. They argue that the issue of intimacy is intertwined or concurrent with self-definition and suggest women tend to establish identity around central relationships. Certainly with changing women's roles the issue of identity resolution may alter in form; in fact, the integration of vocational and family roles may be the focus of the identity task for some young women. Certainly this area needs further clarification as new roles for men and women emerge.¹⁴

Basically, the six stages represent the continua that would need to be successfully traversed by young adults typically returning to college for academic upgrading. The above is assumed in this study. Erikson's theory is of particular benefit in that it states specific developmental tasks to be mastered during specific periods in a person's life if that individual is to develop to maturity. It

¹³Knefelkamp, Lee, et al., "Applying New Developmental Findings," New Directions for Student Services, (San Francisco: Jossey-Bass Inc., 1978), no. 4, p. 5.

¹⁴Ibid., p. 6.

therefore offers a way of thinking against which we can measure who our students are and how the college environment may inhibit or enhance their development. (Knefelkamp, 1978) The author intends to demonstrate that there is a significant relationship between psychosocial maturity and persistence, and therefore provide a systematic framework in which to view behavior. Several researchers have found Erikson's theory a fruitful foundation on which to base studies of college students (Marcia, 1966; Waterman, 1970; Bronson, 1959; Stark and Traxler, 1974). Erikson's concepts appear to provide an appropriate theoretical framework for the proposed population sample.

James E. Marcia (1966) found that students with high ego identity performed best on concept-attainment tasks. Marcia's findings provided support for the contention that the resolution of the ego identity stage is crucial if one is to face such adult tasks as getting a job or being a contributing citizen (Marcia, 1966). Erikson saw "ego identity" and "identity diffusion" as polar outcomes of the psychosocial crisis occurring in late adolescence. He also viewed this phase of the life cycle as a time of growing occupational and ideological commitment.

Alan S. Waterman (1970), using Marcia's four category classification (identity achievement, moratorium, foreclosure, identity diffusion), found:

Students who were in the process of going through an identity crisis over occupational choice have the least favourable evaluation of their education, not

surprisingly, students who had never experienced a crisis and were committed to a vocational goal, held the most favourable attitudes.¹⁵

Clearly implied in Waterman's study on ego identity and satisfaction with college was the implication that lack of resolution of the ego identity stage could lead to lack of persistence.

Gordon Bronson (1959), in his study on "Identity Diffusion in Late Adolescence," found evidence to indicate that when a person is in a state of identity diffusion he/she will:

(a) be less certain about relationships between past and present notion of self, (b) show a higher degree of internal tension and anxiety, (c) be less certain about dominant personality characteristics, and (d) fluctuate more in their feelings about self.¹⁶

In addition, he found that:

Different resolutions to the problem of identity diffusion will lead to diverse personality characteristics in the adults. A premature identity closure can lead to a rigid denial of potentially positive personality components. On the other hand, a prolonged period of identity diffusion, which is conducive to a more complex manifest personality, may also interfere with the solid identity synthesis necessary for effective social interaction.¹⁷

Perhaps the difficulty some Ph.D's have in obtaining employment may be due to psychosocial factors rather than socio-economic conditions of the times. On the other end of the

¹⁵Waterman, Alan S. and Caroline K. Waterman, "The Relationship Between Ego Identity Status and Satisfaction with College," The Journal of Educational Research, vol. 64, no. 4, 1970, p. 165.

¹⁶Bronson, Gordon W., "Identity Diffusion in Late Adolescents," Journal of Abnormal and Social Psychology, 1959, 59, p. 414.

¹⁷Ibid., p. 416.

spectrum, those individuals who leave school at the lower educational levels may be forced into premature closure leading to rigidity in personality and narrowness in perceived potentiality.

Stark and Traxler (1974) found support for Erikson's hypothesis that ego identity processes crystalize in late adolescence and that there exists an adolescent identity crisis. They found a significant negative correlation between anxiety and ego identity which provided additional construct validity for the ego identity scale. In addition, they found that females reported significantly less ego diffusion than males in age groups 17 to 20 and 21 to 24. Erikson's theory also stressed that although adolescence is a stage of overt crisis involving ego identity, identity formation does not begin or end in adolescence, but rather is a life-long process. Stark and Traxler found that delaying college attendance facilitated ego identity crystallization, thus finding support for Erikson's position that social experiences lessen ego diffusion. Donald E. Jabury (1967), in his dissertation on "Identity Diffusion as a Function of Sex Role," concluded that identity formation is different for males and females. For males, vocational choice seemed to be the largest determinant of identity but "Girls are clearly more vague regarding vocational goals. The range of job choices is quite restricted and clusters in highly

visible and traditionally feminist occupations."¹⁸ Douvan and Adelson in their 1966 work, Adolescent Experience, explain the differences as follows:

The boy tends to concretize identity through anchoring it in an often premature vocational choice; the adolescent girl does not ordinarily have this opportunity. Girls tend to keep identity diffuse. The boy is made to feel (however much he may doubt it deep down) that his identity is in his own hands; that the choice of vocation and with it life-style, will define him. Girls cannot count on this degree of active preferment in identity; she is dependent on what her future husband will be. . . . She seems much more comfortable in the present; her version of the future is necessarily dim, and to this extent identity formation (as far as it depends on anchorage to the future) is likely to remain incomplete.¹⁹

Therefore, chronological age and sex differences are clearly important variables in ego identity (Erikson, 1959).

Erikson's theory of psychosocial development has been validated in studies on college student populations. The emphasis in these studies has been primarily on ego development at the Identity-Identity Diffusion stage. These findings raise further questions. Do prior stages lacking resolution make the late adolescent-young adult identity crisis more pronounced as Erikson hypothesized? Do those who have serious lack of resolution of earlier psychosocial crisis even make it to college? Do adults returning to school demonstrate a more crystallized identity, as Stark

¹⁸ Jabury, Donald E., Identity Diffusion as a Function of Sex Roles: In Adult Women, Unpublished Dissertation, Michigan State University, 1967, p. 7.

¹⁹ Douvan, E. and J. Adelson, Adolescent Experience, (New York: Wiley, 1966), p. 353.

and Traxler found in their sample, or will adults who have not successfully completed high school and dropped out be characterized by identity diffusion? If Erikson is correct in referring to identity diffusion as being characterized in the individual by an inability to establish a vocation or station in life, and to commit themselves to an occupational or ideological position, then there would appear to be a relationship between psychosocial immaturity and vocational immaturity.

The Canada Employment Commission has been established to meet the needs of those adults who are having difficulties seeking and maintaining a job. It would seem reasonable to infer that Canada Employment Commission referrals for retraining could be characterized by identity diffusion and lack of earlier stage resolution.

For this study, the following assumptions are drawn from psychological developmental theory:

1. Development is a life-long process
2. There are definable stages of development
3. There is a hierarchical nature to the stages of development and each stage needs to be resolved or its lack of resolution reverberates throughout successive stages. In other words, adjustment is easier if development has occurred successfully

Persistence

Studies on attrition, withdrawal, and persistence have become prominent during the past five years as colleges

brace themselves for declining enrollments due to the dwindling supply of high school graduates. Historically, the topic has not stimulated great research efforts. The vast majority of studies were satisfied to list the basic characteristics of drop-outs, for example, age, sex, marital status, educational level, program major, entry G.P.A., place of residence, expectations, and stated reasons for withdrawal (Verner and Davis, 1964). Most studies simply use some form of questionnaire administered to drop-outs at the time of his/her exiting or a review of the student's institutional file (Flegg, 1978). More recently, follow-up techniques using phone surveys (Brooker, 1975), counselor exit interviews (Desbiens, 1977), or national mail surveys (Astin, 1975) have attempted to gain more depth by: delineating more characteristics of drop-outs; providing better statistical analysis; and covering more comprehensive samples.

In The American College, J. Summerskill (1962) summarized forty years of research on college student drop-outs. He found "existing knowledge to be fragmentary, inadequate, and inconclusive."²⁰ Psychological and sociological studies were notably absent, although the categories of personal and social maladjustment were often listed. In a similar vein, A. Spady (1970) pointed out the glaring

²⁰Summerskill, J., "Drop-outs from College," ed. N. Sanford, The American College, (New York: John Wiley and Sons, Inc., 1962), p. 69.

absence of "analytical explanatory categories, which might focus on isolating mechanisms that would explain drop-outs."²¹ Spady used a sociological model to assess the drop-outs' process and addressed his study to the issue of interpersonal relationships. His basic conclusion was that "interpersonal relationships facilitate greater integration of the student into the social system of the institution."²²

Alexander Astin (1975) has undertaken perhaps the most energetic study on drop-outs. His research team studied 41,356 respondents nationally (U.S.A.) from all types of colleges and universities. He used the "multiple linear regression" technique to predict high risk characteristics of college students. He defined the who and why of drop-outs based on self-reported descriptions of basic characteristics. He looked at the effects of financial aid, employment, residence, college characteristics, and environment, and developed a worksheet that can be used by staff or students to identify probability of persistence. He stated that his formula with its weighted elements can be helpful by: identifying individuals; identifying criteria that would lay the basis for new programs; and assist students to recognize behaviors that represent non-persistence. The major theme of Astin's study was very similar to Spady's.

²¹Spady, W., "Drop-outs from Higher Education: An Interdisciplinary Review and Synthesis," Interchange: A Journal of Education Studies, Chapt. 2, 1971, p. 38.

²²Ibid., p. 58.

Astin concluded that involvement represented the major difference between persisters and non-persisters. Astin defined persistence as:

Any student who, at the time of the 1972 follow-up, satisfies one of the following conditions: (1) is enrolled full time in a graduate or professional school; (2) has earned their B.A. (or higher) degree; or (3) has completed four years of college, is still enrolled full time, and is still pursuing at least the bachelor's degree.²³

In the present study, a "persister" was defined as anyone who completed the program for which they enrolled or who obtained full-time employment or was still in school on July 1, 1979.

If indeed the quality of interpersonal relationships and personal involvement are critical factors in persistence, then perhaps Erikson's first four stages may be crucial. The lack of resolution of the development of trust, autonomy, initiative, and industry perhaps lays the basis for lack of involvement in tasks and relationships. It is suggested that the underlying feelings of shame and doubt or inferiority are prohibiting students from completing their educational goals.

Summary

In this chapter, an attempt was made to inter-relate the basic concepts of vocational maturity and psychosocial maturity. Theoretically, the concept of identity diffusion

²³Astin, Alexander W., Preventing Students from Dropping Out, (San Francisco: Jossey-Bass, Inc., 1975), p. 9.

has been supported in earlier research. Identity resolution seems to be related to characteristics of late adolescence that are incorporated in the construct of vocational maturity. Both vocational and psychosocial maturity are normative and provide ways of viewing the developing personality. Both concepts of maturity are hierarchical. This implies that an individual progresses incrementally and if certain factors or skills are not obtained or resolved they will progressively impede further development.

This study made the assumption that lack of persistence is a symptom of a more central pattern or style of life. This style of life is part of a general process of development and lack of persistence is a reflection of the lack of resolution of certain stages or attitudes in that general development.

Overview of the Study

Studies on persistence traditionally have not used a psychosocial developmental approach. In order to understand better the reasons for lack of persistence in college, it is crucial to go beyond a mere description of the student's present demographic situation. A psychosocial interpretation can provide direction for counseling and program development that can assist in the student's adjustment to college and life. Many of the proposed solutions to adult job acquisition have centered on specific tasks like learning how to write a resume' and take an interview. Vocational

factors should be viewed in a general development framework, and it is suggested that only then can a comprehensive approach to job acquisition and maintenance be attained.

The author empirically explored the relationship between psychosocial development as described by Erik H. Erikson and measured by the "Psychosocial Development Inventory," and vocational maturity as described by John Crites and measured by the "Career Maturity Inventory Attitudinal Scale." The first six stage crisis outlined by Erikson were explored as variables influencing vocational maturity and persistence in college retraining programs. Students scoring differently on vocational maturity were compared for differences on Eriksonian stage resolution. A significant relationship was expected to exist between vocational maturity, psychosocial development, and persistence.

Chapter II contains further elaboration on the basic concepts under investigation and relevant research conducted to date. In Chapter III the design and analysis of the current study is presented. Special attention is given to defining the sample, instrumentation, procedures, and methods of analysis of the hypotheses tested. Chapter IV is devoted to reporting the results obtained. Chapter V contains a summary of the findings, a statement on the limitations of the present study, and a discussion of the implications for future research.

CHAPTER II

RELATED RESEARCH

This study focuses on three related areas of investigation. Presented in this chapter are research studies directly related to persistence, psychosocial development of college students, and vocational maturity of college students.

Persistence

J. Summerskill (1962), in reviewing some forty years of studies conducted on college student attrition, stated: "Previous research arose chiefly on institutional or administrative concerns, and only rarely has the process of attrition been analyzed in psychological or sociological terms."²⁴ Even the vast majority of recent college studies (Astin, 1978; Flegg, 1977; Brooker, 1975) still emphasize simple listing of the characteristics of drop-outs. Verner and Davis (1964), in their review of twenty-six studies from 1928 to 1963 on adult education completion and drop-outs, concluded that "no other aspect of adult education so

²⁴Summerskill, J., "Drop-outs from College," The American College, N. Sanford (Ed.), (New York: John Wiley and Sons, Inc., 1962), p. 627.

badly needs systematic and creative basic research."²⁵ They came to this conclusion following the analysis of some eighteen situational factors and twenty-six personal factors without any conclusive results. The psychosocial factors considered in these studies were only related to intelligence, anxiety, motivation, and social participation. Therefore, the history of research on persistence does not include an in-depth look at the nature of the personalities of our college students.

Two studies have been conducted on persisters and drop-outs using Canada Manpower Retraining Program students (Truesdell, 1975; Sainty, 1971). L.R. Truesdell (1975) examined the extent and nature of the relationship between discontinuity in various retraining programs and input variables by employing a dummy variable multiple regression model in an attempt to be predictive. Since his methodology was a predictive variable approach, his study cannot be considered developmental. With regards to these findings, Truesdell reported that the place of residence of an individual was the most important factor related to discontinuation. In decreasing order of importance were the following factors: pre-training occupation, with the service occupations recording the largest probability of discontinuation; those indicating dissatisfaction with their course demonstrated a

²⁵Verner, Coolie and G.S. Davis Jr., "Completers and Drop-outs: A Review of Research," Adult Education, XIV, 1964, p. 173.

greater tendency to withdraw; and students who were totally unemployed before entering training. Other factors Truesdell found to be significant were age, pre-training income, and years of schooling. Those in the lower age group (eighteen to twenty-four) demonstrated a greater tendency to withdraw from training than the twenty-five to thirty year old group. Truesdell's findings support the contention that young adults drop out more frequently than older adults. Erikson's theory of identity crystallization may be one explanatory factor why older students are the most likely to stay in college.

Truesdell did not find support for the contention that drop-outs tended to come from lower income groups. In fact, the higher income groups were the most likely to have withdrawn from training programs. It was shown that students with more education were less likely to discontinue training. Truesdell concluded that in order to increase the probability of retention, administrators should give preference to low income groups, to individuals with an educational level necessary to complete their course, to persons coming from rural agricultural occupations, and to persons demonstrating a capacity to be stably employed. Implied in Truesdell's study is that certain factors are linked to psychosocial development and they may be more important than socio-economic factors.

George E. Sainty (1970) also utilized a multiple linear regression technique to analyze personal data forms

on retraining students. He found that he could predict after the fact drop-outs or completions 86.5 percent of the time using data based model. He incorporated into his design measures of aptitude (Gates reading "speed and accuracy" test, Gates vocabulary test, and Gates comprehension test). One outcome of Sainty's study was a profile of a drop-out. The non-successful candidate was described as a person who:

1. Was less intelligent
2. Had a lower speed and accuracy score on the Gates Reading Survey
3. Had a lower vocabulary score on the Gates Reading Survey
4. Had a lower comprehension score on the Gates Reading Survey
5. Was younger
6. Had completed fewer grades at school
7. Had repeated more grades in school
8. Had either not attended high school or else was not likely to have taken an academic course in high school
9. Was more likely to have failed to complete any further education that he/she had undertaken
10. Was from a lower social position (Hollingshead Scale)
11. Was from a lower occupation scale (Blisshen Scale)
12. Had a father who was from a lower occupational class
13. Was more likely to be downwardly mobile in social position
14. Was more likely to be downwardly mobile in occupational class
15. Changed jobs more often than his counterpart in his previous twelve months

16. Had a lower rate of pay in his last steady job
17. Was less likely to speak a second language,
French included

Sainty stated that "by using appropriate prediction techniques adult educators will be able to identify those students who need special assistance in order to succeed in their program."²⁶ His emphasis was on the identification of potential drop-outs. Sainty's and Truesdell's methods are helpful in admission processes for selection and for identification. However, they are not very helpful in providing directions for intervention. Unfortunately, no studies have been conducted on adult retraining students from a developmental or psychosocial perspective.

Several developmental studies related to the current investigation have been conducted recently at universities (Near, 1977; Calder, 1977). In 1977, John E. Near used the "Omnibus Personality Inventory" to compare persisters and non-persisters, and he found that persisters appeared to be more independent of family ties and more ready to experience new areas of endeavour. Using Erikson's scheme, these factors appear to be related to autonomy and initiative. He also found persisters displayed more self-confidence, more self-acceptance, less anxiety, and a greater tendency for absence of emotional disturbance. Persisters displayed more

²⁶Sainty, Geoffrey E., "Predicting Drop-outs in Adult Education Courses," Adult Education Journal, vol. XXI, no. 4, 1971, p. 230.

concern for the feelings and welfare of others. They also appeared more realistic than non-persisters in making plans for the future. Since planfulness is a crucial part of vocational maturity, it would appear that the persisters, who were more stable, demonstrate this both in psychosocial and vocational areas, as theoretically predicted in this study. He also found that persisters perceived their families as more accepting, cooperative, friendly, and helpful. Since the persister did not differ from non-persisters in such factors as high school class rank, A.C.T. composite scores, and college G.P.A., it appears that Near's study supports the contention that psychosocial factors are a major contributor to persistence. The successful use of the "Omnibus Personality Inventory" lends support to the validity of psychological assessment.

W. Berry Calder (1977) used the "Developmental Task Inventory" to assess differences between persisters and voluntary withdrawals from a Canadian university. Basically, he found that "students withdrawing voluntarily. . . exhibit a developmental level which is relatively lower than that exhibited by students who do not withdraw, especially on the tasks of developing autonomy and developing purpose."²⁷ More specifically on the developing autonomy task, Calder states that it "would seem to indicate that drop-outs had

²⁷Calder, W. Berry, et al., Student Withdrawals: A Developmental Perspective, Waterloo, Ontario, April 1977, p. 47.

not yet achieved the same level of maturity as persisters in developing skills contributing to working with others and accepting appropriate support from people in their environment."²⁸ This resembles the interpersonal relationship factor delineated by Near (1977). This factor was further reinforced in Calder's study. A significant difference was found on the sub-tasks, developing mature interpersonal relationships. Under the category of developing purpose, the sub-task, mature life-style planning, distinguished between groups "with drop-outs achieving a lower level of integration and commitment to plan for the future and having less sense of direction in terms of identifying steps to pursue."²⁹ This lack of direction also appears to be similar to what Astin (1977) described as crucial to retention, a sense of belonging and involvement.

Calder's use of the "Developmental Task Inventory" was successful in identifying psychosocial tasks that differed for persisters and non-persisters. Those reaching significance also resembled Erikson's categories of intimacy, autonomy, initiative, and industry.

The findings of these studies using the "Omnibus Personality Inventory" and the "Developmental Task Inventory" provide greater insight into the personality differences between persisters and non-persisters. They assist in

²⁸Ibid., p. 35.

²⁹Ibid., p. 37.

recognizing more appropriate psychological intervention systems, and the usefulness of psychological assessment. However, the instruments used are not reflective of a systematic theory of personality development and, therefore, it is suggested that they provide less of a framework for intervention than is desired.

Psychosocial Development

In 1969, Anne Constantinople reported a cross-sectional study she conducted at the University of Rochester. She used a questionnaire (derived from Wessman and Rick's Q sort, 1966) to measure personality development of university students in Freshmen through Senior years. The items were based on success or non-success of the theoretical stages of ego development of Erik Erikson. In her initial study, she found significant differences between Freshmen and Senior scores on Industry, Inferiority, and Identity for both sexes, and for males on Identity Diffusion. Two follow-up studies indicated that, within the same subjects, changes in the expected directions occurred on Identity, Identity Diffusion, and Isolation, but not on Industry or Inferiority. Males showed a clearer pattern of increasing maturity over their four college years than did females. The only area in which the females seemed to be more mature than males as Seniors was that of Industry versus Inferiority. She concluded that the college environment is more conducive to growth among males than among females. Constantinople

did not control for mortality. The shifts in scales could possibly be accounted for by attrition. Those not persisting would likely be less mature, and higher scores on the average for Seniors could account for differences. Also, since the males' attrition rate is typically higher (Astin, 1975), this could have accounted for sex differences in senior years. Constantinople notes this potential bias in her study and theorizes that those who are low on Industry and high on Inferiority may have left college, and those who participated in her study may be more concerned about Identity-Identity Diffusion issues. Her study offered some empirical support for Erikson's theory, and the establishment of an instrument to measure psychosocial development of college students. She also established the first college norms which opened up the possibility of investigating the college careers of students whose pattern of development deviates from the norm.

After the establishment of the "Psychosocial Development Inventory" by Constantinople, other researchers were able to use it (Waterman, 1976; Munley, 1973). Alan S. Waterman studied the relationship between psychosocial maturity and Freshmen expectations about college. He found that successful psychosocial development was related to high expectations concerning the faculty, administration, fellow students, and the student's major field of study. Waterman reported that "psychosocially mature students have high expectations and are motivated to take maximum advantage

of the opportunities available while the less mature student may not be sufficiently successful in making proper use of opportunities"³⁰ which may lead to dissatisfaction and potentially withdrawal. He also found that Identity and Intimacy were factors contributing most to the prediction of positive expectations about college. The importance of these two stages is understandable since they were the most recent developing components and the ones most likely to show relatively large individual differences for entering college students.

Patrick H. Munley (1973) used Erikson's theory to study vocational behavior. His major theoretical concerns were similar to those investigated here. He wished to explore the relationship between psychosocial development and vocational choice behavior. He used the "Psychosocial Development Inventory" and "Dignan Ego Identity Scale" to establish scores on the first six stages of Erikson's theory of development. Three vocational variables were assessed: vocational choice by Trow's "Vocational Choice Inventory" (1941); problems in vocational choice by using Crites' diagnostic classifying system of vocational choice problems based on the results of the "Strong Vocational Interest Blank"; and vocational maturity by the attitude scale of Crites' "Career Maturity Inventory." He found support for

³⁰Waterman, Alan S., "Relationships Between the Psychosocial Maturity of Entering College Freshmen and Their Expectations About College," Journal of Counseling Psychology, 1972, p. 45.

Tiedeman and O'Hara's belief that "career development takes place within the context of psychosocial development as described by Erikson."³¹ Individuals who are more successful in dealing with the vocational development tasks of achieving mature career attitudes and making adjusted vocational choices also demonstrated the highest level of positive stage resolution attitudes. Munley's sample was 123 male college students in an introductory psychology class. His findings provide support for continuing the study of these two concepts with a different sample and in a different educational context.

A study of psychological maturity and vocational adaptation was also carried out by Douglas H. Heath (1976). He used the "Minnesota Multi-Phasic Personality Inventory" to measure personal adjustment, the "Strong Vocational Interest Blank" to measure interests, and the "Study of Values" to measure values. He conducted a longitudinal study on the maturing of professional and managerial men. He concluded that "psychological maturity, whether measured when an adolescent or adult, more than a decade later very consistently predicted vocational adaptation."³² He also

³¹Tiedeman, D.V., and R.P. O'Hara, Career Development: Choice and Integration, (New York: Entrance Examination Board, 1963), p. 17.

³²Heath, Douglas, "Adolescent and Adult Predictors of Vocational Adaptation," Journal of Vocational Behavior, 9, 1976, p. 19.

found support for a dimensional model of maturing that identifies the personality traits associated with good vocational adaptation of professional and managerial men. The traits of the adaptive worker were that he: had a more accurate understanding of how his wife, friends, and colleagues thought of him; is more tolerant, socially responsible, sociable, appropriately emotionally accommodating in his relationships; has more stable interests and values; had resiliency in recovering from stress; was autonomous; and had good cognitive processes. In summary, Heath found support for the idea that working on interpersonal problems will help with the vocational adjustment of professional managerial men. Conversely, if vocational adaptation for these men is increased, then one could expect increases in functional competency in other roles, such as marriage, and sexuality.

Josh Martin and Carolyn Redmore (1978) studied the relationship between ego development, as measured by the "Washington University Sentence Completion Test of Ego Development" (WU-SCT) and vocational attitudes and vocational plans, as measured by the "Career Maturity Inventory-Attitude Scale." They found that: at no age did males have significantly higher ego levels than females; there was a significant increase in ego development from the sixth through twelfth grade; and vocational maturity was significantly related to vocational development $(55) = .33$ $p < .02$. Although they used J. Loewinger's (1976)

theory and instrumentation for ego development, this study provides support for the assumption made in the present study that vocational maturity is related to psychosocial development.

The study of psychosocial development based on the Eriksonian model was first made possible by Wessman and Ricks (1966) who devised a Q sort, based on Erikson theory, to measure elation-depression. With a slight modification of the sixty item scales developed by Wessman and Ricks, Constantinople (1969) was able to develop a sixty item, seven-point rating scale questionnaire that measured the first six stages of development in Erikson's theory. This method yielded comparable data with correlations between Q sort and seven-point form ranging from .68 to .96 on six controls for Industry, Identity, and Intimacy. Reliability estimates ranged from .45 on Identity Diffusion to .81 on Intimacy with a median of .70. Constantinople concluded that "the psychometric status of the Eriksonian measure is adequate but not impressive."³³ However, she did provide an instrument that was able to be utilized in future studies, such as Waterman's 1976 study on psychosocial maturity and college expectations; Munley's 1973 study on psychosocial maturity and vocational choice; Sommers' 1979 study on women's identity; and Constantinople's own 1969 study on

³³Constantinople, A., "An Eriksonian Measure of Personality Development in College Students," Developmental Psychology, 1, 1969, p. 359.

personality development of college students. Other studies like that of Heath (1976) on psychological maturity and vocational adaptation and also Martin and Redmore (1978) emphasized the importance of being able to measure vocational and personal development within a theoretical model.

Vocational Maturity

Paralleling the development and research on psychosocial stage theory was that of vocational development. Donald Super and Associates (1957) outlined five life stages and the major vocational developmental tasks of these stages, drawing on Buehler's (1959) theory of psychological development and the life stages of growth, exploration, establishment, maintenance, and decline. Each of these life stages is seen as characterized by certain tasks which the individual in that stage encounters and with which they must successfully cope before they can progress to the next stage. Examples of specific developmental tasks outlined by Super are contained in Table 2.1. From the conceptualization of the vocational life stages, evolved the concept of maturity which Super (1959) defined as "the place reached on the continuum of vocational development from exploration to decline."³⁴ The existence and differentiation of vocational life stages was theorized and researched by others such as:

³⁴Super, Donald E., "Vocational Maturity Theory: Toward Implementing a Psychology of Careers in Career Education and Guidance," (Donald E. Super, Ed.), Chapt. 1, Measuring Vocational Maturity for Counseling and Evaluation, (Washington: A.P.G.A. Press, 1974), p. 153.

Table 2.1

Super's Developmental Stages
(Attitudes and Behaviors Relevant
to Vocational Development Tasks)

1. Crystallization (14-18)
 - a. awareness of the need to crystallize
 - b. use of resources
 - c. awareness of factors to consider
 - d. awareness of contingencies which may affect goals
 - e. differentiation of interests and values
 - f. awareness of present-future relationships
 - g. formulation of a generalized preference
 - h. consistency of preference
 - i. possession of information concerning the preferred occupation
 - j. planning for the preferred occupation
 - k. wisdom of the vocational preference
2. Specification (18-21)
 - a. awareness of the need to specify
 - b. use of resources in specification
 - c. awareness of factors to consider
 - d. awareness of contingencies which may affect goals
 - e. differentiation of interests and values
 - f. awareness of present-future relationships
 - g. specification of a vocational preference
 - h. consistency of preference
 - i. possession of information concerning the preferred occupation
 - j. planning for the preferred occupation
 - k. wisdom of the vocational preference
 - l. confidence in a specific preference
3. Implementation (21-24)
 - a. awareness of the need to implement preference
 - b. planning to implement preference
 - c. executing plans to qualify for entry
 - d. obtaining an entry job

Table 2.1 Continued - Super's Developmental Stages
Page 2

4. Stabilization (25-35)

- a. awareness of the need to stabilize
- b. planning for stabilization
- c. becoming qualified for a stable regular job or accepting the inevitability of instability
- d. obtaining a stable regular job or acting on resignation to instability

5. Consolidation (35 plus)

- a. awareness of the need to consolidate and advance
- b. possession of information as to how to consolidate and advance
- c. planning for consolidation and advancement
- d. executing consolidation and advancement plans

Havighurst, 1953; Miller and Form, 1951; Ginzberg, Ginsberg, Axelrad, and Herma, 1951; and Tiedeman, 1961. As a result of Super's theorizing, two reference points for evaluation of vocational maturity were developed. The first item was one's chronological age which indicated the life stages in which a person should be found. The second reference point is one's method of handling vocational development tasks. Super and Overstreet used semi-structured interviews and objective tests to measure vocational maturity of ninth grade students. Super and Overstreet's study concluded that the school system was requiring students to do something (make vocational choices) they were not vocationally mature enough to accomplish successfully (1969). In order to assist individual counselors and school systems to assess levels of vocational maturity, Super developed the "Career Development Inventory." This instrument has been very helpful with high school populations but has been found to be lacking with college students and deviant populations (Lo Cascio, 1974).

John Crites, building on Super's theory, constructed the "Vocational Development Inventory" (1965) which was later revised into the "Career Maturity Inventory" (1973). This instrument contained two components which were an attitude and a competency test. The "Attitude Test" measures the individual's involvement in the choice process, orientation toward work, independence in decision making, preference for vocational choice factors, and conception of the choice

process. The "Attitude Scale" has been used extensively as a single measure of vocational maturity (Bartlett, 1968; Lawrence, et al., 1976). Other researchers have attempted to develop new scales (See Table 2.2).

Table 2.2

Vocational Maturity Scales

Nelson	1965	Client Satisfaction and Wisdom of Choice
Dilly	1965	Decision Making Inventory
Vriend	1969	Vocational-Educational Survey
Westbrook and Mastie	1970	Cognitive Vocational Maturity Test
Sheppard	1971	Adult Vocational Maturity Inventory

Further descriptions of instruments will be presented in the next chapter.

Several researchers in the late sixties and seventies attempted to tie together measurement of personality and vocational maturity (Bohn, 1966; Bartlett, 1968). In 1966, Bohn used the "Interest Maturity Scale" of the "Strong Vocational Interest Blank" as a measure of vocational maturity and the "Adjective Check List" as a measure of personality. He found that high interest maturity scorers were more achievement oriented, independent, sociable, sensitive, persuasive, and less self-critical. His conclusion was that vocational maturity seemed to be a reflection of

general personality development and must be taken into account in effective vocational counseling.

In 1968, Bartlett utilized the "Vocational Maturity Scale" (forerunner of the attitude scale) of the "Vocational Development Inventory" to measure vocational maturity and the "Adjective Check List" to measure personality variables. He found that individuals with high vocational maturity scores were more self-confident, achievement oriented, forceful, independent, and less self-critical. The implication of Bartlett and Bohn's results suggest that counselors must deal with personality development and not just the isolated vocational development of counselees.

Lawrence and Brown (1976), using a multiple regression procedure, found that "when predicting career maturity as measured by the 'Career Maturity Inventory', a separate equation utilizing different predictors, depending on race and sex of subjects, should be considered."³⁵ They also found that the "Career Maturity Inventory" was highly correlated with traditional measures of intelligence. Therefore, it was suggested that when using the "Career Maturity Inventory" as a measure of career maturity, one should not be surprised to find that the less career mature may be less intellectually bright. It will be necessary in this study

³⁵Lawrence, William and Duane Brown, "An Investigation of Intelligence, Self-Concept, Socioeconomic Status, Race, and Sex as Predictors of Career Maturity," Journal of Vocational Behaviors, (Academic Press Inc., 1976), 9, p. 43.

to determine if "Career Maturity Inventory" scores are similarly distributed according to grade placement.

Yen and Healy (1977) examined the effects of work experience on the scores of two different measures of career maturity, the "Career Maturity Inventory" and Super's "Career Development Inventory." They were able to show that among Junior College students, paid employment increases scores on the two scales. These instruments appear to have validity in measuring maturity and show the important influence of work experience on vocational maturity.

Implications of Research

The research sighted in this chapter suggests that vocational development (Super, 1957; Crites, 1965), particularly the construct of vocational maturity (Bohn, 1966; Bartlett, 1968; Lawrence and Brown, 1976; Yen and Healy, 1977), is part of general development and is closely related to the construct of psychosocial development (Munley, 1973; Heath, 1976; Martin and Redmore, 1978). Willes E. Bartlett (1971), in his review on vocational maturity, states that "more research is needed which would specifically test the assumption that vocational maturity is related to personality development."³⁶ Similarly, research in the area of student persistence (Calder, 1977; Near, 1977) suggests

³⁶Bartlett, Willes E., "Vocational Maturity: Its Past, Present, and Future Development," Journal of Vocational Behavior, 1971, 1, pp. 22-29.

that psychosocial factors are crucial in understanding motivation and development of students. Also, implied in the research sighted, are that differences in demographic characteristics such as sex and work experience do impact on the development of social and vocational maturity (Constantinople, 1969).

During the past decade, instruments have been developed both in the measurement of Erikson's concepts of psychosocial development (Wessman and Ricks, 1966; Constantinople, 1969; Prelinger and Zimet, 1964; Boyd, 1964; Farquhar and Wilson, 1977; Marcia, 1966) and the concept of vocational maturity (Super, 1969; Crites, 1965, 1973; Dilly, 1965; Nelson, 1965; Vriend, 1969; Westbrook and Mastie, 1970; Sheppard, 1971). These instruments allow for the study of the relationships between these two developmental concepts and their relationship to college students' persistence. They also allow an analysis of results in a theoretical framework which ought to provide insight into less superficial factors underlying adult student behaviors. As indicated in the review of the studies on attrition by Summerskill (1962) and Verner and Davis (1964), there is a great need to look at differences from a developmental psychological perspective (Calder, 1977; Near, 1977). The study outlined in the next chapter on Design has attempted to meet this need by studying the concepts of psychosocial development and career maturity as they relate to adults returning to college for academic upgrading.

CHAPTER III

DESIGN OF THE STUDY

This naturalistic study was designed to examine the relationship between psychosocial development and career maturity of academic upgrading adult community college students who persisted and did not persist in their expressed educational-vocational goals. In order to study these relationships, a battery called the "Adult Student Development Questionnaire" containing a demographic survey, the "Psychosocial Development Inventory," and the "Career Maturity Inventory Attitudinal Scale" was administered to a population of adult retraining students. The individuals' progress was monitored during the following six to nine months and data on their status regarding persistence and non-persistence was recorded. Tests of significance were applied to measures of psychosocial and career maturity and to relationships between these concepts, demographics, and persistence.

Included in this chapter are descriptions of: the test battery and instrumentation used; procedures followed; the sample studied; and the research design, hypotheses, and methods of analysis.

Test Battery

For this study a battery labeled the "Adult Student Development Questionnaire" (henceforth referred to as the A.S.D.Q.) was developed that packaged all communications with students (See Appendix A). The battery contained: a general description of the study, a release form, a demographic questionnaire, the "Psychosocial Development Inventory," the "Career Maturity Inventory" (attitudinal scale only), and a letter thanking the participants and extending the opportunity to students to learn more about the study and their test results upon completion or discontinuation at the college.

The booklet was designed to facilitate coding so that data could be placed on computer for analysis. The booklet was presented in a simple style so that administration was clear. The test package reading level was assessed in a pilot study in an attempt to make the language level appropriate for the sample. Changes were made before administering to the major sample. The entire booklet took one and a half to two hours for completion by subjects.

Instrumentation

The dependent variables selected for this study were the "Psychosocial Development Inventory" of Anne Constantinople (henceforth referred to as the P.D.I.) and the "Career Maturity Inventory Attitudinal Scale" of John Crites (henceforth referred to as the C.M.I.).

"Psychosocial Development Inventory" (P.D.I.)

Although Erikson's theory of psychological development has had a significant impact on the thinking of psychologists and educators concerning the development of college students, there is only one short self-report instrument that has been used in validating the theory and in obtaining normative data. Farquhar, Wilson and Parmeter (1977) are in the process of developing the "Assessment of Adult Adjustment Patterns Inventory." It was not ready for usage at this time; however, it appears to be potentially a more useful instrument measuring all eight stages of Erikson's theory with each scale containing more items. Several researchers have developed other methods of assessment of individual scales (Prelinger and Zimet, 1964; Marcia, 1966; Dignan, 1965); however, these methods cannot be used easily with large numbers of subjects, which is necessary if normative patterns are to be established. Wessman and Ricks (1966) developed a Q sort to measure changes in self concept in relation and depression among college students. The Q sort items were chosen by Wessman and Ricks to reflect successful and unsuccessful resolution of Erikson's first six stages of development.

In her study, Constantinople (1969) substituted a seven-point scale for the Q sort format and found that the alternative method yielded data comparable to that obtained with the original instrument (correlations between the Q sort and the seven-point form for fifty-three pilot subjects

ranged from .68 to .97 for the six subscales concerning the fourth, fifth, and sixth Eriksonian stages).

In the current study, the seven-point format was used. Subjects were asked to indicate the number, from one ("Never or almost never true of me") to seven ("Always or almost always true of me"), to describe how characteristic or uncharacteristic the work or phrase was of them. The ratings of the five items for each of the twelve subscores were then summed to obtain the subscale totals (Trust, Mistrust, Autonomy, Shame and Doubt, Initiative, Guilt, Industry, Inferiority, Identity, Identity Diffusion, Intimacy, and Isolation). Test-retest reliabilities (the interval between testing was six weeks) by Constantinople for the six subscales for the three stages she considered as being most central to college students (Identity, Inferiority, Identity, Role Diffusion, Intimacy, and Isolation) ranged from .45 for Role Diffusion to .81 for Intimacy with a median reliability of .70 (N was 150). No validity estimates have been made for the subscales, although "the degree of congruence found by Wessman and Ricks between these data and those for other psychometric devices and clinical data is encouraging."³⁷ Research by Wessman and Ricks, as well as by Constantinople, indicated that the instrument has some construct validity.

³⁷ Constantinople, Anne, "An Eriksonian Measure of Personality Development in College Students," Developmental Psychology, 1969, p. 359.

In her recent dissertation (1979), Sommers found the psychometric properties of the Eriksonian instrument to be less adequate and impressive than did Constantinople. Her reliability alphas ranged from .330 for Role Diffusion to .711 for Industry. She found the weakest to be Role Diffusion, .330; Autonomy, .348; and Isolation, .381; with the best being Industry, .711; Initiative, .652; and Trust, .613.

Sommers revised the P.D.I. in order to make it more readable. All colloquial phrases were eliminated by Sommers. The P.D.I. is a simple straight forward instrument of sixty items that are scored on a seven-point Likert scale. The P.D.I. produces twelve raw scores (5-35) from five items per scale. There are six positive outcome scales (Trust, Autonomy, Initiative, Industry, Identity, and Intimacy) and six negative outcome scales (Mistrust, Shame and Doubt, Guilt, Inferiority, Identity Diffusion, and Isolation). The P.D.I. took approximately thirty to forty minutes to administer and directions are simple. It was hand scored. The P.D.I.'s simplicity allows it to be easily used in practical settings.

In the present study, the reliability (Cronbach's) alphas for the twelve subscales were computed and ranged from .298 to .749. (See Table 3.1) Detailed reliability data is reported in Appendix E., Table E.1.

By combining the subscales (Trust and Mistrust, Autonomy and Shame and Doubt, Initiative and Guilt, Industry

Table 3.1

Current Sample Reliability Alphas for "Psychosocial
Development Inventory" Subscales (Cronbach's
Alpha for Internal Consistency)

Basic Trust	.612	Basic Mistrust	.680
Autonomy	.298	Shame and Doubt	.403
Initiative	.565	Guilt	.437
Industry	.749	Inferiority	.632
Identity	.736	Identity Diffusion	.600
Intimacy	.586	Isolation	.464

and Inferiority, Identity and Identity Diffusion, and Intimacy and Isolation), one continuous score can be obtained. This was achieved by adding the positive subscale total to thirty-five minus the negative subscale. For example, if a person had a score of 32 on Trust and 19 on Mistrust, their combined (stage) score would be $32 + (35 - 19) = 48$. The continuum for scores for each stage scale would be ten to seventy. Reliability alphas were computed for each of the six stage scales. They are reported in Table 3.2. Detailed reliability analysis is reported in Appendix E, Table E.3.

Table 3.2

Reliability Alphas for "Psychosocial
Development Inventory" Stage Scales
(Cronbach's Alpha for Internal Consistency)

Trust Stage Scale	.69
Autonomy Stage Scale	.35
Initiative Stage Scale	.62
Industry Stage Scale	.75
Identity Stage Scale	.74
Intimacy Stage Scale	.59

"Career Maturity Inventory"(C.M.I.)

There are presently available several instruments that measure the construct of vocational maturity. The selection of the C.M.I. was based on appropriateness for sample, construct validity, and administrative properties.

Two major vocational maturity inventories, the "Career Development Inventory" of Super and the "Cognitive Vocational Maturity Test," are appropriate for only high school age students. Sheppard (1971) developed an "Adult Vocational Maturity Inventory;" however, the author in correspondence with Dr. Walls, a researcher familiar with the A.V.M.I., was informed of the transparency of the instrument and its inadequacies. Crites in the Theory and Research Handbook (1973) stated that the span of applicability of the Attitude Scale ranges from the sixth grade (by reading level) to the senior year of college. Since the adult population sampled in this study starts at an educational level of the sixth grade and ranges in age from seventeen to fifty-six, the C.M.I. was appropriate for the population. The Theory and Research Manual stated that large testing of college students had indicated that there is sufficient "ceiling" on the Attitude Scale to administer the C.M.I. to college sophomores, juniors, and even selected seniors, primarily those who are undecided about their careers.

For the current study, the range of scores, twenty-four to forty-seven, and the normal distribution of results indicates that a ceiling effect did not take place. (See Table 3.3) Also, Crites comments that "the Attitude Scale appears to be equally applicable then, to both sexes and all social strata."³⁸ Lo Cascio (1974) warned that the C.M.I.

³⁸Crites, John O., "The Career Maturity Inventory," ed. Donald E. Super, Measuring Vocational Maturity for Counseling and Evaluation, (Washington: A.P.G.A. Press, 1974), p. 29.

Table 3.3

Distribution of "Career Maturity Inventory"
Scores for Sample Tested

Score	Absolute Frequency	Adjusted Frequency (Percentile)	Cumulative Frequency (Percentile)
24	2	1.6	1.6
25	2	1.6	3.1
28	6	4.7	7.9
29	2	1.6	9.4
30	3	2.4	11.8
31	4	3.1	15.0
32	3	2.4	17.3
33	5	3.9	21.3
34	7	5.5	26.8
35	6	4.7	31.5
36	10	7.9	39.4
37	11	8.7	48.0
38	11	8.7	56.7
39	12	9.4	66.1
40	5	3.9	70.1
41	4	3.1	73.2
42	9	7.1	80.3
43	12	9.4	89.8
44	6	4.7	94.5
45	4	3.1	97.6
46	1	0.8	98.4
47	2	1.6	100.0
TOTAL	127	100.0	
Mean	37.339	Standard Error	0.463
Mode	39.000	Standard	
Minimum	24.000	Deviation	5.213
Maximum	47.000	Median	37.727
N 127		Range	23.000

Attitude Scale may be culturally biased in that it appeared to present a middle-class orientation to career development.

The C.M.I. was conceived "to elicit the attitudinal and dispositional response tendencies in career maturity which are non-intellective in nature, but which may mediate both choice behaviors and choice aptitudes (competencies)."³⁹ Basically, the C.M.I. provides an operational definition of the "Career Choice Attitude" dimension of the Crites model of career maturity demonstrated earlier. This scale provides a screening and normative standard. Lo Cascio (1974) indicated that those in the lowest quarter can be considered as possibly delayed or impaired in their career development.

Moore and McLean (1977), in their validity study of the "Career Maturity Inventory Attitude Scale," stated: "The Career Maturity Inventory (C.M.I.) . . . is one of the most universally accepted and utilized instruments for measuring the construct of career maturity."⁴⁰ Osipow (1968) stated: "The complete instrument . . . is designed to measure the congruence between the vocational behavior of an individual and the behavior expected of that individual at his respective age."⁴¹ Moore and McLean (1977) found support

³⁹Ibid., p. 29.

⁴⁰Moore, Thomas L., and Jones E. McLean, "A Validity Study of the Career Maturity Inventory Attitude Scale," Measurement and Evaluation in Guidance, Vol. 10, No. 2, July 1977, p. 113.

⁴¹Osipow, S., "Super's Developmental Self Concept Theory of Vocational Behavior," Theories of Career Development, (New York: Appleton-Century-Crofts, 1968), p. 123.

for the contention that career maturity may be a function of age. They also warned: "Data accumulated in this study provided some important findings that serve to clarify and set limitations upon the degree of validity of the Attitude Scale of a college population."⁴² Their main concerns were with reliability, item analysis, and factorial validity.

Two manuals were available, the Administration and Use Manual (1973) and the Theory and Research Handbook (1973) in which Crites presented counter arguments. The latter contains extensive data on theory, reliability, validity, and research conducted. An extensive review of the instrument is also contained in Measuring Vocational Maturity for Counseling and Evaluation, edited by Super (1974).

Two types of reliabilities have been determined (internal consistency and test-retest). Kuder Richardson Formula 20 values average .74 and range from .65 to .84 which are comparable to other non-intellective measures. Test-retest after a one-year interval based on a 1,648 student standardized sample was .71. Content validity has been established through expert judges as reported by Hall (1962). Criteria related and construct validity have been demonstrated by correlating it with other measures of personality, adjustment, aptitude, interest, career maturity and career choice (Crites, 1973).

⁴²Moore and McLean, "A Validity Study of the Career Maturity Inventory Attitude Scale," p. 115.

The C.M.I. is simple and clear. It can be administered in approximately twenty minutes and can be easily scored.

Reliability alpha (Cronbach's alpha for internal consistency) for the C.M.I. Attitude Scale in this study was 0.78. Detailed reliability analysis is reported in Appendix E, Table E.2.

Procedures

The "Adult Student Development Questionnaire" was administered every Thursday (with two exceptions) from August 17, 1978 to December 14, 1978 to all adult retraining academic upgrading students attending the first week orientation class. In total, 190 students were tested. (See Table 3.4) Twenty-eight academic upgrading students missed the testing due to absence. Eighty-seven percent of all academic upgrading students who were in orientation classes during this time period were tested. This group included Canada Employment Commission financially sponsored students, provincial fee-paying students, and agency sponsored individuals (for example, Vocational Rehabilitation).

The researcher was given all of Thursday afternoon to administer the A.S.D.Q. The A.S.D.Q. was routinely scheduled in the same classroom that all orientation activities took place. The room was a regular classroom that provided sufficient light, space, sitting and writing room. Testing began at 1:00 p.m. following the students' regular

Table 3.4
 Sponsor Status of Students Tested by "Adult
 Student Development Questionnaire"
 (August to December 1978)

Sponsor	Absolute Frequency	Relative Frequency (Percentages)
Canada Employment Commission	123	65.0
Fee Payers	48	25.0
Workmen's Compensation Board	1	0.5
Vocational Rehabilitation	2	1.0
Unemployment Insurance	3	1.5
Missing Cases (no sponsor stated at time of testing)	13	7.0
TOTAL	190	100.0

lunch hour and continued until they had completed the test or had made a special request to leave.

Test administration was done by the researcher with assistance from two members of the St. Clair College Research Department who were trained in test administration and research. Standardized procedures were established and followed from the outset. An outline of introductory remarks is contained in Appendix B. Basically reviewed were: intent of testing, confidentiality, benefits to the students and college, attitudes toward answering the questions, letter outlining the study, and a release form. In addition, a brief overview of the main body of the questionnaire was given pointing out four essential factors. The first factor was the typographical error in the numbering of questions (there were no questions 13 to 17); the second factor was the true and false nature of Part Two of the C.M.I.; the third factor was the emphasis on the directionality of the low to high (1 to 7) nature of the P.D.I. answering code; and the fourth factor was the importance of completing the entire questionnaire. After this briefing, students were asked if they had any questions. They were again informed that if they had any major reservations that they did not have to take the test. Two individuals took this opportunity to state their opposition and refusal.

During the course of the administration of the instrument, students were encouraged to seek help in filling

out the instrument. However, they had to decide for themselves the appropriate answers to the questions. Test administrators only gave specific answers to questions related to format. Through this process, feedback was obtained on the nature of the instrument. Question 26 in the Demographic Section was found to be difficult for students to fill out due to its global nature and lack of specificity. It would have been better worded as "the title of the job last held." The most difficulty encountered by the students was in filling out Part Three, the P.D.I. The feedback indicated that it was mainly due to a lack of understanding of words such as tactful, characteristic, and optimistic. Those subjects with serious language difficulties were not used in the analysis of the study.

During the course of the study, two testing dates were missed. In the first instance, classes were cancelled due to a bomb being placed in the classroom area and in the second instance cancellation was requested by the Director of Orientation. The only other historical incidents occurring during the course of the study were a two-week strike by the support staff at the college that interrupted classes and may have accounted for an increase in student absenteeism, and a change in fee payments to students which may have influenced the type of student entering retraining programs. Neither appears to have unduly influenced student disposition.

Testing took place on sixteen different dates with an average of twelve students per session. The numbers tested per session ranged from six to twenty.

After testing was completed, all booklets were taken to the Research Centre where they were scored. Booklets were scored, coded, and placed on computer using a numbering system in order to protect the identification of the individual students.

A continuous monitoring of the students' attendance was conducted in order to identify when a student completed their program and/or why they discontinued their program of study. The Associate Registrar in conjunction with the Program Coordinators published every two weeks a disposition sheet that recorded the status of all students no longer attending college. These sheets are derived from direct feedback from faculty, administration, and Manpower counselors. They indicated the specific date of discontinuation and reasons for discontinuation. (See Table 3.5)

Sample

The sample consisted of 127 academic upgrading students (sixth through twelfth grade) attending adult retraining programs at St. Clair College of Applied Arts and Technology which is one of twenty-two colleges in the province of Ontario. The Colleges of Applied Arts and Technology are dedicated to technical vocational training of one week to three years in duration and to the academic

Table 3.5
Disposition of Sample Upon Discontinuation
or Completion

Disposition	Reason	Number	Percentage
Persisters	Completion	32	25.2
	Work	7	5.5
	Incomplete (but still in school)	37	29.1
Non-persisters	Inappropriate Behavior	1	0.8
	Leave of Absence	1	0.8
	Absenteeism	24	18.9
	Personal	3	2.4
	Quit	2	1.6
	Family Emergency	3	2.4
	Per Canada Employment Commission/Counselor	2	1.6
Medical	Health	9	7.1
Transfer	Geographical	3	2.4
Academic	Non-achievement	1	0.8
Other		2	1.6
TOTAL		127	100.0

Valid Cases = 127

upgrading and skill training of agency referrals. The final sample consisted of Canada Employment Commission referrals who met the above criteria. The Canada Employment Commission criteria for eligibility and sponsorship under the Canada Manpower Training Program (Adult Occupational Training Act, 1967) were:

1. One year past the school leaving age in the province where normally living (17 years old in Ontario)
2. Not have attended school on a regular basis for at least twelve months
3. Will be expected to file for Unemployment Insurance if eligible

The purpose of the adult retraining program was to provide training courses which prepare a person for a new job or improve skills for present occupation (Adult Occupational Training Act, 1967). Canada Employment Commission students were provided with a weekly stipend for attending and performing successfully. If they did not attend (more than two days absent) without a legitimate excuse or their performance was inadequate, they were not continued on program sponsorship. During their first week, they were placed in a particular program at a specifically prescribed academic level. During the initial stage, the student was exposed to extensive testing and consultation. Attendance progress was monitored daily, and weekly reports were submitted to Academic Coordinators and the Associate Registrar. If a student were absent, it was recorded on an

attendance card which was submitted to the Associate Registrar. The specific date of discontinuation was obtained. Only those who were native Canadians and whose first language was English were included in the sample. In summary, the sample was made up of new, Canada Employment Commission sponsored, academic upgrading, English speaking students. These restrictions controlled for differences in motivation, culture, and linguistic factors. Initially, 190 students were tested from the orientation class; 8 students were dropped due to language difficulties; and 18 were dropped due to incompleteness of their booklets. Any respondents who did not answer five or more questions on the P.D.I. scales were not included. The part of the sample with one to four questions unanswered on the P.D.I. scales were given a median score of four. Also dropped from the sample were returning or transfer students. For disposition of those tested, see Table 3.6.

The sample was separated into persisters which consisted of those (1) completing program, (2) obtaining full-time work, or (3) incomplete on July 1, 1979 yet in good academic standing. Non-persisters were those who discontinued and whose records compiled by the Associate Registrar stated that they left due to (1) inappropriate behavior, (2) leave of absence, (3) absenteeism, (4) personal reasons, (5) quit, (6) incarcerated, (7) family emergency, (8) Canada Employment Commission counselor recommendations, or (9) looking for work. Those who

Table 3.6
Disposition of Population Tested

Excluded from the Study:	
Language Difficulties	8
Incomplete Booklets	18
Fee Payers	48
Other Agencies' Referrals	6
Skill Training Canada Employment Commission Sponsored	12
Included in the Study:	
Sample of Canada Employment Commission Sponsored Students Selected for the Study	127*
Total Tested:	190

*Some cases dropped due to language difficulties or incomplete booklets also were fee payers and/or skilled technical students.

discontinued due to medical reasons, academic underachievement, or transferring to another educational setting were not included in the definition of persister or non-persister. For a distribution of the categories of the sample, see Table 3.5.

All students tested entered the college from August to December 1978. The college has a weekly intake and students begin at any time and are placed according to needs. They began attending formal classes in the second week, after a one-week orientation program. Many of the students used academic upgrading as a stepping stone to other skill training programs and are still continuing in different programs. This continuation has been assumed to indicate persistence on the part of the student.

All subjects were administered a demographic questionnaire as part of the A.S.D.Q. (For detailed demographic characteristics, see the charts in Appendix C.) A survey of the demographic characteristics of the sample indicated that:

1. The sample ranged in age from 17 to 56 with a mean age of 26.3 and mode of 18 and median of 21.8
2. The sample was 74.8 percent female
3. Of the sample, 24.3 percent were divorced, separated, and/or widowed. The majority were single (55.1) and 20.5 percent were married
4. Over half (54.8) had no children, but 4 percent had four or more children whose ages ranged from infancy to thirty years

5. The vast majority (85.5) spoke only English; 7.1 percent spoke English and French; and 7 percent spoke other languages
6. The majority (89.8) were born in Canada
7. Some 82 percent of the sample lived in Windsor while the remaining individuals lived throughout Essex County's smaller rural communities
8. A large percentage (31) still live with their parents while 20 percent live with spouse or spouse and children. Some 27 percent live alone or alone with children, and 14.3 percent live with friends
9. The majority of the sample dropped out of school during high school years. Only 15 percent dropped out before completing grade eight, 23.6 percent dropped out in grade nine, 30.7 percent in grade ten, and 23.6 percent in grade eleven. Some individuals, approximately 3 percent, had attempted college or university courses
10. Approximately half of the students (46.7) had experienced failure
11. Students ranged in number of years out of school from 0 to 32, the mean being 8.4 years, the mode 1 year and median 4.2
12. Some 38.1 percent had not worked full time for one full year. The mean years worked was 2.6, mode 1, and median 2.1
13. Consistent with Manpower regulations, 93.5 percent are not working at the present time even on a part-time basis
14. Those listing titles of last job held were basically in labourer or clerical type jobs
15. The annual income reported for over half of the students (58.0) was below \$2,999. Only 7.5 percent reported an annual family income of more than \$10,000
16. Some 26.2 percent did not hold any job during the past year; 37.3 percent, one job; and the remaining 36.5 percent held two or more jobs during the year prior to entering upgrading

17. Only 2.4 percent felt their health was not adequate compared to 60.6 percent who felt they were in good health
18. Unhappiness was expressed by 4.7 percent, while 54.2 percent stated they were happy with life
19. Less than 1 percent were dissatisfied with human relations while 70 percent were satisfied

Research Design

This study was basically a naturalistic study consisting of the testing of a sample population and following them over a period of time to observe behaviors. Campbell and Stanley (1963) describe this type of study as a pre-experimental one-shot case study design. The dependent variables were scores on the P.D.I. and C.M.I., and independent variables were persistence, non-persistence, and other demographics. In addition, certain demographic variables were analyzed using regression analysis to determine major factors influencing persistence.

Attempts were made through the administration and review of the demographic questionnaire to control for history and selection. The administration of booklets as a normal part of the orientation program was intended to control for testing effects. Since mortality is built into the design, no attempt to influence this factor was made.

Research Hypotheses

In this study, five major research hypotheses (made up of nine statements) were tested. They are:

Hypothesis I:

- A. There will be a significant positive correlation between the measure of vocational maturity and the six positive subscales of the "Psychosocial Development Inventory."
- B. There will be a significant negative correlation between the measure of vocational maturity and the six negative subscales of the "Psychosocial Development Inventory."

Hypothesis II:

There will be a significant difference in the means between persisters and non-persisters on the twelve subscales of the "Psychosocial Development Inventory." On the six positive subscales, persisters will score higher than non-persisters. On the six negative scales, the non-persisters will have higher scores than persisters.

Hypothesis III:

There will be a significant difference in means between persisters and non-persisters on the "Career Maturity Attitude Scale."

Hypothesis IV:

- A. There will be a significant difference in the means between males and females on the measure of the twelve subscales of the "Psychosocial Development Inventory."
- B. There will be a significant difference in the means between males and females on the "Career Maturity Attitude Scale."

Hypothesis V:

- A. There will be a significant positive correlation between age and the six positive subscales of the "Psychosocial Development Inventory."
- B. There will be a significant negative correlation between age and the six negative subscales of the "Psychosocial Development Inventory."
- C. There will be a significant positive correlation between age and the measure of "Career Maturity."

Methods of Analysis

The hypotheses were tested as follows (See Table 3.7):

Hypothesis I, A and B

These statements were first tested using a Pearson Product-Moment Correlation Coefficient statistic measuring the relationship between C.M.I. score and P.D.I. subscale. In order to further analyze the relationship between career maturity and psychosocial development, several conversion of test measures were made. The twelve P.D.I. subscales were converted into six stage or combined scales. This was accomplished by adding the positive scale to thirty-five minus the score on the comparable negative scale. The C.M.I. score was also converted into high, medium, and low vocational maturity categories. The mean and standard deviation for the C.M.I. were computed. All those within one standard deviation of the mean were categorized as a medium group; those more than one standard deviation above the mean as a high vocational maturity group; and those more than one standard deviation below as a low vocational maturity group. One-Way Analysis of Variance was computed comparing stage

Table 3.7
Methods of Analysis of Hypotheses

<u>Hypothesis</u>	<u>Test</u>
I, A and B	Pearson Product-Moment Correlation One-Way Analysis of Variance
II	One-Way Analysis of Variance
III	T-test Crosstabulation (Chi Square)
IV, A B	One-Way Analysis of Variance T-test Crosstabulation (Chi Square)
V, A and B C	Pearson Product-Moment Correlation One-Way Analysis of Variance Pearson Product-Moment Correlation
Reliability	Cronbach's Alpha for Internal Consistency

Level of significance for all tests set at .05.

scores to high, medium, and low vocational maturity categories of the C.M.I. In addition, One-Way Analysis of Variance was also conducted for high, medium, and low vocational maturity categories of C.M.I. by P.D.I. subscales.

Hypothesis II

One-Way Analysis of Variance was used to test the relationship between disposition (persistence and non-persistence) and the P.D.I. subscales and P.D.I. stage scales.

Hypothesis III

A T-test was used to measure differences in means between persisters and non-persisters on the C.M.I. Attitude Scale. Also, One-Way Analysis of Variance was computed testing high, medium, and low vocational maturity categories of C.M.I. by disposition (persisters and non-persisters).

Hypothesis IV, A

One-Way Analysis of Variance for gender by P.D.I. subscales and stage scales was conducted.

Hypothesis IV, B

T-tests were used to test the differences in means between C.M.I. scores for males and females as a single variable. Crosstabulations calculating Chi Square statistics were used to measure C.M.I. categorized variable (high, medium, and low vocational maturity) by gender.

Hypothesis V, A and B

Pearson Product-Moment Correlation Coefficients were computed for age by twelve P.D.I. subscales. Pearson R's were also computed for P.D.I. subscales by age as categorized variable (17-20, 21-24, 25-34, 35 plus). One-Way Analysis of Variance was used to compare categorized age variable with P.D.I. stage scores.

Hypothesis V, C

A Pearson Product-Moment Correlation Coefficient was computed to study the relationship between age and career maturity. Pearson R's were computed for age as a single and categorized variable with C.M.I. categorized as high, medium, and low vocational maturity and as a single variable.

Additional Analysis

Further exploration of data was performed as follows:

1. Differences between persisters and non-persisters by gender were studied using Crosstabulations (Chi Square).
2. Differences between mean ages of persisters and non-persisters were tested using a T-test. In addition, age as categorized variable was studied by use of Crosstabulation (Chi Square) for persisters and non-persisters.
3. A Pearson Product-Moment Correlation was computed in order to study the relationship between the highest educational level completed and career maturity.
4. Multiple Regression Analysis was computed using disposition (persistence versus non-persistence) as dependent

variable. The definition of persistence was manipulated in order to further assess predictive value of variables.

5. Reliability analysis for the P.D.I. subscales, stage scales, and C.M.I. Attitude Scales were made. Reliability alphas (Cronbach's Alpha) were computed to test internal consistency.

6. All tests of significance were at the .05 level.

7. The last three questions of the Demographic Survey asked the sample to rate their emotional well-being, their physical health, and the status of their relationships with others. The responses to the nine-point scale were grouped (1 to 4 as poor, 5 to 7 as average, 8 to 9 as good) and One-Way Analysis of Variance computed for well-being, health, and human relations by P.D.I. stage scales and C.M.I. score. Also, Crosstabulations were computed for well-being, health, and human relations by disposition (persistence and non-persistence), persistence, age, and sex. In addition, Crosstabulation was computed for human relations with marital status.

Summary

One-hundred and twenty-seven students enrolled in the academic upgrading adult retraining program at St. Clair College volunteered to participate in this naturalistic study. They were administered the "Adult Student Development Questionnaire" which consisted of a demographic survey, the "Psychosocial Development Inventory," and the "Career

Maturity Inventory Attitude Scale." Eighty-seven percent of all academic upgrading students entering the college were tested over a four-month period. Data was collected on the progress of these students for the next six to nine months to determine who persisted and who did not persist, and the specific reasons for discontinuation.

Statistical hypotheses were formulated to test the relationships between career maturity, psychosocial development, age, gender, persistence, non-persistence, and selected demographic characteristics. Pearson Product-Moment Correlation Coefficients, One-Way Analysis of Variance, Chi Square Crosstabulation, Multiple Regression Analysis, and simple T-tests were outlined as methods of analysis of the hypotheses and other selected questions requiring further analysis. The P.D.I. was found to have reliability (Cronbach's alpha) alphas ranging from .30 to .75 with the sample studied for all twelve subscales and reliabilities ranging from .35 to .75 for six stage scales. The C.M.I. had a reliability of .78. The probability of significance was set at the .05 level for all hypotheses tested.

The results of the hypotheses' tests and an analysis of the data is presented in Chapter IV.

CHAPTER IV

ANALYSIS OF RESULTS

In this chapter the data and statistical tests relevant to each hypothesis are presented. Each hypothesis is restated and a statement of rejection or acceptance of the hypothesis made. A summary of the results is included. In addition, other data from tests not directly related to the hypotheses are presented in order to assist in further clarification of topics under study.

Hypothesis I:

- A. There will be a significant positive correlation between the measure of vocational maturity and the six positive subscales of the "Psychosocial Development Inventory."
- B. There will be a significant negative correlation between the measure of vocational maturity and the six negative subscales of the "Psychosocial Development Inventory."

Hypothesis I was first tested by means of a Pearson Product-Moment Correlation Coefficient between the C.M.I. score (37.34) and the P.D.I. subscales. The results listed in Table 4.1 indicate that two of the positive subscale coefficients were significant. All six negative scales were significant at the .01 level in the hypothesized direction when correlated with C.M.I.

Table 4.1

Pearson Product-Moment Correlation Coefficients Between
 "Career Maturity Inventory" and "Psychosocial
 Development Inventory" Subscales

			<u>F Coefficients</u>	<u>F Probability</u>
POSITIVE SCALES	CMI	X Basic Trust (N = 127)	0.1903	p = 0.016**
	CMI	X Autonomy (N = 127)	-0.0041	p = 0.482
	CMI	X Initiative (N = 127)	-0.0617	p = 0.245
	CMI	X Industry (N = 127)	0.0838	p = 0.714
	CMI	X Identity (N = 127)	0.1950	p = 0.014*
	CMI	X Intimacy (N = 127)	0.1004	p = 0.131
NEGATIVE SCALES	CMI	X Basic Mistrust (N = 127)	-0.3950	p = 0.000**
	CMI	X Shame and Doubt (N = 127)	-0.3138	p = 0.000**
	CMI	X Guilt (N = 127)	-0.2915	p = 0.000**
	CMI	X Inferiority (N = 126)	-0.4020	p = 0.000**
	CMI	X Identity Diffusion (N = 126)	-0.2570	p = 0.002**
	CMI	X Isolation (N = 126)	-0.3474	p = 0.000**

*Significant at the .05 level.

**Significant at the .01 level.

The relationship between career maturity and psychosocial development was also tested by converting the twelve P.D.I. subscales to six stage scales (See Chapter III for method of conversion). The C.M.I. scale was regrouped into high, medium, and low vocational maturity categories (See Chapter III for method of conversion). One-Way Analysis of Variance indicated that four (Trust-Mistrust, Autonomy-Shame and Doubt, Industry-Inferiority, and Intimacy-Isolation) of the six stages were significant at the .01 level when tested against C.M.I. high, medium, and low vocational maturity categories (See Table 4.2). One-Way Analysis of Variance was computed between C.M.I. categorized and P.D.I. subscales. Only Identity was found to be significant (.05 level) among positive subscales while all negative scales except Identity Diffusion were significant beyond the .01 level (See Table 4.3).

The results, in general, confirm the hypothesis. The negative subscales of P.D.I. consistently hold up under analysis. Hypothesis I, A for the positive subscales was rejected. Hypothesis I, B is accepted for the negative subscales researched. The stage scale results further confirm acceptance.

Hypothesis II:

There will be a significant difference in the mean between persistence and non-persistence on the twelve subscales of the "Psychosocial Development Inventory." On the six positive subscales, persisters will score higher than non-persisters. On the six negative scales, the non-persisters will have higher scores than persisters.

Table 4.2

One-Way Analysis of Variance for "Career Maturity Inventory"
 (High, Medium and Low Vocational Maturity Categories)
 by "Psychosocial Development Inventory" Stage Scores

		<u>F Ratio</u>	<u>F Probability</u>
Scale 1	Trust - Mistrust (N = 127)	6.189	0.0027**
Scale 2	Autonomy - Shame & Doubt (N = 127)	4.885	0.0091**
Scale 3	Initiative - Guilt (N = 127)	1.862	0.1597
Scale 4	Industry - Inferiority (N = 126)	5.146	0.0071**
Scale 5	Identity - Identity Diffusion (N = 126)	2.975	0.0547
Scale 6	Intimacy - Isolation (N = 126)	5.528	0.0050**

**Significant at the .01 level.

Table 4.3

One-Way Analysis of Variance for "Career Maturity Inventory"
(High, Medium and Low Vocational Maturity Categories)
by "Psychosocial Development Inventory" Subscales

CMi CATEGORIES	BASIC TRUST	AUTONOMY	INITIATIVE	INDUSTRY	IDENTITY	INTIMACY
High (N = 25)	24.32	23.20	26.36	25.96	27.32	27.92
Medium (N = 83)	24.27	23.96	26.81	25.87	25.82	27.31
Low (N = 19)	21.53	22.74	26.79	24.32	23.05	26.00
Total Sample (N = 127)	23.87	23.63	26.72	25.65	25.70	27.24
ANOVA	F	0.850	0.100	0.967	3.818	1.131
	Significance of F	.430	.905	.383	.025*	.326

CMi CATEGORIES	BASIC MISTRUST	SHAME & DOUBT	GUILT	INFERIORITY	DIFFUSION	ISOLATION
High	11.72	16.60	14.80	13.04	15.56	13.04
Medium	15.67	18.67	17.35	16.93	17.56	15.32
Low	18.00	21.63	19.84	19.89	18.79	19.16
Total Sample	15.24	18.71	17.22	16.60	17.35	15.44
ANOVA	F	7.012	5.749	9.276	2.186	8.987
	Significance of F	.001**	.001**	.004**	.117	.000**

*Significant at the .05 level.

**Significant at the .01 level.

One-Way Analysis of Variance tested the relationship between disposition (persistence and non-persistence) and P.D.I. subscales (See Table 4.4). No relationship was found. In addition, One-Way Analysis of Variance for disposition by P.D.I. stage scales was conducted. Again, no significant relationship was found (See Table 4.5). The second hypothesis is rejected.

Hypothesis III:

There will be a significant difference in means between persisters and non-persisters on the "Career Maturity Attitude Scale."

A T-test was conducted to measure differences between the means for persisters and non-persisters by C.M.I. score. No significance was found (See Table 4.6).

In addition, Crosstabulation (Chi Square) of C.M.I. scores categorized (high, medium, and low vocational maturity) by disposition (persistence and non-persistence) was conducted. No significance was found (See Table 4.7). The third hypothesis is rejected.

Hypothesis IV:

- A. There will be a significant difference in the means between males and females on the measure of the twelve subscales of the "Psychosocial Development Inventory."
- B. There will be a significant difference in the means between males and females on the "Career Maturity Attitude Scale."

One-Way Analysis of Variance for gender by P.D.I. subscales was conducted. None of the correlations were significant

Table 4.4

One-Way Analysis of Variance of Disposition
 (Persistence Versus Non-Persistence) by
 "Psychosocial Development
 Inventory" Subscales

	<u>F Correlation</u>	<u>F Probability</u>
Basic Trust (N = 127)	0.700	0.405
Autonomy (N = 127)	2.138	0.147
Initiative (N = 127)	2.904	0.091
Industry (N = 127)	1.104	0.296
Identity (N = 127)	2.319	0.131
Intimacy (N = 127)	0.139	0.710
Basic Mistrust (N = 127)	1.627	0.205
Shame and Doubt (N = 127)	0.499	0.481
Guilt (N = 127)	0.003	0.955
Inferiority (N = 126)	3.225	0.075
Identity Diffusion (N = 126)	0.032	0.857
Isolation (N = 126)	1.310	0.255

Table 4.5
 One-Way Analysis of Variance for Disposition
 (Persistence Versus Non-Persistence)
 by "Psychosocial Development
 Inventory" Stage Scales

		<u>F Coefficients</u>	<u>F Probability</u>
Scale 1	Trust-Mistrust (N = 127)	0.264	0.6083
Scale 2	Autonomy-Shame and Doubt (N = 127)	0.380	0.5389
Scale 3	Initiative-Guilt (N = 127)	1.266	0.2629
Scale 4	Industry-Inferiority (N = 126)	1.193	0.2772
Scale 5	Identity-Identity Diffusion (N = 126)	0.001	0.9800
Scale 6	Intimacy-Isolation (N = 126)	1.453	0.2306

Table 4.6
T-Test of "Career Maturity Inventory" Score
by Disposition (Persistence Versus Non-Persistence)

Variable	Number of Cases	Mean	Standard Deviation	Standard Error	Pooled Variance Estimate		
					T Value	Degrees of Freedom	2-Tail Probability
CMI Score							
Persisters	76	37.2632	5.325	0.611	0.24	110	0.808
Non- Persisters	36	37.0000	5.361	0.894			

Table 4.7

Crosstabulation (Chi Square) for Disposition
(Persistence and Non-Persistence) by "Career
Maturity Inventory" Score (High, Medium
and Low Vocational Maturity)

		"Career Maturity Inventory" Score - Vocational Maturity			Row Total
		High	Medium	Low	
Disposition	Persisters	13	47	16	76
	Row %	17.1	61.8	21.1	67.9
	Column %	72.2	65.3	72.7	
	Total %	11.6	42.0	14.3	
	Non-Persisters	5	25	6	36
	Row %	13.9	69.4	16.7	32.1
	Column %	27.8	34.7	27.3	
	Total %	4.5	22.3	5.4	
Column		18	72	22	112
Total		16.1	64.3	19.6	100.0

Raw Chi Square = 0.61610 with 2 degrees of freedom.
Significance = 0.7349

at the .05 level (See Table 4.8). One-Way Analysis of Variance for gender by P.D.I. stage scales was also conducted and no significant differences were found (See Table 4.9).

In order to test differences in vocational maturity, a T-test was conducted between means on C.M.I. for males and females. The means were studied both as categorized variables and as single score means. No significance was found on either T-test (See Tables 4.10 and 4.11).

Also, a Crosstabulation of gender by high, medium, and low vocational maturity as measured by C.M.I. scores was conducted. The Chi Square analysis revealed no significance (See Table 4.12).

There appears to be no significant differences between males and females on the measure of vocational maturity (C.M.I. Attitude Scale) and the P.D.I. Therefore, the fourth hypothesis is rejected.

Hypothesis V:

- A. There will be a significant positive correlation between age and the six positive subscales of the "Psychosocial Development Inventory."
- B. There will be a significant negative correlation between age and the six negative subscales of the "Psychosocial Development Inventory."
- C. There will be a significant positive correlation between age and the measure of "Career Maturity."

Pearson Product-Moment Correlation Coefficients were computed correlating age as a single variable (mean 26.3) by P.D.I. subscales. Four of the twelve subscales were found to be

Table 4.8

One-Way Analysis of Variance for Gender by
 "Psychosocial Development Inventory" Subscales

	<u>F Coefficients</u>	<u>F Probability</u>
Basic Trust (N = 127)	1.176	0.2803
Autonomy (N = 127)	0.287	0.5933
Initiative (N = 127)	2.094	0.1504
Industry (N = 127)	0.508	0.4772
Identity (N = 127)	0.165	0.6849
Intimacy (N = 127)	2.772	0.0984
Basic Mistrust (N = 127)	0.109	0.7421
Shame and Doubt (N = 127)	0.151	0.6981
Guilt (N = 127)	0.004	0.9508
Inferiority (N = 126)	1.947	0.1654
Identity Diffusion (N = 126)	0.215	0.6436
Isolation (N = 126)	0.285	0.5947

Table 4.9
One-Way Analysis of Variance for Gender by
"Psychosocial Development Inventory"
Stage Scales

		<u>F Coefficients</u>	<u>F Probability</u>
Scale 1	Trust-Mistrust (N = 127)	0.698	0.4049
Scale 2	Autonomy-Shame and Doubt (N = 127)	0.407	0.5248
Scale 3	Initiative-Guilt (N = 127)	0.584	0.4463
Scale 4	Industry-Inferiority (N = 126)	1.072	0.3024
Scale 5	Identity-Identity Diffusion (N = 126)	0.089	0.7661
Scale 6	Intimacy-Isolation (N = 126)	0.097	0.7560

Table 4.10

T-Test of "Career Maturity Inventory" Score by Gender (Categorized Mean)

Variable	Number of Cases	Mean	Standard Deviation	Standard Error	Pooled Variance T Value	Degrees of Freedom	Estimate 2-Tail Probability
CMI Score							
Females	95	2.0632	0.561	0.058	0.52	125	0.602
Males	32	2.0000	0.672	0.119			

Table 4.11

T-Test of "Career Maturity Inventory" Score by Gender (Score Mean)

Variable	Number of Cases	Mean	Standard Deviation	Standard Error	Pooled Variance T Value	Degrees of Freedom	Estimate 2-Tail Probability
CMI Score							
Females	95	37.5158	5.140	0.527	0.66	125	0.511
Males	32	36.8125	5.474	0.968			

Table 4.12
 Crosstabulation of "Career Maturity Inventory"
 (High, Medium and Low Vocational Maturity)
 by Gender

			Female	Male	Row Score
Career Maturity Inventory Score	Low	N	12	7	19
		Row %	63.2	36.8	15.0
		Column %	12.6	21.9	
		Total %	9.4	5.5	
	Medium	N	65	18	83
		Row %	78.3	21.7	65.4
		Column %	68.4	56.3	
		Total %	51.2	14.2	
	High	N	18	7	25
		Row %	72.0	28.0	19.7
		Column %	18.9	21.9	
		Total %	14.2	5.5	
Column			95	32	127
Total			74.8	25.2	100.0

Raw Chi Square = 2.01383 with 2 degrees of freedom.

Significance = 0.3653

significant at the .05 level. Two negative scales, Shame and Doubt, and Inferiority, were negatively correlated. Therefore, the older subjects in the sample experienced less Shame and Doubt than younger members of the sample. Two positive scales were significant. Industry was positively correlated, which meant that older subjects demonstrated an attitude reflective of more Industry than younger subjects. However, the Initiative subscale was negatively correlated at the .01 level. Basically, this meant that the older subjects scored lower on the Initiative subscale than did younger subjects* (See Table 4.13).

When age was categorized (17-20, 21-24, 25-34, 35 plus) and Pearson Product-Moment Correlation Coefficients were computed for age and for P.D.I. subscales, similar results were found but at a more stringent level of significance (See Table 4.14).

One-Way Analysis of Variance was computed comparing differences between age (categorized) and stage scales of P.D.I. No significant differences were found (See Table 4.15).

The relationship between age and career maturity was studied by conducting Pearson Product-Moment Correlation Coefficients for age by scores on the C.M.I. Significance was found at the .05 level (See Table 4.16).

*It is interesting to note that when Pearson Product-Moment Correlation Coefficients are computed for the total population tested two additional scales reached significance. They were Basic Mistrust (0.018) and Identity (0.031) (See Appendix F.1).

Table 4.13

Pearson Product-Moment Correlation Coefficients for Age
by "Psychosocial Development Inventory" Subscales

	<u>Basic Trust</u>	<u>Autonomy</u>	<u>Initiative</u>	<u>Industry</u>	<u>Identity</u>	<u>Intimacy</u>
Age	0.0320 (126) p = 0.361	-0.1227 (126) p = 0.086	-0.2462 (126) p = 0.003**	0.1898 (126) p = 0.017*	0.1249 (126) p = 0.082	0.1003 (126) p = 0.132
	<u>Basic Mistrust</u>	<u>Shame and Doubt</u>	<u>Guilt</u>	<u>Inferiority</u>	<u>Identity Diffusion</u>	<u>Isolation</u>
Age	-0.1264 (126) p = 0.079	-0.1900 (126) p = 0.017*	0.1419 (126) p = 0.057	-0.1838 (126) p = 0.020*	-0.0136 (126) p = 0.440	-0.0561 (126) p = 0.266

*Significant at the .05 level.
** Significant at the .01 level.

Table 4.14

Pearson Product-Moment Correlation Coefficients for Age
(Categorized as 17-20, 21-24, 25-34, 35+) by
"Psychosocial Development Inventory" Subscales

	Cases	Mean	Standard Deviation
Age	127	2.2756	1.2578
Basic Trust	127	23.8661	4.9575
Autonomy	127	23.6299	4.1266
Initiative	127	26.7165	4.4094
Industry	127	25.6535	4.5554
Identity	127	25.7008	5.2301
Intimacy	127	27.2362	4.2733
Basic Mistrust	127	15.2441	6.0602
Shame and Doubt	127	18.7087	4.5532
Guilt	127	17.1417	5.1651
Inferiority	126	16.6032	5.6978
Identity Diffusion	126	17.3492	5.3566
Isolation	126	15.4444	5.0589

	<u>Autonomy</u>	<u>Initiative</u>	<u>Industry</u>	<u>Identity</u>	<u>Intimacy</u>
Age	-0.0119	-0.2720	0.1899	0.0947	0.0336
	p = 0.447	p = 0.001**	p = 0.016*	p = 0.145	p = 0.354
	<u>Basic Mistrust</u>	<u>Guilt</u>	<u>Inferiority</u>	<u>Identity Diffusion</u>	<u>Isolation</u>
	Shame and Doubt				
Age	0.1318	0.1063	-0.2262	0.0149	-0.045
	p = 0.070	p = 0.011*	p = 0.005**	p = 0.434	p = 0.308

*Significant at the .05 level. **Significant at the .01 level.

Table 4.15

One-Way Analysis of Variance for Age (Categorized:
17-20, 21-24, 25-34, 35+) by Stage Scales of
"Psychosocial Development Inventory"

		<u>F Ratio</u>	<u>F Probability</u>
Scale 1	Trust-Mistrust (N = 127)	1.180	0.3203
Scale 2	Autonomy-Shame and Doubt (N = 127)	1.665	0.1780
Scale 3	Initiative-Guilt (N = 127)	2.196	0.0919
Scale 4	Industry-Inferiority (N = 126)	1.719	0.1666
Scale 5	Identity-Identity Diffusion (N = 126)	0.372	0.7736
Scale 6	Intimacy-Isolation (N = 126)	0.921	0.4328

Table 4.16

Pearson Product-Moment Correlation Coefficient
for Age by "Career Maturity Inventory" Score

	Cases	Mean	Standard Deviation	Pearson R Correlation Coefficient	P
CMI Score	127	37.3386	5.2133	0.1786	0.023*
Age	126	26.3016	10.1132		

*Significant at the .05 level.

When Age was categorized, greater significance was found
(See Table 4.17).

Table 4.17

Pearson Product-Moment Correlation Coefficient for
Age (Categorized: 17-20, 21-24, 25-34, 35+)
by "Career Maturity Inventory" Score

	Cases	Mean	Standard Deviation	Pearson R Correlation Coefficient	P
CMI Score	127	37.3386	5.2133	0.2422	0.003*
Age	126	2.2756	1.2578		

*Significant at the .01 level.

In addition, a Pearson Product-Moment Correlation Coefficient was computed comparing C.M.I. score (categorized as high, medium, and low vocational maturity) with age categorized.

The resulting ratio of 0.2072 was significant (0.010) at the .05 level (See Table 4.18).

Table 4.18

Pearson Product-Moment Correlation Coefficient
for "Career Maturity Inventory" Score (High,
Medium, Low Vocational Maturity) by Age

	Cases	Mean	Standard Deviation	Pearson R Correlation Coefficient	P
CMI Score	127	2.0472	0.5890	0.2072	0.010*
Age	127	2.2756	1.2578		

*Significant at the .01 level.

There appears to be a relationship between certain P.D.I. subscales and age. The majority are not significant; therefore, non-acceptance of hypothesis five is required. However, age was found to be significantly related to career maturity. Acceptance of this aspect of the hypothesis is possible.

Additional Analysis

In order to further explore the basic components of the study, additional analyses were conducted.

Since no significance was found to explain the differences between persisters and non-persisters, an analysis of disposition by age and gender was done. A Crosstabulation of gender by disposition was conducted. The Chi Square coefficient was not significant, indicating that no differences

are to be found between males and females on persistence and non-persistence in the sample (See Table 4.19).

A T-test was computed comparing ages of persisters (26.96) and non-persisters (24.51). Although non-persisters were slightly younger, there was not a significant difference at the .05 level (See Table 4.20).

In addition, a Crosstabulation of disposition (persistence and non-persistence) by age as categorized variable was computed. No significant differences were found (See Table 4.21).

Since the "Career Maturity Inventory" has been criticized for being more of a cognitive measure of intelligence, a Pearson Product-Moment Correlation Coefficient was computed for C.M.I. score by educational level completed. No significant relationship was found (See Table 4.22).

The last three questions of the Demographic Survey in the A.S.D.Q. asked the sample to rate their emotional well-being, physical health, and the status of their relationship with others. The responses to the nine-point scale were regrouped (1 to 4 as poor, 5 to 7 as average, and 8 to 9 as good) for analysis.

One-Way Analysis of Variance for well-being by the stage scales of P.D.I. were computed and all six tests were significant at the .01 level (See Table 4.23). One-Way Analysis of Variance was conducted for well-being by C.M.I. score but was not significant. Similarly, when Crosstabulation

Table 4.19
 Crosstabulation of Disposition
 (Persisters Versus Non-Persisters) by Gender

		Female	Male	Row Score
Disposition	Persisters	N 59	17	76
		Row % 77.6	22.4	67.9
		Column % 70.2	60.7	
		Total % 52.7	15.2	
	Non-Persisters	N 25	11	36
		Row % 69.4	30.6	32.1
		Column % 29.8	39.3	
		Total % 22.3	9.8	
Column		84	28	112
Total		75.0	25.0	100.0

Corrected Chi Square = 0.49123 with 1 degree of freedom.

Significance = 0.4834

Raw Chi Square = 0.87329 with 1 degree of freedom.

Significance = 0.3500

Table 4.20
T-Test Comparing Persisters and Non-Persisters by Age

Variable	Number of Cases	Mean	Standard Deviation	Standard Error	Pooled Variance Estimate		
					T Value	Degrees of Freedom	2-Tail Probability
Age							
Persisters	76	26.9605	10.039	1.152			
Non- Persisters	35	24.5143	10.285	1.739	1.18	109	0.239

Table 4.21

Crosstabulation of Disposition
(Persistence Versus Non-Persistence) by Age
(Categorized as 17-20, 21-24, 25-34, 35+)

		17-20	21-24	25-34	35+	Row Total
Disposition	Persisters	N 30	9	17	20	76
		Row % 39.5	11.8	22.4	26.3	67.9
		Column % 61.2	69.2	77.3	71.4	
		Total % 26.8	8.0	15.2	17.9	
	Non-					
	Persisters	N 19	4	5	8	36
		Row % 52.8	11.1	13.9	22.2	32.1
		Column % 38.8	30.8	22.7	28.6	
		Total % 17.0	3.6	4.5	7.1	
Column		49	13	22	28	112
Total		43.8	11.6	19.6	25.0	100.0

Raw Chi Square = 2.05750 with 3 degrees of freedom.

Significance = 0.5606

Table 4.22

Pearson Product-Moment Correlation Coefficient
for "Career Maturity Inventory" Score by
Highest Educational Level Completed

	Cases	Mean	Standard Deviation	Pearson R Correlation Coefficient	P
Highest Educational Level Completed	127	2.9449	1.4271	0.0303	0.368
CMI Score	127	37.3386	5.2133		

Table 4.23

One-Way Analysis of Variance for Well-Being Responses
(Poor, Average, Good) by Stage Scales of
"Psychosocial Development Inventory"

	Means	F Ratio	F Probability
Trust - Mistrust (N = 127)	Poor 33.88 Average 43.73 Good 47.58	18.364	0.0000**
Autonomy - Shame & Doubt (N = 127)	Poor 34.53 Average 39.77 Good 42.48	11.303	0.0000**
Initiative - Guilt (N = 127)	Poor 40.00 Average 43.84 Good 47.80	7.098	0.0012**
Industry - Inferiority (N = 126)	Poor 42.12 Average 42.37 Good 46.95	3.726	0.0268**
Identity - Identity Diffusion (N = 126)	Poor 37.00 Average 41.33 Good 48.25	9.981	0.0001**
Intimacy - Isolation (N = 126)	Poor 44.00 Average 44.60 Good 50.95	9.671	0.0001**

**Significant at the .01 level.

(Chi Square) tests were made for well-being by age, sex, disposition, and persistence, no significance was found.

One-Way Analysis of Variance for health and P.D.I. stage scales found that three of the six scales were significant at the .01 level (See Table 4.24). One-Way Analysis of Variance for health by C.M.I. score was not significant, and Crosstabulation (Chi Square) for health by disposition age, and sex was also not significant. But, the Crosstabulation for health with persistence was significant (See Table 4.25).

Human relations was similarly assessed using a One-Way Analysis of Variance approach for P.D.I. stage scales and C.M.I. score. All six P.D.I. stage scales proved to be significant at the .01 level while the C.M.I. score was not significant. Similarly, when human relations was compared to sex, age, persistence, marital status, and disposition, no significance was found (See Table 4.26).

For a summary of the tests computed and results for the three variables: health, human relations, and well-being, see Table 4.27

Prediction of Persistence

Which factors account for the variance between persisters and non-persisters were studied by a Multiple Regression technique employing as the dependent variable the disposition of subjects as of July 1, 1979. The persisters and non-persisters as defined earlier (See Table 3.5)

Table 4.24

One-Way Analysis of Variance for Health Responses
(Poor, Average, Good) by Stage Scales of
"Psychosocial Development Inventory"

	Means	F	Ratio	F	Probability
Trust - Mistrust (N = 127)	Poor 35.31 Average 44.07 Good 45.58		9.718		0.0001**
Autonomy - Shame & Doubt (N = 127)	Poor 36.81 Average 39.70 Good 41.06		3.023		0.0523
Initiative - Guilt (N = 127)	Poor 37.19 Average 44.30 Good 47.00		11.148		0.0000**
Industry - Inferiority (N = 126)	Poor 40.25 Average 43.07 Good 45.53		2.458		0.0897
Identity - Identity Diffusion (N = 126)	Poor 37.00 Average 42.52 Good 45.07		3.950		0.0217**
Intimacy - Isolation (N = 126)	Poor 42.88 Average 46.00 Good 48.11		2.784		0.0656

**Significant at the .01 level.

Table 4.25
Crosstabulation (Chi Square) of Health
by Persistence

		Persistence		Row Total
		0 to 95% Completion of Program	Completion of Time Allotted For Program	
Health	Poor	N	9	7
		Row %	56.3	43.8
		Column %	22.0	8.1
		Total %	7.1	5.5
	Average	N	20	36
		Row %	35.7	64.3
		Column %	48.8	41.9
		Total %	15.7	28.3
	Good	N	12	43
		Row %	21.8	78.2
		Column %	29.3	50.0
		Total %	9.4	33.9
Column		41	86	127
Total		32.3	67.7	100.0

Raw Chi Square = 7.26088 with 2 degrees of freedom.

Significance = 0.0265*

Significant at the .05 level.

Table 4.26

One-Way Analysis of Variance for Human Relations Responses
(Poor, Average, Good) by Stage Scales of
"Psychosocial Development Inventory"

	Means	F	Ratio	F	Probability
Trust - Mistrust (N = 127)	Poor 32.89 Average 42.44 Good 45.91	10.887		0.0000**	
Autonomy - Shame & Doubt (N = 127)	Poor 32.89 Average 39.12 Good 41.44	9.203		0.0002**	
Initiative - Guilt (N = 127)	Poor 37.78 Average 43.36 Good 46.37	6.123		0.0029**	
Industry - Inferiority (N = 126)	Poor 36.00 Average 42.84 Good 45.50	5.115		0.0073**	
Identity - Identity Diffusion (N = 126)	Poor 31.44 Average 40.40 Good 46.31	12.326		0.0000**	
Intimacy - Isolation (N = 126)	Poor 38.67 Average 44.48 Good 49.52	10.165		0.0001**	

**Significant at the .01 level.

Table 4.27

Analysis of Significance Tests Related to Well-Being,
Health, And Human Relations Questions

	<u>Variables</u>	<u>Test</u>	<u>Result</u>
Well-Being	By PDI Stage Scales	One-Way Analysis of Variance	Significant (All Scales)
	By CMI Score	One-Way Analysis of Variance	Not Significant
	By Disposition	Crosstabulations	Not Significant
	By Age	Crosstabulations	Not Significant
	By Sex	Crosstabulations	Not Significant
	By Persistence	Crosstabulations	Not Significant
Health	By PDI Stage Scales	One-Way Analysis of Variance	Significant (3 of 6 Scales)
	By CMI Score	One-Way Analysis of Variance	Not Significant
	By Persistence	Crosstabulations	Significant
	By Disposition	Crosstabulations	Not Significant
	By Age	Crosstabulations	Not Significant
	By Sex	Crosstabulations	Not Significant
Human Relations	By PDI Stage Scales	One-Way Analysis of Variance	Significant (All Scales)
	By CMI Score	One-Way Analysis of Variance	Not Significant
	By Disposition	Crosstabulations	Not Significant
	By Persistence	Crosstabulations	Not Significant
	By Age	Crosstabulations	Not Significant
	By Sex	Crosstabulations	Not Significant
	By Marital Status	Crosstabulations	Not Significant

were correlated with twenty-one other variables (See Table 4.28). The tolerance level was set at .80 and the level of significance at .05. Three variables were found to be significant. The first variable, number of jobs held in the last year, accounted for 8 percent of variance; Identity for approximately 3 percent; and Inferiority for an additional 5 percent. In total, only three variables accounted for 16 percent of variance (See Table 4.29).

A second Multiple Regression was computed following manipulation of definitions. Persisters were redefined as only those who had completed their program of study within the allotted time (by July 1, 1979). Non-persisters were redefined as those who quit, took a leave of absence or dropped out due to absenteeism, personal reasons or inappropriate behavior. Again, the twenty-two variables were correlated. With a tolerance level of .80 and significance level set at .05, five variables were significant. They were: Marital Status (10 percent), Identity (5.7 percent), Inferiority (5.8 percent), Highest Educational Level Completed (6.6 percent), and Career Maturity (3.4 percent). In total, these five variables accounted for 32 percent of variance for non-persistence (See Table 4.30).

Summary of the Hypotheses Tests

Five major research hypotheses made up of nine research statements were empirically investigated in order to study the relationship between career maturity,

Table 4.28
Multiple Regression Analysis
Variable List

Variables:

1. Reason (Persisters, Non-persisters)
2. Career Maturity Inventory Score
3. Basic Trust
4. Autonomy
5. Initiative
6. Industry
7. Identity
8. Intimacy
9. Basic Mistrust
10. Shame and Doubt
11. Guilt
12. Inferiority
13. Identity Diffusion
14. Isolation
15. Sex
16. Age
17. Marital Status
18. Education Completed
19. Years Out of School
20. Years Working on a Full-time Basis
21. Income in Last Year
22. Number of Jobs in Last Year

Table 4.29
Multiple Regression Analysis for Disposition

Dependent Variable: Disposition (persistence versus non-persistence as defined for hypotheses)
Tolerance: .80
Level of Significance: .05

Summary Table for Significant Variables

Variable	Beta	Standard Error B	F	Multiple R	R Square	R Square Change**	Simple R
Number of Jobs in Last Year	0.219	0.038	5.242	0.29	0.08	0.08	0.29
Identity	0.305	0.009	8.303	0.34	0.12	0.03	0.18
Inferiority	0.262	0.009	5.716	0.40	0.16*	0.05	0.17

N = 104
Degrees of Freedom $\begin{matrix} \text{Regression 3} \\ \text{Residual 100} \end{matrix}$
*Total variance accounted for by all three significant variables.
**Individual variance accounted for by each variable.

Table 4.30

Multiple Regression Analysis for Revised Disposition Factors

Dependent Variable: Disposition (revised definition of persistence and non-persistence)

Tolerance: .80

Level of Significance: .05

Summary Table for Significant Variables

Variable	Beta	Standard Error B	F	Multiple R	R Square	R Square Change**	Simple R
Marital Status	0.265	0.057	5.047	0.32	0.10	0.10	0.32
Identity	0.454	0.012	11.183	0.40	0.16	0.06	0.22
Inferiority	0.528	0.014	10.736	0.47	0.22	0.06	0.15
Highest Educational Level Completed	0.320	0.048	6.104	0.53	0.28	0.07	0.14
CMI Score (Career Maturity)	0.208	0.012	2.564	0.56	0.32*	0.03	0.05

N = 58

Degrees of Freedom	Regression 5
	Residual 52

*Total variance accounted for by all five significant variables.

**Individual variance accounted for by each variable.

psychosocial development, age, gender, persistence, and non-persistence. A summary of the results of the hypotheses testing were as follows:

	<u>Hypothesis</u>	<u>Results</u>
I A	There will be a significant positive correlation between the measure of vocational maturity and the six positive subscales of the "Psychosocial Development Inventory."	Rejected*
I B	There will be a significant negative correlation between the measure of vocational maturity and the six negative subscales of the "Psychosocial Development Inventory."	Accepted
II	There will be a significant difference in the means between persisters and non-persisters on the twelve subscales of the "Psychosocial Development Inventory." On the six positive subscales, persisters will score higher than non-persisters. On the six negative scales, the non-persisters will have higher scores than persisters.	Rejected
III	There will be a significant difference in means between persisters and non-persisters on the "Career Maturity Attitude Scale."	Rejected
IV A	There will be a significant difference in the means between males and females on the measure of the twelve subscales of the "Psychosocial Development Inventory."	Rejected
IV B	There will be a significant difference in the means between males and females on the "Career Maturity Attitude Scale."	Rejected
V A	There will be a significant positive correlation between age and the six positive subscales of the "Psychosocial Development Inventory."	Rejected*

	<u>Hypothesis</u>	<u>Results</u>
V B	There will be a significant negative correlation between age and the six negative subscales of the "Psychosocial Development Inventory."	Rejected*
V C	There will be a significant positive correlation between age and the measure of "Career Maturity."	Accepted

*Some specific P.D.I. subscales were significantly correlated.

Multiple Regression techniques (tolerance level set at .80) found that three variables were significant (Number of Jobs in the Last Year, Identity, and Inferiority) at the .05 level in accounting for 16 percent of variance between persisters and non-persisters. When the definition of persistence was changed, five variables (Marital Status, Identity, Inferiority, Highest Educational Level Completed, and C.M.I. score) were identified as accounting for 32 percent of variance.

Other tests analyzing persistence and non-persistence differences by gender and age were not significant except for how the sample rated Health. Health, Well-being, and Human Relationships were found to be significantly related to P.D.I. stage scales but not to C.M.I. score, age, sex, or persistence. Also, the C.M.I. was not significantly correlated with the Highest Educational Level Completed by subjects.

In Chapter V a summary of the study is presented. The findings of the study are discussed and conclusions drawn. Limitations of the study and implications for future research are outlined.

CHAPTER V

SUMMARY AND CONCLUSIONS

The purpose of the study was to: (1) identify factors differentiating persisters from non-persisters in an adult population attending a community college for academic upgrading; (2) examine the relationship between the concepts of psychosocial and vocational maturity; (3) identify the stages of psychosocial development and attitudinal factors of vocational maturity which influence persistence and non-persistence; and (4) identify unresolved stages in development for which interventions could beneficially be made for adults returning to formal education. The impetus was provided for the study by the above objectives' potential, practical, and theoretical value.

Summary

In this study an attempt was made to inter-relate two basic theoretical concepts, vocational and psychosocial maturity, with differences found between students who persist and those who did not persist in adult academic upgrading programs at a community college. The assumption was made that the lack of persistence is a symptom of a more central pattern or style of life. Style of life is a part of the general process of development, and lack of persistence is a

reflection of the lack of resolution of certain stages or attitudes in that general development.

A review of relevant research supported the suggestion that vocational development (Super, 1957; Crites, 1965), particularly the construct of vocational maturity (Bohn, 1966; Bartlett, 1968; Lawrence and Brown, 1976; Yen and Healy, 1977), was part of general development and was closely related to the construct of psychosocial development (Munley, 1974; Heath, 1976; Martin and Redmore, 1978). Similarly, research in the area of student persistence (Calder, 1977; Near, 1977) suggested that psychosocial factors were crucial in understanding the motivation and development of students. Also implied in the research was that differences in demographic characteristics such as sex, age, and work experience impact on the development of social and vocational maturity (Constantinople, 1969). The review of the literature revealed that adequate instrumentation was available to measure vocational and psychosocial development. The first six stage crises of psychosocial development, outlined by Erikson, were explored as variables influencing vocational maturity and persistence in adult upgrading students by means of the "Psychosocial Development Inventory" (Constantinople, 1969). Vocational maturity, as described by John Crites, was measured by the attitude scale of the "Career Maturity Inventory" (Crites, 1973). Hypotheses were formulated stating that there exists: (1) a linear relationship between scores on psychosocial development and

vocational maturity; (2) differences between persisters and non-persisters; and (3) age and gender differences in psychosocial development, vocational maturity, and persistence factors.

One hundred and twenty-seven adults enrolled in academic upgrading (sixth through twelfth grade) programs at St. Clair College volunteered to participate in this naturalistic study. The adults were administered, during their first week orientation program, the "Adult Student Development Questionnaire" which consisted of a demographic survey, the "Psychosocial Development Inventory," and the "Career Maturity Inventory Attitude Scale." Follow-up data was collected on the students for the next six to nine months to determine persisters and non-persisters, and the specific reasons the individuals gave for discontinuation of their programs. Statistical hypotheses which were formulated to test the relationship between career maturity, psychosocial development, age, gender, persistence, non-persistence, and selected demographic characteristics were analyzed by means of Pearson Product-Moment Correlation Coefficients, One-Way Analysis of Variance, Chi Square Crosstabulations, Multiple Regression Analysis, and simple T-tests.

A summary of the results are presented below:

1. Reliability for the P.D.I. subscales ranged from .30 to .75 and for stage scales from .35 to .75. Reliability for the C.M.I. Attitudinal Scale was .78.

2. A significant relationship (at the .05 level) was found between the measure of psychosocial development and the measure of vocational maturity. Two of the positive subscales (Trust .016, Identity .014) were significant and all six negative subscales (Mistrust .000, Shame and Doubt .000, Guilt .000, Inferiority .000, Identity Diffusion .002, Isolation .000). Four of the six stage scales were significant at the .01 level (Trust-Mistrust .0027, Autonomy-Shame and Doubt .0091, Industry-Inferiority .0071, Intimacy-Isolation .005).

3. No differences were found between the scores of persisters and non-persisters on the measures of psychosocial development and vocational maturity.

4. No differences were found between the scores of males and females on the measure of psychosocial development and vocational maturity, nor on persistence and non-persistence.

5. Some differences were found between scores of various age groups on the measures of psychosocial development. Older subjects scored higher than younger subjects on Industry (.017), while younger subjects were significantly higher on Initiative (.003). Younger subjects reflected a greater sense of Shame and Doubt (.017), plus Inferiority (.02). Older subjects also had higher career maturity ratings (.003).

Additional exploratory analysis revealed that:

1. Sample responses to questions on emotional

well-being (all six stage scales were significant at the .05 level), physical health (Trust, Initiative, Identity stage scales significant at the .05 level), and relations with others (all six stage scales significant at the .01 level) were statistically significant when correlated with psychosocial development measure. They were not significantly related to sex, age, disposition, persistence, or C.M.I. score variables. The one exception was that poor health ratings were indicative of non-persistence (.0265).

2. Multiple Regression Analysis (tolerance level set at .80) revealed that three variables (Number of Jobs Held in Last Year, Identity, Inferiority) were significant at the .05 level in accounting for 16 percent of variance between persisters and non-persisters.

3. The measure of vocational maturity was not significantly correlated with Highest Educational Level Completed by subjects.

Conclusion and Discussion

Before elaborating on the results, a discussion of the limitations of the dependent variables is in order.

Instrumentation

The current study used two major dependent variables. Their effectiveness is reviewed below.

A. "Psychosocial Development Inventory." Erikson's theory of psychosocial development was chosen because as a stage theory it provides a theoretical framework in which

to think about individual differences. The P.D.I. was found to be the only short self-report instrument that had been used to validate Erikson's theory and in obtaining normative data. Previous research had been conducted solely on university populations; however, in the current study, it was postulated that P.D.I., if reliable, should be sufficiently sensitive to distinguish unique stage differences for an adult population who had not successfully completed their high school education and in general had not met the normative standards of society. Adult's psychosocial development should differ from the psychosocial development of the university samples cited in previous research.

In Table 5.1 mean results are shown for the St. Clair sample compared to Constantinople's 1965 sample. All means are higher for the St. Clair sample. The positive subscales were only marginally greater while the negative subscales reflect much larger differences, particularly on the first three stages. The elevation of the positive subscales was somewhat unexpected but may be due to one of several reasons: (1) the population sampled were older (approximately twenty-six compared to twenty-one for Constantinople's sample); (2) the sample are much more social agency sophisticated and perhaps results are influenced by positive response set; and/or (3) as a selected group for sponsorship, they may have positive strengths, despite a lack of resolution of earlier stages. The negative subscale elevation substantiated the original

Table 5.1

Positive Scales	Total Means	St. Clair Sample	Constantinople	Negative Scales	Total Means	St. Clair Sample	Constantinople
Basic Trust	(23.956)* 23.866**	M 24.69	M 23.9	Basic Mistrust	(15.220) 15.244	M 14.94	M 12.6
		F 23.59	F 22.3			F 15.35	F 12.4
Autonomy	(23.604) 23.630	M 23.97	M 23.2	Shame and Doubt	(18.753) 18.709	M 18.44	M 15.2
		F 23.52	F 23.1			F 18.80	F 15.9
Initiative	(27.445) 26.717	M 27.69	M 25.6	Guilt	(17.198) 17.142	M 17.19	M 13.8
		F 26.39	F 24.8			F 17.13	F 14.6
Industry	(25.429) 25.654	M 25.16	M 24.2	Inferiority	(16.989) 16.603	M 17.81	M 17.1
		F 25.82	F 25.7			F 16.19	F 16.0
Identity	(25.571) 25.701	M 25.38	M 24.9	Identity Diffusion	(17.593) 17.349	M 16.969	M 16.1
		F 25.81	F 24.3			F 17.48	F 16.8
Intimacy	(26.973) 27.236	M 26.16	M 26.0	Isolation	(15.813) 15.444	M 15.03	M 14.9
		F 27.60	F 26.4			F 15.59	F 14.7
*Total Population Tested							
**Sample							

speculation regarding the sample. The results provide a measure of construct validity for the P.D.I. when comparing demographics of the St. Clair sample to Constantinople's sample.

In a similar comparison with the Munley sample (1973), using stage scores for high, medium, and low vocational maturity groups, it can be seen that the St. Clair sample is considerably lower on all stages and in all vocational maturity categories (See Table 5.2). This finding again is consistent in the expected direction.

The P.D.I. subscales are valuable in identifying specifically the factors related to Erikson's theory. However, the theory, being a stage theory, lends itself also to stage scales. The continuous score provided slightly higher reliability alphas and also a ten-point scale.

As indicated in Chapter III, reliability alphas for the current study on the P.D.I., both as subscales and stage scales, were comparable to Constantinople (1969) and Sommers (1979). The Autonomy subscale reliability (.29) looks particularly weak and consequently the Autonomy-Shame and Doubt stage scale reliability alpha (.35) is also low. Four items in the Autonomy-Shame and Doubt stage scale could use refinement (Autonomy Items 1 and 4; and Shame and Doubt Items 1 and 2). The other items requiring further development in the P.D.I. are: Guilt 5; Isolation 2; Autonomy 3; Identity Diffusion 2; and Shame and Doubt 4 (See Appendix E 1 and E 3). Although the data from this study indicates that the

Table 5.2

Comparison of Sample to Munley (1973) Study on "Psychosocial Development Inventory" Stage Scale Means for High, Medium, and Low "Career Maturity Inventory" Groups

CMI Group		PDI Stages				
		1	2	3	4	5
High (N = 40) CMI	Munley	53.45	53.49	52.65	52.61	53.38
	St. Clair	47.60	41.60	46.56	47.92	46.76
Medium (N = 45) CMI	Munley	52.41	50.23	50.52	52.06	51.74
	St. Clair	43.59	40.29	44.58	43.53	42.62
Low (N = 38) CMI	Munley	43.51	46.02	44.20	44.78	44.39
	St. Clair	38.53	36.11	41.95	39.42	39.32

instrument warrants further study and refinement, it also provides evidence of the validity of the P.D.I.'s usage with adults as a measure of psychosocial development.

The P.D.I. appears to have sufficient sensitivity, at least in the negative scales and in the majority of stage scales, to detect lack of resolution of crisis as outlined by Erikson. The negative subscales have much greater variance than the positive subscales which probably accounts for the high number of significant results with negative scales. It appears that it is easier for the subjects to describe who they are not, or at least to identify their weaknesses, than to identify, admit, or reveal positive growth areas.

B. "Career Maturity Inventory." The C.M.I. Attitude Scale was chosen as the operational measure of vocational maturity due to its rich research background and its validity as a developmental measure. Previous research (Moore and McLean, 1977; Crites, 1973) has found the C.M.I. to be appropriate with college populations and in measuring the construct of career maturity. As reported in Chapter III, Table 3.3, the results in the current sample reflect a fairly normal distribution of results without a restricted range or ceiling effect. The results of hypothesis five support the contention that career maturity is a function of age. The reliability for the attitude scale (.78) is slightly higher than that reported by Crites (.74). The validity of the usage of the instrument with other than middle class

populations remains an open question. However, the items appear to discriminate among high and low vocational maturity groups and these groups hold up when compared to psychosocial development. The items may reflect a middle class value system; however, that is the very value system with which the typical adult retraining student may be struggling to become a part.

Westbrook (1976) has criticized the C.M.I. for being more a measure of cognitive development than career maturity. When the C.M.I. Attitudinal Scale was analyzed based on the amount of education completed by the subjects, no statistical significance was found (See Table 4.22). In this study, therefore, the only measure reflecting an indication of intellectual ability does not support Westbrook's criticism.

The test of reliability did indicate that there are several items requiring revision. They are variables 2, 21, 38, 42, and 50. In general, the C.M.I. Attitudinal Scale held up effectively in this study.

Hypotheses Test Results

The first hypothesis tested speculated that there was a linear relationship between scores on the C.M.I. and the P.D.I. Although only two of the positive subscales were significant, four of the six stage scales and all six negative subscales were significant. There was a significant positive correlational relationship between the concepts. This finding provides support for the basic assumption in the study that the two concepts are developmental.

As indicated in Chapter I, an individual's sense of ego identity depends on the degree to which the individual shares society's value system. Therefore, a person's ego development is dependent on whether they have a feeling of being a worthy person because they fit into a coherent and valued order of things. Since holding a job is a valued norm and adult retraining students have had difficulty obtaining and/or maintaining an occupation, it is reasonable to assume they do not feel worthy. But what comes first, the lack of a feeling of worth or a lack of job attainment?

It is speculated in Chapter I that if career maturity was strictly related to job acquisition it may solely be related statistically to the Identity-Identity Diffusion stage. However, if it was more of a developmental concept, it would be related significantly to earlier stages of development as theorized by Erikson. The fact that Stages 1, 2, and 4 (Trust-Mistrust, Autonomy-Shame and Doubt, and Industry-Inferiority) are significantly related to career maturity, indicates that it is a developmental construct. Those lacking in vocational maturity also reflect low stage resolution of Stages 1, 2, and 4. In fact, all negative subscales were significantly correlated. Since the C.M.I. Attitudinal Scale is theoretically related to an individual's concepts regarding the world of work, it appears reasonable to state that these concepts are influenced by psychosocial factors such as a person's sense of guilt, inferiority, lack of identity, shame and doubt, and mistrust of others and

things. If lack of early stage resolution detrimentally affects later stage resolution and ultimately career maturity is true, and the results in this study imply the validity of this statement, then it is crucial that educators deal with the lack of vocational maturity not as solely a lack of career information but as part of a general pattern of development. General development incorporates both vocational and psychosocial development factors.

Two basic assumptions regarding developmental theory were made in the current study. They are: (1) development is a life-long process that has definite stages; and (2) development is hierarchical in that the stages need to be resolved successfully or the lack of resolution will make further growth difficult. Basic to these concepts is the belief that as the person progressively resolves stages he/she moves from dependency to independency by acquiring skills and competencies necessary to perform adequately in ways valued by others and adjustments demanded by social situations. The lack of resolution of earlier stages retards the acquisition of these skills and competencies, and makes the individual much more dependent. As indicated earlier, the St. Clair sample mean scores on negative subscales and on stage scales reflect less resolution of stage development. Given then that the St. Clair sample reflects less successful resolution of stages outlined by Erikson than samples in previous studies (Constantinople, 1965; Munley, 1973), it is reasonable to assume, based on developmental theory,

that they would be a more dependent group of individuals. The St. Clair sample's demographic characteristics profile substantiates this claim in that they have required government financial sponsorship in order to assist them to attain skills and competencies needed to obtain and maintain a job. The lack of skill and competency acquisition not only makes the individual more dependent, it also locks the individual into a present focus rather than a future orientation. A lack of a future orientation leads to an impulsive life style rather than one characterized by delayed gratification. In order to planfully select and commit to future personal and social goals, an individual needs to be able to defer their present needs. But the adult retraining student finds himself/herself functioning at a survival needs level, attempting to provide food and shelter. It becomes difficult for the individual to abstract or generalize to the future in all but a vague way.

Erikson theorized that identity closure takes place much earlier when an individual leaves formal education. Given the immediate demands placed upon early school dropouts, it is not surprising that identity closure is accelerated. Unfortunately, the reasons an individual leaves school at an early age may be related to previous lack of stage resolution which causes further dependence. This dependence may get transferred from the school system and family to social welfare and manpower agencies.

However, when the vocational and psychosocial developmental concepts are used to distinguish between persisters and non-persisters in the second and third hypotheses, no differences were found. In fact, the only difference found between persisters and non-persisters was their response to the question regarding physical health. Those responding as rating self in poor health tended to drop out. This finding is surprising since those who dropped out due to health or medical reasons were not included in the sample. Perhaps health attitudes play a greater importance in whether a person persists than previously acknowledged. Also, health attitudes may be an area of self awareness that is at a more conscious, or at least at a more legitimately able to be expressed, level.

The inability for the psychosocial development and career maturity measures to predict who would and would not persist were limited by the definition of persistence and the method of collating data. All the subjects in the study were sponsored students. During the course of the study, only thirty-five subjects discontinued for reasons able to be clearly identified as psychosocially related. As stated earlier, individuals indicating medical, academic, transfer, and unknown reasons were not included. The definition of persisters included those still at the college on July 1, 1979. The number of individuals still in a program at that time was disproportionate, indicating that the sponsorship, which is the weekly monetary stipend given

to each student who is in attendance and progressing adequately, may be a variable superceding other factors. When persistence was more narrowly defined as only those completing programs by June 30, 1979, the P.D.I. and C.M.I. still were not significantly correlated. As postulated earlier, the adult retraining students are dependent upon manpower sponsorship and this dependence both in a monetary and psychological sense may be eradicating any differentiation. A study of a similar population who are paying their own tuition would clarify whether sponsorship is unduly influential or if psychosocial and career maturity factors are just not good identifiers of non-persistence with this population.

The current study profiles the sample student group as: (1) relatively low on career maturity; (2) having elevated negative subscale scores on Mistrust, Shame and Doubt, Guilt, Inferiority, Identity Diffusion, and Isolation; (3) having experienced failure previously (approximately 50 percent failed at least one grade); and (4) having an inability to hold a full-time job during the previous year. The profile indicates factors similar to the psychosocial characteristics identified by Calder (1977) and Near (1977) as representative of drop-outs. Perhaps these factors being the norm for the group rather than a unique minority makes a difference in attitudes towards persistence. A student having the above profile entering an achievement oriented college or university group may

feel different since the peer value system would differ. Sponsorship, as seen by society in general, may be perceived as negative, but for this particular group it is the norm. Similarly, a sense of mistrust or shame and doubt, a lack of initiative or industry do not become the distinguishing characteristics within a minority but rather the norm. Therefore, staying in a program until sponsorship has expired is expected and condoned by the peer group, while academic achievement becomes secondary.

Previous research (Constantinople, 1969; Stark and Traxler, 1974) indicated that major differences existed between males and females on the P.D.I. scales. No differences were found in the current study on subscales or stage scales of the P.D.I. Although the sample was predominantly female (74.8 percent), the numbers were adequate for comparison. The lack of differences on any scale was unexpected. Perhaps the adult population (mean age of 26) reflected a totally different sequence of life experiences that neutralize the differences which other researchers such as Constantinople found with university samples. The St. Clair sample also consisted of a population who had left formal education at an early age. As stated above, Erikson speculated that early school drop-outs would experience premature foreclosure on identity, and social experience would lessen ego diffusion. In Table 5.1 data, comparing Constantinople's university sample and the St. Clair sample, does not support Erikson's speculation. Identity Diffusion and Identity

subscales were higher for adults who were drop-outs and had delayed returning to formal education.

Perhaps life experiences during early adolescence cause foreclosure on identity, thus explaining the lack of resolution of negative scales and also the similarity between genders. If this is so, then is it the educational institutions which promote differences between genders or do those who experience failure and dropping out of education uniformly receive negative evaluations from his/her environment and therefore are simply not allowed to resolve psychosocial crises?

Douvan and Adelson (1966) contended that boys tended to crystalize their identity by anchoring it in a vocational choice. They felt that the adolescent girl does not have the same opportunity. Perhaps both genders in the sample studied have kept his/her respective identities diffused because he/she did not have any concrete vision of his/her future other than a dim view of some hoped for goal that is dependent on assistance from a social agency. The agency he/she did not trust because they were not able to obtain for him/her employment in the first place. Thus, just like many adolescent females who are unable and/or unwilling to make an active decision on her identity due to multiple role expectations (wife, mother, career), so the sample males may not have a clear occupational or career goal. The males therefore have no clear answer to the questions of "Who am I? "What will I be? Lack of anchorage in the future

accounts for high Identity Diffusion scores for males and females. If this is true, then intervention is necessary to provide for them a future direction, goal, objective, to which they can identify and commit.

Questions remain as to why there are no differences between genders on any of the stages. Has the perceived life experiences of both males and females been similar since infancy? Does lack of resolution of early stages nullify later development so markedly that significant differences are not detectable? The negative P.D.I. scales appear to have sufficient variance to detect differences (20 to 37) while the positive scales have less variance (17 to 27), yet no single scale indicated statistically significant differences between genders.

Also, contradictory to previous research (Lawrence and Brown, 1976), career maturity scores did not differ significantly by gender. Although females scored slightly higher, the test results were not significant. This lack of difference may again reflect negative life experiences since the sample had been out of work at least one full year in order to be eligible for sponsorship. But why no differences? Perhaps, as LoCascio (1974) has pointed out, the C.M.I. is a middle-class instrument and not sensitive to differences in the sample population. The instrument, however, had an excellent range of responses and a curve approaching a normal distribution. Again it might be a similar career deprivation pattern for both genders. Maybe

both sexes' career maturity is equally detrimentally affected through lack of job attainment and/or maintenance.

The lack of significant differences between persisters and non-persisters by sex was also surprising. Historically females have had a much lower rate of attrition, yet no differences were found in this study.

Although the fifth hypothesis for age was rejected, certain results are worthy of comment. Older subjects scored significantly higher than younger subjects on Industry. Younger subjects had higher scores on Shame and Doubt, and Inferiority, but older subjects were significantly lower on Initiative. The older subjects seem to have lost their enthusiasm. This is probably due to lack of work and social status. They do, however, have some life experiences and do know what to do, unlike their younger counterparts who lack a sense of industry or direction. The younger subjects also are more intensely aware of their sense of Shame and Doubt, and Inferiority, than the older subjects. The younger students lack a sense of competency and require more intense personal intervention and job experience to deal with their lack of a sense of competence. Older students lack desire or initiative to even try. Intervention methods should differ for these groups.

Age was found to be significantly correlated with the "Career Maturity Inventory Attitude Scale." The older subjects scored higher on career maturity, thus supporting Crites' contention that career maturity increases with age.

Older students may not need similar kinds of career awareness programs. Since there is a difference in career attitudes, the older students may profit from other counseling intervention such as assertiveness training to assist in the resolution of the initiative phase. No differences were found by age for disposition or length of time persisting in college. Again, this is contrary to previous research (Sainty, 1979) where older subjects had lower attrition rates. The cell sizes for non-persisters might have been too small to allow for differences (See Table 4.22) to be detected.

Subjects were asked in the demographic portion of the A.S.D.Q. to rate their emotional well-being, physical health, and personal relations with others. These questions were drawn from Farquhar's "Assessment of Adult Adjustment Patterns Inventory" in an attempt to see if simple straight forward questions could distinguish those having difficulties in psychosocial development. Theoretically, it was speculated that emotional well-being would be related to Identity, health to Basic Trust, and personal relations to Intimacy. Ratings on these questions were able to discriminate on all but three of the stage scales. Those who rated themselves four or below on the nine-point scale were also significantly different on stage scales of the P.D.I. Perhaps these questions ought to be used in screening individuals needing counseling intervention. It appears that those rating themselves low are high risk students.

These questions did not, however, correlate with disposition, persistence, age, gender, and C.M.I. score except in one case. Subjects reporting low on health tended to drop out more frequently. This finding may indicate a greater need for proper health screening on college campuses.

In order to determine relative strength of prediction techniques using psychosocial, vocational, and demographic factors, Multiple Regression Analysis was used. The results were somewhat different than those found by Sainty (1970). Sainty found the major factors to be age, number of grades repeated, and number of changes of employment in the previous twelve months. In the current study, using the study's operational definition of persistence as the dependent variable, the Number of Jobs Held in the Last Year accounted for 8 percent of variance while Identity and Inferiority added 3 and 5 percent. Age and grades repeated were not significant.

When the definition of persistence was restricted to only those actually completing their program by June 30, 1979, different factors were found: Marital Status (10 percent); Identity (5.7 percent); Inferiority (5.8 percent); Highest Educational Level Completed (6.6 percent); and Career Maturity (3.4 percent). These five factors accounted for 32 percent of variance. Although these factors do not compare with the predictive strength of cognitive measures, they are valuable identifiers. Basically, the results indicated:

1. Married students are more likely to finish on time.
2. Identity and Inferiority are crucial psychosocial factors in persistence.
3. Transient students (Number of Jobs Held) are less stable than those totally unemployed, and may need special methods of intervention.
4. Prediction techniques should incorporate cognitive and psychosocial measures.
5. The higher the educational level completed by the student prior to enrollment in adult retraining, the lower the risk of attrition.

Educators, concerned with attrition, should note that psychosocial factors do contribute to variance between persisters and non-persisters. In some cases they are better predictors than many factors previously believed to be excellent indicators. Previous research has shown the importance of Identity as a crucial stage of development for adolescents. This study indicates that stage four, Industry-Inferiority, may be just as important a factor for adult upgrading students.

Limitations of the Study

This study has limitations that need to be considered when assessing the results. The research is basically a naturalistic study relying on volunteers to respond to self-report paper-and-pencil inventories. The very nature of

self-report instruments makes them susceptible to response set manipulation. The sample was not randomly selected but was an attempt within certain criteria to sample all subjects available in a certain time frame. The demographic characteristics of the sample were confirmed as being representative of the general adult retraining population. No marked differences were found between the current study sample and typical academic upgrading population statistics. But the large number of students dropped from the initial group tested (approximately one-third) for various reasons (language, incomplete booklets, different sponsors) may have eliminated some variance and provided a more constricted sample. In fact, it is very likely that those with higher levels of Mistrust, Guilt, and Inferiority would be among those who would not be included in the final sample used for the analysis.

The "Psychosocial Development Inventory" discussed earlier had several limitations. The language still requires clarification for this type of population. Several items need refinement. Perhaps the two major limitations of the instrument are that the scales are so small, only consisting of five items, and that they only cover six of the eight Eriksonian stages. When assessing adults, it would be better to be able to assess all eight stages.

The "Career Maturity Inventory" appears to be adequate but several items need revision. Also, some items were quite transparent. There is a need for an adult

vocational maturity scale which could extend further into the "establishment phase" of the vocational development of adults.

One of the major shortcomings of the present study was the definition and procedures for identifying persisters and non-persisters. A more systematic in-depth personal exit interview or follow-up technique might be appropriate in identifying reasons for discontinuation. It also would be beneficial to have a longer time period for follow-up.

In interpreting the results, readers should also be cautioned that these results appear to be true only for academic upgrading adult retraining students who are English speaking and Manpower sponsored. The results, therefore, are limited in their generalizability to populations similar to the above.

Implications for Future Research and Practices

The current study has established additional evidence supporting the relationship between psychosocial and vocational maturity. Also, it has supported the theory that vocational maturity is monotonic. In general, the findings support Tiedeman and O'Hara's proposal (1963) that career development takes place within the context of psychosocial development as described by Erikson.

The practical implication for counselors is the potential for better understanding of vocational concerns when perceived from a psychosocial development stage

framework. It allows for differential counseling approaches. The adult student returning to college may lack initiative compared to fellow adolescent classmates who suffer from lack of industry. Identification of stage issues could lead to different methods of intervention by counselors treating various individuals. Future research should not only replicate the present study to see if the profile of adult students returning for upgrading is substantiated, but also various counseling intervention techniques could be studied to determine which are most effective in assisting individuals with specific psychosocial crisis resolution. Mistrust is a major unresolved issue for many agency bonded individuals. Intervention to increase trust during orientation to college may be beneficial. Until this attitude is modified, future learning may be selectively screened by the individual and academic or vocational goals detrimentally limited.

Future research may also profit from focusing on comparing various measures of psychosocial development. The present study has no base on which to determine if high negative subscales reflect certain levels of pathology. There is no base to identify the magnitude of the concerns. How deviant is the current sample? Further use of the P.D.I. along with other psychosocial instruments with various populations is recommended.

The study of persistence and the use of the psychosocial variables as predictors should be continued. With

more stringent controls on follow-up techniques, more reliable results could be obtained. Multiple regression techniques, which incorporate both cognitive measures and psychosocial plus vocational development measures, could be used simultaneously to determine if the latter contribute to variance beyond the cognitive measures.

The current study may also prove beneficial if replicated with other educational populations. In the adult retraining area, it would be beneficial to determine differences between skill program students and academic upgrading on psychosocial development, vocational maturity, and persistence. Similarly, a study of post-secondary college program students seems necessary, even if it is done simply to determine if any differences do exist between sexes in other college populations. The current study's lack of differentiation between genders should be explored not only in the college or university environment but also in other populations that have experienced similar developmental pressures. Are there similar psychosocial profiles for sexes among the poor or certain minority groups? The current study did not allow for minority comparisons but future researchers may benefit from such an inquiry.

Past studies on persistence have found that a sense of purpose and involvement have distinguished persisters from non-persisters. However, in order to get involved an individual must not only want to do something, but truly

must believe that they can do something. The profile of the adult retraining student in the current sample reflects a doubt as to their belief in themselves and their sense of competency. This disbelief and lack of anchorage in the future appears to be the norm in the group. What is the impact of negative resolution when it goes beyond individual dynamics to become a group norm? What are the methods of preventing such dynamics of individuals from becoming social norms? How can different organizational or educational climates affect such norms?

The results of the present study have: (1) further substantiated the relationship between the developmental concepts of vocational and psychosocial maturity; (2) identified psychosocial factors (Identity, Inferiority) and other factors (Career Maturity, Number of Jobs Held in the Last Year, Highest Educational Level Completed, Marital Status) that account for variance between persisters and non-persisters; (3) identified need for differential methods of intervention in counseling based on developmental theory; (4) identified differences between adult persisters and non-persisters in academic upgrading that are distinct from previous research on persistence; (5) identified attitudes towards physical health as an important factor in persistence for adults entering upgrading; and (6) established the importance of early psychosocial stage resolution (Trust-Mistrust, Autonomy-Shame and Doubt, Industry-Inferiority) in the development of vocational maturity of adult

upgrading students. In general, an attempt was made to demonstrate the value of developmental research in providing direction to educators. The difficulty in identifying causal factors for a complex behavior like persistence has also been demonstrated.

APPENDICES

APPENDIX A

ADULT STUDENT DEVELOPMENT QUESTIONNAIRE

Dear Friend:

Thank you very much for agreeing to participate in a study of adult student development. Your efforts in completing the following questions will provide valuable data about the developmental process. In addition, our findings could lead to improvement in the quality of education and college life offered at St. Clair.

We would like you to answer all the questions on the following pages. We are aware that some of the questions are personal, but please remember that your responses will be kept strictly confidential. A system of coded numbers will be used and the list of names will be seen only by the principal investigators, B. Desbiens, Dean of Student Services, and L. Peters, Project Manager, T.I.P. Researcher.

Please take your time in reading the instructions and completing the questionnaire. If you have any questions, feel free to ask us. Thank you for your time and cooperation.

Sincerely,

Brian Desbiens
Dean of Student Services

Linda Peters
Project Manager
T.I.P. Research Centre

RELEASE FORM: Study on
Student Development

OFFICE OF THE DEAN OF STUDENT SERVICES
ST. CLAIR COLLEGE

1. I freely consent to take part in a scientific study being conducted by Brian L. Desbiens, Dean of Student Services.
2. I have read the explanation of the study, and I understand the explanation and what my participation will involve.
3. I understand that I am free to discontinue my participation in the study at any time; however, in the interest of contributing to the knowledge of how normal adults develop, I will try my best to finish the part of the study to which I have committed myself, if I can do so in good conscience.
4. I understand that the results of the study will be treated in strict professional confidence and that I will remain anonymous. Within these restrictions, results of the study will be made available to me at my request.
5. I understand that my participation in the study does not guarantee any beneficial results to me.
6. I understand that, at my request, I can receive an additional explanation of the study after my participation is completed.

Signed

Witnessed By

Date

Date

ADULT STUDENT DEVELOPMENT QUESTIONNAIRE

PART ONE

(Please complete the following questions as specifically as possible. If you wish to make comments to further explain your answers, feel free to write those comments in the margins.)

ADULT STUDENT DEVELOPMENT QUESTIONNAIREPART ONE

1. Name _____
2. Program: Academic Upgrading _____ Skill Course _____
3. Your age in years _____
4. Sex: Female _____ Male _____
5. Marital Status: Divorced _____ Separated _____
Married _____ Single _____
Widowed _____
6. How many children do you have? None _____
One _____
Two-Three _____
Four-Five _____
Six or More _____
7. Age (in years) of youngest child
(put X if no children). _____
8. Age (in years) of oldest child
(put X if no children). _____
9. If married more than once, how
many marriages (if once or none
put X). _____
10. What languages can you speak and
understand? English (only) _____
English & French _____
Other (please specify) _____

11. Would you indicate your country
of birth. _____
12. Are you an only child? Yes _____ No _____

18. Please indicate the town/city where
you are presently living. _____
19. Presently, I am living: With parent(s) _____
With guardian _____
With spouse _____
With spouse
and children _____
Alone with
children _____
Alone _____
With friend(s) _____
Other (please specify) _____
20. Please indicate your highest
educational level completed
before coming to St. Clair. _____
21. Have you ever had to repeat a
school year? No _____ Yes _____
Please specify number of times _____
22. Before attending St. Clair,
how long had it been since
you last attended school on
a full-time basis? _____
23. Are you attending St. Clair
as a: Fee-paying student _____
C.M.C. sponsored
student _____
24. Work Load/Employment: I am NOT working
while at college _____
I am working _____
hours a week _____
while at college _____

ADULT STUDENT DEVELOPMENT QUESTIONNAIRE - PART ONE (Cont'd)

25. Please indicate the number of years you have worked on a full-time basis (one year = one continuous year of employment).

None _____

One _____

Two _____

Three-Five _____

Six-Ten _____

Over Ten Years _____

26. Please indicate the last full-time job you held (if none, put X).

27. Would you indicate last year's income.

0 - 2,999 _____

3,000 - 4,999 _____

5,000 - 7,999 _____

8,000 - 9,999 _____

10,000 - 14,999 _____

15,000 and above _____

28. Please indicate the number of jobs you have held in the last 12 months.

None _____

One _____

Two _____

Three _____

Four-Six _____

Seven or more _____

ADULT STUDENT DEVELOPMENT QUESTIONNAIRE - PART ONE (Cont'd)

29. Please rate your physical health (circle one number):

1	2	3		4	5	6		7	8	9
unhealthy				average				healthy		

30. Please rate your sense of emotional well-being
(circle one number):

1	2	3		4	5	6		7	8	9
unhappy				average				happy		

31. Please rate your sense of satisfaction with personal
relations (circle one number):

1	2	3		4	5	6		7	8	9
dissatisfied				average				satisfied		

THANK YOU VERY MUCH FOR COMPLETING PART ONE OF THE QUESTION-
NAIRE. WOULD YOU NOW BEGIN PART TWO.

ADULT STUDENT DEVELOPMENT QUESTIONNAIREPART TWO*

(There are a number of statements about career choice in this portion of the questionnaire. Career choice means the kind of job or work which you think you will probably be doing when you have finished all of your schooling.)

The following statements require true or false responses. If you agree or mostly agree with the statement, you would ✓ the true column. If you disagree or mostly disagree with the statement you would ✓ the false column.

*Note: This section consisted of the "Career Maturity Inventory-Attitude Scale" of John Crites, 1973.

ADULT STUDENT DEVELOPMENT QUESTIONNAIREPART THREE*

(On the following pages you will find a list of sixty terms and phrases which are used by students to describe themselves. Please use the list to describe yourself as you honestly feel and believe you are. Be sure when you do these ratings that you are guided by your best judgment of the way you really are. There is no need to ponder your ratings excessively; your first impressions are generally the best. Do the phrases in order. Be sure to answer every item.)

*Reference for Part Three: A. Constantinople, "Psychosocial Development Inventory," 1969, as revised by Susanne Sommers, 1978.

Dear Participant:

Thank you for completing this booklet. Your honesty and thoroughness will be very helpful in our attempt to understand adult students who return to college. If you have not completed certain sections, please try to do so since we can only use your results if all the items are complete.

Please feel confident that your answers will be treated confidentially. When you are about to leave the college, we would like to be able to share your results with you.

Please feel free to contact us.

With thanks,

Brian Desbiens
Dean of Student Services

Linda Peters
Project Manager
T.I.P. Research Centre

APPENDIX B

INSTRUCTIONS TO TAKE THE
"ADULT STUDENT DEVELOPMENT QUESTIONNAIRE"

APPENDIX B

INSTRUCTIONS TO TAKE THE
"ADULT STUDENT DEVELOPMENT QUESTIONNAIRE"

Standardized Introduction to Testing

1. Give Name and Position (Brian Desbiens, Dean of Student Services, St. Clair College)
(Linda Peters, Project Manager, T.I.P. Research Centre)
2. Intent of Testing
 - a) Collect data to improve orientation and education at St. Clair College
 - b) We will be collecting data from the next 200 students entering Retraining.
3. Confidentiality
 - a) All names will be coded so that no one can be identified.
 - b) The results of the questionnaire will in no way affect your grades at St. Clair College.
4. Benefits

When you have completed your stay at St. Clair College, you may come to the St. Clair College Research Centre (Room 88, right below the main office of the Retraining building) to obtain the results of your particular questionnaire.
5. During the testing period, feel free to ask us for help if you have any questions, but please try to answer all questions as accurately as possible. Try to describe what you believe, think, and feel, not what you think you ought to or what others expect you to believe, think, and feel.

APPENDIX C

CHARTS LISTING DETAILED CHARACTERISTICS OF
SAMPLE FROM THE DEMOGRAPHIC SURVEY OF THE
"ADULT STUDENT DEVELOPMENT QUESTIONNAIRE"

Table C.1

Age Distribution of Total Sample Tested

Age	Absolute Frequency	Adjusted Frequency (Percentile)	Cumulative Frequency (Percentile)
17	17	13.5	13.5
18	24	19.0	32.5
19	11	8.7	41.3
20	3	2.4	43.7
21	6	4.8	48.4
22	6	4.8	53.2
23	2	1.6	54.8
25	5	4.0	58.7
26	5	4.0	62.7
27	4	3.2	65.9
28	2	1.6	67.5
29	3	2.4	69.8
30	1	0.8	70.6
31	3	2.4	73.0
32	1	0.8	73.8
33	1	0.8	74.6
34	1	0.8	75.4
35	4	3.2	78.6
36	3	2.4	81.0
37	4	3.2	84.1
38	4	3.2	87.3
39	1	0.8	88.1
42	1	0.8	88.9
43	1	0.8	89.7
44	2	1.6	91.3
45	2	1.6	92.9
46	2	1.6	94.4
47	2	1.6	96.0
48	2	1.6	97.6
49	1	0.8	98.4
55	1	0.8	99.2
56	1	0.8	100.0
99	1	MISSING	100.0
TOTAL	127	100.0	

Mean 26.302 Mode 18.000 Median 21.833

Range 39.000 Minimum 17.000 Maximum 56.000

N = 126

Table C.2
Gender of Total Sample Tested

Gender	Absolute Frequency	Adjusted Frequency (Percentile)
Female	95	74.8
Male	32	25.2
TOTAL	127	100.0

N = 127

Table C.3
Marital Status of Sample Tested

Marital Status	Absolute Frequency	Adjusted Frequency (Percentile)
Divorced	7	5.5
Married	26	20.5
Separated	20	15.7
Single	70	55.1
Widowed	4	3.1
TOTAL	127	100.0

N = 127

Table C.4
 Number of Children Sample Tested Have

Number of Children	Absolute Frequency	Adjusted Frequency (Percentile)
0	68	54.8
1	12	9.7
2	32	25.8
3	7	5.6
4+	5	4.0
9	3	MISSING
TOTAL	127	100.0

N = 124

Table C.5
Languages Spoken by Sample Tested

Languages Spoken	Absolute Frequency	Adjusted Frequency (Percentile)
English	109	85.8
English/ French	9	7.1
Other	9	7.1
TOTAL	127	100.0

N = 127

Table C.6
Country of Birth for Sample Tested

Country of Birth	Absolute Frequency	Adjusted Frequency (Percentile)
Canada	114	89.8
U.S.A.	3	2.4
Europe	4	3.1
Caribbean	4	3.1
Far East	2	1.6
TOTAL	127	100.0

N = 127

Table C.7
Place Presently Living for Sample Tested

Town or City	Absolute Frequency	Adjusted Frequency (Percentile)
Windsor	104	81.9
Chatham	2	1.6
Belle River	4	3.1
Kingsville	3	2.4
Leamington	1	0.8
Other	13	10.2
TOTAL	127	100.0

N = 127

Table C.8
Sample Tested Presently Living With

Living With	Absolute Frequency	Adjusted Frequency (Percentile)
Parents	39	31.0
Guardian	2	1.6
Spouse	5	4.0
Spouse/ Children	20	15.9
Alone with Children	22	17.5
Alone	12	9.5
Friends	18	14.3
Other	8	6.3
	1	MISSING
TOTAL	127	100.0

N = 126

Table C.9

Highest Educational Level Completed
Before Coming to St. Clair College

Level	Absolute Frequency	Adjusted Frequency (Percentile)
8 or less	19	15.0
9	30	23.6
10	39	30.7
11	30	23.6
12	3	2.4
13	2	1.6
College/ University	1	0.8
Other	3	2.4
TOTAL	127	100.0

N = 127

Table C.10

Number of School Years Failed by Sample Tested

Number of Grades Failed	Absolute Frequency	Adjusted Frequency (Percentile)	Cumulative Frequency (Percentile)
0	69	54.3	54.3
1	44	34.6	89.0
2	9	7.1	96.1
3+	5	3.9	100.0
TOTAL	127	100.0	

N = 127

Table C.11

Number of Years Out of School Prior to
Attending St. Clair College by Sample Tested

Years	Absolute Frequency	Adjusted Frequency (Percentile)	Cumulative Frequency (Percentile)
0	3	2.4	2.4
1	25	19.7	22.0
2	19	15.0	37.0
3	11	8.7	45.7
4	8	6.3	52.0
5	6	4.7	56.7
6	6	4.7	61.4
7	2	1.6	63.0
8	4	3.1	66.1
10	5	3.9	70.1
11	1	0.8	70.9
12	4	3.1	74.0
13	2	1.6	75.6
14	2	1.6	77.2
15	2	1.6	78.7
16	1	0.8	79.5
17	1	0.8	80.3
18	3	2.4	82.7
19	3	2.4	85.0
20	1	0.8	85.8
21	4	3.1	89.0
22	3	2.4	91.3
23	1	0.8	92.1
25	1	0.8	92.9
27	1	0.8	93.7
28	1	0.8	94.5
29	1	0.8	95.3
30	2	1.6	96.9
31	3	2.4	99.2
32	1	0.8	100.0
TOTAL	127	100.0	

N = 127

Table C.12
 Number of Hours Working While
 Attending College by Sample Tested

Hours Working	Absolute Frequency	Adjusted Frequency (Percentile)	Cumulative Frequency (Percentile)
None	116	93.5	93.5
1 - 6	3	2.4	96.0
7 - 12	2	1.6	97.6
13 - 18	1	0.8	98.4
19 - 24	1	0.8	99.2
25 - 30	1	0.8	100.0
	3	MISSING	100.0
TOTAL	127	100.0	

N = 124

Table C.13

Number of Years Worked on a Full-Time Basis
(one year continuous employment) by Sample Tested

Years Worked	Absolute Frequency	Adjusted Frequency (Percentile)	Cumulative Frequency (Percentile)
None	48	38.4	38.9
1	25	20.0	58.7
2	14	11.2	69.8
3 - 5	20	16.0	85.7
6 - 10	8	6.4	92.1
10+	10	8.0	100.0
	2	MISSING	100.0
TOTAL	127	100.0	

N = 126

Table C.14
Last Year's Income for Sample Tested

Last Year's Income	Absolute Frequency	Adjusted Frequency (Percentile)	Cumulative Frequency (Percentile)
0 - 2,999	69	58.0	58.0
3,000 - 4,999	23	19.3	77.3
5,000 - 7,999	13	10.9	88.2
8,000 - 9,999	5	4.2	92.4
10,000 - 14,999	8	6.7	99.2
15,000 +	1	0.8	100.0
	8	MISSING	100.0
TOTAL	127	100.0	

N = 119

Table C.15
 Number of Jobs Held in Last Year
 by Sample Tested

Number of Jobs Held	Absolute Frequency	Adjusted Frequency (Percentile)	Cumulative Frequency (Percentile)
None	33	26.2	26.2
1	47	37.3	63.5
2	25	19.8	83.3
3	14	11.1	94.4
4 - 6	6	4.8	99.2
7+	1	0.8	100.0
	1	MISSING	100.0
TOTAL	127	100.0	

N = 126

Table C.16
Rating of Physical Health by Sample Tested

Health Rating	Absolute Frequency	Adjusted Frequency (Percentile)
Unhealthy	0	0
Unhealthy	0	0
Unhealthy	3	2.4
Average	13	10.2
Average	12	9.4
Average	22	17.3
Good	22	17.3
Good	27	21.3
Good	28	22.0
TOTAL	127	100.0

N = 127

Table C.17
Rating of Emotional Well-Being
by Sample Tested

Well-Being Rating	Absolute Frequency	Adjusted Frequency (Percentile)
Unhappy	0	0
Unhappy	0	0
Unhappy	6	4.7
Average	11	8.7
Average	11	8.7
Average	30	23.6
Happy	29	22.8
Happy	20	15.7
Happy	20	15.7
TOTAL	127	100.0

N = 127

Table C.18
Rating of Satisfaction with
Interpersonal Relations by Sample Tested

Human Relations	Absolute Frequency	Adjusted Frequency (Percentile)
Dissatisfied	0	0
Dissatisfied	0	0
Dissatisfied	1	0.8
Average	8	6.3
Average	7	5.5
Average	22	17.3
Satisfied	21	16.5
Satisfied	31	24.4
Satisfied	37	29.1
TOTAL	127	100.0

N = 127

Table C.19

Percentage of Time Students Remained in Original
Program Selection Before Discontinuation

Percentage of Time	Absolute Frequency	Adjusted Frequency (Percentile)	Cumulative Frequency (Percentile)
0	2	1.6	1.6
5	1	0.8	2.4
10	6	4.7	7.1
15	1	0.8	7.9
20	2	1.6	9.4
25	2	1.6	11.0
30	2	1.6	12.6
35	2	1.6	14.2
40	1	0.8	15.0
45	2	1.6	16.5
50	2	1.6	18.1
55	3	2.4	20.5
60	1	0.8	21.3
65	1	0.8	22.0
70	1	0.8	22.8
75	4	3.1	26.0
80	4	3.1	29.1
85	1	0.8	29.9
90	1	0.8	30.7
95	2	1.6	32.3
100	86	67.7	100.0
TOTAL	127	100.0	

N = 127

APPENDIX D

"CAREER MATURITY INVENTORY" CONTINUOUS SCORES

Table D.1

Adjustment of "Career Maturity Inventory" Raw Scores
to Percentiles Using Pennsylvania Norms from
"Career Maturity Inventory" Administration
Manual for Population Tested

Percentile	Absolute Frequency	Relative Frequency (Percentile)	Adjusted Frequency (Percentile)	Cumulative Frequency (Percentile)
2	6	4.7	4.9	4.9
3	5	3.9	4.1	8.9
4	4	3.1	3.3	12.2
7	3	2.4	2.4	14.6
10	5	3.9	4.1	18.7
14	7	5.5	5.7	24.4
17	6	4.7	4.9	29.3
24	10	7.9	8.1	37.4
35	11	8.7	8.9	46.3
43	11	8.7	8.9	55.3
52	12	9.4	9.8	65.0
62	5	3.9	4.1	69.1
72	4	3.1	3.3	72.4
82	9	7.1	7.3	79.7
87	12	9.4	9.8	89.4
94	6	4.7	4.9	94.3
97	4	3.1	3.3	97.6
98	1	0.8	0.8	98.4
99	2	1.6	1.6	100.0
0	4	3.1	MISSING	100.0

TOTAL	127	100.0	100.0
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Student Error	2.901	Variance	1034.799	N = 123
Standard Deviation	32.168	Range	97.00	
Mean	46.049	Minimum	2.00	
Median	42.909	Maximum	99.0	
Mode	52.000	Missing Cases	4	

APPENDIX E

RELIABILITY DATA

Table E.1

"Psychosocial Development Inventory" Subscale
Reliability Data Analysis (Cronbach's
Reliability Test for Internal
Consistency)

Item	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Corrected Item-Total Correlation	Alpha If Item Deleted
BT1	19.46	15.50	0.47	0.50
BT2	18.03	20.49	0.23	0.61
BT3	19.62	14.79	0.48	0.49
BT4	18.63	18.41	0.33	0.57
BT5	19.88	16.98	0.32	0.59
Statistics for Basic Trust Scale:				
	Mean	Variance	Std. Dev.	Alpha
	23.91	24.55	4.95	0.61
AUT1	19.50	13.39	0.04	0.36
AUT2	18.39	11.03	0.42	0.01
AUT3	18.17	11.69	0.32	0.09
AUT4	19.48	15.22	-0.10	0.49
AUT5	18.89	13.08	0.18	0.23
Statistics for Autonomy Scale:				
	Mean	Variance	Std. Dev.	Alpha
	23.61	17.13	4.14	0.30
INIT1	21.26	13.50	0.30	0.52
INIT2	21.31	13.63	0.41	0.46
INIT3	21.34	14.43	0.36	0.50
INIT4	21.65	12.72	0.37	0.48
INIT5	21.34	14.86	0.20	0.58
Statistics for Initiative Scale:				
	Mean	Variance	Std. Dev.	Alpha
	26.72	19.49	4.41	0.56

Table E.1 - "Psychosocial Development Inventory" Subscale
Page 2 Reliability Data Analysis (Cont'd.)

Item	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Corrected Item-Total Correlation	Alpha If Item Deleted
IND1	20.39	13.52	0.49	0.72
IND2	20.46	13.81	0.56	0.69
IND3	20.57	14.91	0.41	0.74
IND4	20.78	13.86	0.62	0.67
IND5	20.45	14.84	0.52	0.70
Statistics for Industry Scale:				
	Mean	Variance	Std. Dev.	Alpha
	25.66	20.86	4.57	0.75
IDEN1	21.39	16.42	0.53	0.68
IDEN2	20.46	19.41	0.45	0.71
IDEN3	20.54	19.03	0.46	0.70
IDEN4	20.24	17.91	0.53	0.68
IDEN5	20.23	19.38	0.53	0.68
Statistics for Identity Scale:				
	Mean	Variance	Std. Dev.	Alpha
	25.72	27.01	5.20	0.74
INTIM1	22.06	10.54	0.42	0.48
INTIM2	21.54	13.63	0.37	0.52
INTIM3	21.32	15.27	0.21	0.59
INTIM4	22.36	14.09	0.25	0.58
INTIM5	21.63	10.95	0.47	0.45
Statistics for Intimacy Scale:				
	Mean	Variance	Std. Dev.	Alpha
	27.23	18.26	4.28	0.59

Table E.1 - "Psychosocial Development Inventory" Subscale
 Page 3 Reliability Data Analysis (Cont'd.)

Item	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Corrected Item-Total Correlation	Alpha If Item Deleted
BM1	11.98	26.21	0.41	0.64
BM2	13.04	27.67	0.38	0.65
BM3	12.37	25.14	0.50	0.60
BM4	12.05	23.44	0.42	0.64
BM5	11.67	25.05	0.48	0.61

Statistics for Basic Mistrust Scale:

	Mean	Variance	Std. Dev.	Alpha
	15.28	36.90	6.07	0.68

SD1	14.24	17.72	0.01	0.47
SD2	14.29	18.26	0.01	0.47
SD3	14.45	12.58	0.39	0.19
SD4	16.28	12.93	0.28	0.28
SD5	15.89	12.38	0.33	0.23

Statistics for Shame and Doubt Scale:

	Mean	Variance	Std. Dev.	Alpha
	18.79	20.09	4.48	0.40

Guilt1	14.41	17.01	0.32	0.31
Guilt2	14.06	15.26	0.43	0.20
Guilt3	13.30	17.21	0.33	0.30
Guilt4	13.72	20.03	0.19	0.41
Guilt5	13.18	24.99	-0.11	0.58

Statistics for Guilt Scale:

	Mean	Variance	Std. Dev.	Alpha
	17.17	25.89	5.09	0.44

Table E.1 - "Psychosocial Development Inventory" Subscale
 Page 4 Reliability Data Analysis (Cont'd.)

Item	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Corrected Item-Total Correlation	Alpha If Item Deleted
INFER1	13.02	22.25	0.41	0.57
INFER2	12.74	21.62	0.42	0.56
INFER3	13.28	21.96	0.53	0.51
INFER4	13.98	23.92	0.36	0.59
INFER5	13.15	24.38	0.24	0.66

Statistics for Inferiority Scale:

	Mean	Variance	Std. Dev.	Alpha
	16.54	32.66	5.72	0.63

IDDIF1	15.06	22.21	0.27	0.57
IDDIF2	13.29	22.27	0.23	0.60
IDDIF3	12.85	19.51	0.40	0.51
IDDIF4	14.24	18.58	0.43	0.49
IDDIF5	13.81	18.84	0.42	0.49

Statistics for Identity Diffusion Scale:

	Mean	Variance	Std. Dev.	Alpha
	17.31	28.74	5.36	0.59

ISO1	12.72	16.70	0.37	0.32
ISO2	11.39	20.51	0.10	0.51
ISO3	11.87	17.43	0.23	0.42
ISO4	13.13	18.57	0.28	0.38
ISO5	12.50	18.35	0.27	0.39

Statistics for Isolation Scale:

	Mean	Variance	Std. Dev.	Alpha
	15.40	25.23	5.02	0.46

Table E.2

Reliability Analysis (Cronbach's Alpha Test for
Internal Consistency) for "Career Maturity
Inventory-Attitude Scale"

Item	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Corrected Item-Total Correlation	Alpha If Item Deleted
VAR01	18.40	33.49	0.16	0.78
VAR02	17.61	34.21	-0.06	0.79
VAR03	18.45	34.04	0.00	0.78
VAR04	18.34	32.77	0.30	0.78
VAR05	17.87	32.94	0.16	0.78
VAR06	18.42	33.04	0.36	0.78
VAR07	17.93	32.06	0.31	0.78
VAR08	18.00	31.28	0.45	0.77
VAR09	17.70	32.78	0.24	0.78
VAR10	18.16	32.30	0.29	0.78
VAR11	17.93	32.81	0.18	0.78
VAR12	18.40	33.29	0.23	0.78
VAR13	17.92	31.97	0.33	0.77
VAR14	18.40	33.73	0.09	0.78
VAR15	18.28	31.85	0.46	0.77
VAR16	18.19	31.54	0.45	0.77
VAR17	18.37	33.15	0.23	0.78
VAR18	18.22	32.88	0.20	0.78
VAR19	18.21	32.79	0.21	0.78
VAR20	18.21	32.86	0.20	0.78
VAR21	18.32	33.98	-0.01	0.79
VAR22	17.70	32.27	0.35	0.77
VAR23	18.36	32.92	0.27	0.78
VAR24	18.45	33.68	0.17	0.78
VAR25	18.34	32.80	0.29	0.78
VAR26	17.94	32.36	0.26	0.78
VAR27	18.20	31.57	0.45	0.77
VAR28	18.15	31.95	0.36	0.77
VAR29	18.08	31.52	0.23	0.78
VAR30	18.08	32.60	0.22	0.78
VAR31	18.42	33.74	0.09	0.78
VAR32	18.12	32.89	0.17	0.78
VAR33	18.23	31.68	0.45	0.77
VAR34	18.21	33.27	0.12	0.78
VAR35	17.62	33.31	0.16	0.78
VAR36	18.29	32.43	0.33	0.78
VAR37	18.26	32.49	0.30	0.78
VAR38	17.58	34.39	-0.11	0.79

Table E.2 - Reliability Analysis (Cronbach's Alpha
 Page 2 Test for Internal Consistency) for
 "Career Maturity Inventory-Attitude
 Scale" (Cont'd.)

Item	Scale Mean If Item Deleted	Scale Variance If Item Deleted	Corrected Item-Total Correlation	Alpha If Item Deleted
VAR39	17.99	32.21	0.28	0.78
VAR40	18.04	32.23	0.28	0.78
VAR41	18.36	33.04	0.25	0.78
VAR42	17.52	34.41	-0.17	0.79
VAR43	18.34	32.93	0.25	0.78
VAR44	18.33	33.06	0.21	0.78
VAR45	17.76	33.82	0.01	0.79
VAR46	17.57	33.61	0.12	0.78
VAR47	17.58	33.75	0.07	0.78
VAR48	18.18	31.87	0.38	0.77
VAR49	18.13	31.81	0.38	0.77
VAR50	18.42	34.19	-0.06	0.78

Statistics for Scale:

Mean	Variance	Standard Deviation	Alpha	Variables
18.48	34.08	5.84	0.78	50

Table E.3

Reliability Analysis for "Psychosocial Development
Inventory" Stage Scales (Cronbach's Reliability
Test for Internal Consistency)

Item	Mean If Item Deleted	Variance If Item Deleted	Corrected Item-Total Correlation	Alpha If Item Deleted
------	----------------------------	--------------------------------	--	-----------------------------

Trust Scale

BT1	39.18	65.94	0.33	0.67
BT2	37.76	71.07	0.25	0.68
BT3	39.35	67.43	0.24	0.69
BT4	38.35	64.47	0.49	0.65
BT5	39.61	66.75	0.28	0.68
7-BM1	39.93	62.76	0.41	0.66
7-BM2	38.87	68.72	0.23	0.69
7-BM3	39.54	60.73	0.51	0.64
7-BM4	39.86	60.34	0.41	0.66
7-BM5	40.24	62.69	0.41	0.66

Statistics for Trust Stage Scale:

Variables	Mean	Variance	Std. Dev.	Alpha
10	43.63	77.70	8.81	0.69

Autonomy Scale

AUT1	35.71	38.08	-0.10	0.43
AUT2	34.61	31.89	0.32	0.26
AUT3	34.38	31.70	0.31	0.26
AUT4	35.69	38.98	-0.14	0.45
AUT5	35.10	31.57	0.32	0.25
7-SD1	37.37	39.90	-0.16	0.44
7-SD2	37.31	38.41	-0.07	0.40
7-SD3	37.16	29.51	0.36	0.22
7-SD4	35.32	32.71	0.14	0.33
7-SD5	35.72	26.33	0.49	0.13

Statistics for Autonomy Stage Scale:

Variables	Mean	Variance	Std. Dev.	Alpha
10	39.82	39.05	6.25	0.35

Table E.3 - Reliability Analysis for "Psychosocial
Page 2 Development Inventory" Stage Scales
(Cronbach's Reliability Test for
Internal Consistency)

Item	Mean If Item Deleted	Variance If Item Deleted	Corrected Item-Total Correlation	Alpha If Item Deleted
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Initiative Scale

INIT1	39.09	54.59	0.22	0.61
INIT2	39.15	52.70	0.40	0.58
INIT3	39.17	53.08	0.40	0.58
INIT4	39.48	53.24	0.27	0.60
INIT5	39.17	52.14	0.36	0.58
7-Guilt1	40.31	48.39	0.37	0.57
7-Guilt2	40.67	47.19	0.41	0.56
7-Guilt3	41.43	49.75	0.34	0.58
7-Guilt4	41.01	52.01	0.29	0.59
7-Guilt5	41.54	61.77	-0.09	0.67

Statistics for Initiative Stage Scale:

Variables	Mean	Variance	Std. Dev.	Alpha
10	44.56	62.17	7.88	0.62

Industry Scale

IND1	38.84	62.98	0.46	0.72
IND2	38.92	63.63	0.51	0.72
IND3	39.02	66.64	0.34	0.74
IND4	39.24	63.93	0.54	0.72
IND5	38.91	66.13	0.44	0.73
7-INFER1	40.64	59.14	0.47	0.72
7-INFER2	40.92	60.87	0.38	0.74
7-INFER3	40.39	60.38	0.51	0.72
7-INFER4	39.68	62.68	0.39	0.74
7-INFER5	40.51	64.43	0.24	0.76

Statistics for Industry Stage Scale:

Variables	Mean	Variance	Std. Dev.	Alpha
10	44.12	75.79	8.71	0.75

Table E.3 - Reliability Analysis for "Psychosocial
Page 3 Development Inventory" Stage Scales
(Cronbach's Reliability Test for
Internal Consistency)

Item	Mean If Item Deleted	Variance If Item Deleted	Corrected Item-Total Correlation	Alpha If Item Deleted
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Identity Scale

IDEN1	39.11	60.37	0.55	0.69
IDEN2	38.18	66.07	0.36	0.72
IDEN3	38.26	66.07	0.43	0.71
IDEN4	37.95	66.22	0.40	0.72
IDEN5	37.94	65.70	0.53	0.70
7-IDDIF1	38.69	67.23	0.33	0.73
7-IDDIF2	40.45	71.36	0.15	0.76
7-IDDIF3	40.91	66.24	0.32	0.73
7-IDDIF4	39.48	60.44	0.50	0.70
7-IDDIF5	39.62	61.82	0.46	0.71

Statistics for Identity Stage Scale:

Variables	Mean	Variance	Std. Dev.	Alpha
10	43.43	78.37	8.85	0.74

Intimacy Scale

INTIM1	41.66	43.77	0.34	0.54
INTIM2	41.13	47.02	0.38	0.55
INTIM3	40.92	50.55	0.19	0.58
INTIM4	41.96	48.67	0.23	0.57
INTIM5	41.23	45.15	0.34	0.55
7-IS01	42.51	44.43	0.30	0.56
7-IS02	43.84	51.71	-0.01	0.64
7-IS03	43.35	42.48	0.31	0.55
7-IS04	42.10	43.62	0.39	0.53
7-IS05	42.72	45.15	0.29	0.56

Statistics for Intimacy Stage Scale:

Variables	Mean	Variance	Std. Dev.	Alpha
10	46.83	54.62	7.39	0.59

APPENDIX F

PEARSON PRODUCT-MOMENT CORRELATION COEFFICIENTS FOR AGE
BY "PSYCHOSOCIAL DEVELOPMENT INVENTORY" SUBSCALES
FOR ALL STUDENTS TESTED

Table F.1
Pearson Product-Moment Correlation Coefficients for Age
by "Psychosocial Development Inventory" Subscales
for All Students Tested

	<u>Basic Trust</u>	<u>Autonomy</u>	<u>Initiative</u>	<u>Industry</u>	<u>Identity</u>	<u>Intimacy</u>
Age	0.0538 (N=177)	-0.0956 (N=177)	-0.1703 (N=177)	0.2138 (N=177)	0.1408 (N=177)	0.1011 (N=177)
	p = 0.238	p = 0.103	p = 0.012*	p = 0.002**	p = 0.031*	p = 0.090
	<u>Basic Mistrust</u>	<u>Shame and Doubt</u>	<u>Guilt</u>	<u>Inferiority</u>	<u>Identity Diffusion</u>	<u>Isolation</u>
Age	-0.1583 (N=177)	-0.1815 (N=177)	0.0802 (N=177)	-0.2071 (N=177)	-0.0518 (N=177)	-0.0852 (N=177)
	p = 0.018*	p = 0.008**	p = 0.144	p = 0.003**	p = 0.247	p = 0.130

*Significance at the .05 level.

**Significance at the .01 level.

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