

FAMILY CORRELATES OF CAREER MATURITY ATTITUDES
IN RURAL HIGH SCHOOL STUDENTS WITH LEARNING DISABILITIES

by

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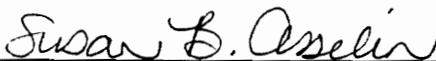
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(ABSTRACT)

This study focused on influential factors affecting the career maturity attitudes of rural high school students with learning disabilities. A variety of variables were studied in each of the following areas: personal demographics, learning disability characteristics, ability/achievement levels, vocational preparation, and family characteristics. Variables from each of the clusters were entered into a variables selection program designed to depict the best combination of variables for use in a multiple regression equation. Through this process the twenty seven original variables were refined into a final combined pool of the eight most powerful variables which impacted upon the student's career maturity attitudes. The eight top contributors were entered into a multiple regression equation to determine their relative contributions to career maturity attitudes. Family appeared to play an important role in the career maturity attitudes of this sample as variables from the family cluster accounted for four of the eight variables selected for the final equation. Two of the those family variables were the family systems constructs of adaptability and cohesion, as measured by the Family Adaptability and Cohesion Evaluation Scale (FACES II).

To gain further insight regarding the impact of family dynamics on the functioning of students with learning disabilities, six stepwise multiple regression equations were also run, one for each scale of the Career Maturity Inventory-Attitude Scale. The results suggested a small but negative relationship exists between perceived family adaptability and career maturity attitudes.

Students who perceived their families as less adaptable, or less flexible, tended to demonstrate higher career maturity attitudes. Cohesion, however, demonstrated a positive and stronger relationship, showing closer bonds among family members to be an important element supporting maturity in the student's career attitudes.

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Table of Contents

	<u>Page</u>
Acknowledgments.....	iv
Table of Contents.....	v
List of Tables.....	xi
List of Figures.....	xii
Chapter	
1 INTRODUCTION.....	1
Rationale.....	3
Statement of the Problem.....	8
Purpose of the Study.....	8
Assumptions.....	9
Limitations.....	9
Delimitations.....	11
Definition of Terms.....	13
Summary.....	15
2 REVIEW OF LITERATURE.....	17
Career Development: A Family Perspective.....	17
Theory.....	17
A Developmental Perspective to Career Development.....	17
Self-concept: A Foundation for Career Development.....	18
Recognition of the Familial Role in Career Development.....	19
Research on Familial Influences in Career Development.....	20
Modes of Family Influence on Career Development.....	20

Family role in achievement values.....	22
Family role in personality development.....	23
Family Systems Theory.....	24
Important Concepts in Family Systems Theory.....	26
The Circumplex Model of Marriage and Family Systems.....	27
Key concepts within the Circumplex Model.....	30
Assessment of Circumplex concepts via the FACES..	31
The Circumplex Model of change.....	35
Systemic Perspective on Career Development.....	36
Problems in Career Development.....	38
Problem I: Career Indecision.....	38
Problem II: Unrealistic Vocational Goals and Aspirations..	39
Career Maturity.....	40
Assessment of Career Maturity:	
The Career Maturity Inventory.....	41
Significance of the Career Maturity Construct.....	42
Learning Disabilities: Application of	
Family Systems and Career Development Constructs.....	44
Family Influences on Expression of a Learning Disability.....	44
Familial Communication Deviances as a Causal Influence..	44
Family Factors as Moderating Variables.....	45
The Learning Disability's Impact on the Family System.....	47
Early Interaction Patterns Stress the System.....	47
Guilt and Grief Stress the System.....	47

	Other Subsystems are Stressed.....	49
	Stress from the Family-Disability Interaction	
	is Manifested in School.....	49
	Behavioral and Emotional Concerns Emerge-	
	Further Stressing all Systems.....	50
	Family, Disability and School Stressors Interact:	
	A Pattern of Dysfunction Emerges.....	51
	Career Development of Students with Learning Disabilities.....	53
	Problems in Career Development.....	53
	Career Maturity of Students with Learning Disabilities.....	54
	Transition Concerns.....	55
	Student perspective on transition.....	55
	Agency involvement in transition.....	56
	Factors influencing transition efforts.....	57
	Research on Vocational Outcomes.....	57
	Findings in vocational outcome research.....	58
	Predictors of vocational outcome.....	59
	Conclusions regarding vocational outcome research...60	
	Summary.....	62
3	METHODOLOGY.....	63
	Design.....	63
	Study Sample.....	63
	Setting of the Study.....	65
	Instrumentation.....	66

	Data Collection.....	67
	Data Analysis.....	68
	Summary.....	69
4	RESEARCH RESULTS.....	70
	Description of Sample Characteristics.....	70
	Demographics.....	70
	Psychoeducational Characteristics.....	72
	Learning Disability Characteristics.....	74
	Career Preparation of Sample.....	76
	Family Characteristics of Sample.....	76
	Response to Research Questions.....	80
	Question One.....	80
	Question Two.....	81
	Question Three.....	83
5	DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS.....	89
	Conclusions.....	90
	Discussion.....	91
	Impact of Family Dynamics on Career Maturity Attitudes.....	92
	Cohesion.....	92
	Adaptability.....	93
	Cohesion/Adaptability Interaction.....	94
	Variable Contributions to	
	the Variance in Career Maturity Attitudes.....	95
	Personal Attributes and Career Maturity.....	95

Age.....	95
Race.....	95
Vocational Preparation and Career Maturity.....	96
Assessment.....	96
Experience.....	97
Curriculums.....	98
Ability/Achievement Data and Career Maturity.....	99
IQ scores.....	99
Achievement scores.....	99
Learning Disability Characteristics and Career Maturity.....	99
Family Variables and Career Maturity.....	101
Implications and Recommendations.....	102
Implications and Recommendations for Practitioners.....	102
Research Recommendations.....	105
References.....	108
Appendix A - FACES Materials and Permission to Utilize.....	124
Appendix B - County A's Learning Disabilities Guidelines.....	126
Appendix C - County B's Learning Disabilities Guidelines.....	127
Appendix D - Human Subjects Request/Permission.....	129
Appendix E - Request for School Participation.....	131
Appendix F - Request for Student Participation.....	133
Appendix G - Directions Given Students.....	134
Appendix H - Individual Student Data.....	138
Appendix I - Mean Grade Level Scores of Subjects Based on CMI Norms.....	140

Vita.....	141
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List of Tables

<u>Table</u>	<u>Page</u>
1 FACES II - Internal Consistency Reliability.....	32
2 FACES II and III - Concurrent Validity.....	32
3 Demographic Descriptors of Subjects.....	65
4 Ability/Achievement Descriptors of Sample Utilized.....	73
5 Learning Disability Characteristics of Sample.....	75
6 Family Descriptors of the Sample.....	78
7 Socio-economic Status of Families.....	79
8 Stepwise Regression Results for Adaptability Equations.....	81
9 Stepwise Regression Results for Cohesion Equations.....	82
10 Multiple Regression Report.....	87

List of Figures

Figure	<u>Page</u>
1 Diagram of the Circumplex Model.....	29
2 Results of the Variable Selection Procedure.....	86

Chapter 1

INTRODUCTION

In recent years the world of work has become a complex and hostile environment for those who enter without specific skills. There has been a drastic reduction in the number of manufacturing jobs while new jobs and services have been occurring in the retail sector at half the salary (Fourqurean, Meisgeier, Swank & Williams, 1991). In light of such trends there has emerged a heightened interest in career education and development. Although this became a priority of the government in the early 1970's, it has been slow to impact upon populations with disabilities (Brolin, 1978). By the mid 1980's the Office of Special Education and Rehabilitative Services declared school-to-work transition a priority for those working with the disabled (Will, 1984). Despite such an impetus, progress remained slow. As recently as 1991 Siegel and Gaylord-Ross warned, "The employment of persons with mild disabilities is one of the most pressing social problems in our society. The high rates of unemployment and underemployment for this group presage unacceptable social costs" (p. 45).

The foundation for improvement of transition services begins with early studies focusing on individuals with mental retardation or a generic mix of individuals with disabilities. As categories have been isolated for study, a clearer picture of needs has begun to emerge. For example within the field of learning disabilities a growing body of research is showing academic self-concept and career development (in the form of career maturity) to be weaknesses which set many of these individuals apart from their peers (Biller, 1985; Bingham, 1978; Ceci, 1987; Cruickshank, Morse & Johns, 1980; R. J. Green, 1989; Huntington & Bender, 1993; Montgomery, 1994; Rosenthal, 1989; Winnie, Woodlands, Wong, 1982).

Despite increasing research efforts, the long range impact of deficits in areas such as academic self-concept and career development remains unclear. Okolo and Sitlington (1988) note limited information is available on the vocational adjustment of adults with learning disabilities. Within the limited research available, however, there are some commonalities in the findings. While adults with learning disabilities appear to find employment at the same rate as their peers, it is often part-time and tends to be at minimum wage or entry level. The majority of these individuals receive minimal vocational counseling in high school and report finding jobs through family and friends. Their career problems may not end with employment though. Fafard and Haubrich (1981) indicate that those who find employment often have difficulty keeping it.

Thus, there exists a need for research on the school-to-work transition of individuals with learning disabilities to understand their career development and the factors which mediate it. One such factor is family of origin. Either directly or indirectly most theories of career development acknowledge the family as an important element in the career choices of individuals (Bratcher, 1982). However, research in this area has been limited. Variables related to family influence can be classified into a dichotomy of objective and subjective (Super, 1957). Through the years, much of the career research addressing family has focused on objective family variables such as parents' occupations, family income, or educational levels of family members; but are these the variables which have the major impact on the individual's ultimate career development? Super portrays the core issue in career development to be the striving of the individual to implement his self-concept. Hence, the family influences which serve as the foundation for self-concept also serve as a key to career development. These appear to be the more subjective family variables as "...the child's self-concept depends largely on the way it is treated by significant others" (Scott, Scott & McCabe, 1991, p. 2). Although little has been done to explore these "developmental roots" of one's career (Miller, 1978), the preliminary research in this area looks promising. Schulenberg, Vondracek,

and Crouter (1984) review the literature in this area and conclude "...specific features of the family (i.e. location in the broader social context, structural features, and process oriented features) do influence specific vocational outcomes in predictable ways" (p. 138).

Rationale

In light of the complex and sometimes hostile world of work which awaits individuals with learning disabilities, it is important to find ways to facilitate their transition. If family features do indeed influence vocational outcomes in predictable ways, researchers need to garner relevant data and utilize the family resources to facilitate rather than hinder the process of career development. What makes this challenging is the pervasive nature of family influence.

Career choices throughout life appear to be influenced by factors originating many years before, in infancy and childhood (Vitulli & Jones, 1994; Young, 1994). These factors may be as simple as the availability of role models to acquaint the individual with vocational possibilities or as complex as the psychodynamic forces which converge to determine one's self-concept. Using the premise that the theoretical root of career development is self-concept, Bordin and Kopplin (1973) provide a fundamental perspective on the role of families in the vocational difficulties individuals might encounter. They suggest that "clients with differentiated and fully-operating identities (self-concepts) will integrate self-concept and vocational roles better than clients with diffuse or conflict-laden identities" (pp. 154-155). This seemed to be the case in a study of male college students by Miller (1978). The results indicated that parental behaviors which impede general development and well-being are associated with attitudes related to career immaturity. This negative pattern includes a non-accepting, inconsistent, distant relationship with parents during formative years. In contrast, higher levels of career maturity are associated with males who receive positive reinforcement from both parents; who have positive (available, close, and confiding) relationships with their fathers; and whose mothers are found to be supportive of their

son's achievement. Thus, career development problems appear to originate long before the individual crosses the threshold of their first work place.

Research on the development of students with learning disabilities shows a tendency toward these "conflict-laden identities" referenced by Bordin and Kopplin. Often studies depict youth with learning disabilities as experiencing more emotional turmoil and immature career attitudes than their peers. For example, Michaels and Lewandowski (1990) studied 59 boys with learning disabilities as compared to 65 control subjects without learning disabilities. Based on parent ratings of these 6 to 12 year olds, the group with learning disabilities had significantly more behavior problems and their families exhibited more extreme or disturbed functioning. These findings were similar to those of Owen, Adams, Forrest, Stolz and Fisher (1971) who found the 76 children with learning disabilities in their sample to be more disorganized and emotionally unstable than other matched samples including same-sex siblings. In studies specifically addressing career development of youths with learning disabilities, Bingham (1978, 1980) and Kendall (1981) noted the career maturity attitude of boys with learning disabilities to be significantly lower than their non-learning disabled peers. Such studies lead one to ask: Could these early differences or "conflict-laden identities" which arise in children with learning disabilities contribute to problems in career development? If so, could the family, as the primary context for this development, be utilized to enhance career development? The rationale behind such an idea has apparently been compelling enough to command federal monies. In the Rehabilitation Act of 1973 Congress authorized services for family members of those with disabilities when necessary for the adjustment or rehabilitation of the client. At that time, however, individuals with learning disabilities were not eligible for vocational rehabilitation services. In 1981 the category of "specific learning disability" was included as an area eligible for rehabilitation services (Federal Register, 1981) thus

acknowledging the career development needs of those with learning disabilities and opening the door to family-based interventions.

Such shifts in theory and practice (from an individual to a family perspective) cannot be accomplished instantaneously nor without a research base. While such mandates have been around for well over a decade, textbooks and research contain little information regarding the inter-relationship of family functioning and the development of children with learning disabilities (Feagans, Merriwether & Haldane, 1991; Toro, Weissberg, Guare & Liebenstein, 1990). A need for research in this area has been noted in the literature (Kaslow and Cooper, 1978; Margalit and Almougy, 1991; Parker, Hill & Goodnow, 1989; Thompson, Lampron, Johnson & Eckstein 1990). However, this process is complicated by many factors. One cannot assume that knowledge garnered from the career development of non-disabled individuals will be generalizable to a population with disabilities, nor can one assume that adding a family perspective to career counseling is simply a matter of making counselors aware of the need. Families differ in many ways so there are numerous family variables, both subjective and objective, which should be considered (studied or controlled for) to guide and facilitate implementation of these concepts.

Among the less obvious variables in need of the researcher's attention is the geographic location of the subjects, which appears to make a considerable difference in the family environment and the career decision making process. Hesser (1981) notes a great deal of variability between rural, suburban, and urban groups in areas such as minority composition, parent educational level, number of siblings, parenting style, degree of paternal and sibling influence over career choice, career aspirations, willingness to relocate for employment, career maturity, and family adaptability. At the same time Hesser was reporting these findings, Martin (1981) noted similar urban and rural differences in his study of potential dropouts. Kuczynski (1981) attributes such geographic differences to the pace of social change in the region. The more gradual nature of

social change in rural settings yields a different set of stressors. Hence, Kuczynski finds potential areas of conflict such as sex-role function and interaction within kinship networks to be very different issues for those in rural communities. For researchers such differences can present difficulty. While sampling diverse populations may afford heterogeneity, it can also limit the applicability of results. Grasso (1975) cautions that large and diverse samples may mask the effectiveness of "local variables." In a similar vein, Pucel (1980) concludes that an instrument could not predict the same criterion of vocational success equally well across different populations. Such concerns lead Prediger, Waple, and Nusbaum (1968) to conclude that one cannot be sure how a variable will work at a local level until it is tested. In light of such applicability issues, this research will focus on a rural subset of the population.

Application of the knowledge garnered from family/career development research should have a significant impact on the career counseling process which often has the individual as its sole focus. Young and Friesen (1992) believe that including the parents in career counseling can help make intentions clear so "...counselors can begin to unpack the positive and negative baggage that individuals carry into their career lives" (p.205). Whittaker (1976) ventures so far as to say success in treatment is dependent upon the ability of helping professionals to involve the parent figures as full and equal partners in the helping process. In the past there was a tendency to grossly under-utilize the parents, the "most valuable natural resource in child treatment" (p. 94). This complaint has been reiterated several times in the literature (Amerikaner & Omizo, 1984; Wilchesky & Reynolds, 1986). It should be understood, however, utilization of a family or systems approach to career development is not meant to imply family pathology. Bratcher (1982) encourages counselors to abandon the perception of clients as victims of family influence. Rather clients "collude" in the process (generally not conscious of their participation). The goal is to help clients become aware of this and accept responsibility for their participation in it. When this goal

is accomplished one can productively evaluate the ways family values and pressures both internal and external may be impacting on career decisions.

In summary, the need for a research base in the family area of career development is widespread and well-documented (Gottfredson, 1982; Hesser, 1981; Punch & Sheridan, 1978; Super, 1980; Young, 1983). Schulenberg et al. (1984) perceive three major flaws in earlier career development research. These include a failure to: (a) address vocational development, (b) consider the family as a functioning whole, and (c) explore familial and vocational changes over time.

Others in the field emphasize the need for research regarding the career development of individuals with disabilities. Brown (1982) sees this as crucial since none of the career development theories or instruments have been constructed bearing in mind individuals with disabilities. Preliminary studies on students with learning disabilities support this need indicating there are career-related deficits (Bingham, 1978) and dangers of premature foreclosure on career options (Biller, 1985). Kendall (1981) goes so far as to say that the move toward career education for individuals with learning disabilities will fail unless the interface between career education and affective education is researched and dealt with constructively.

Despite such calls from the field and what Sloman and Webster (1978) refer to as "the obvious and inevitable fact that parents of the learning disabled child are intimately involved with the child's disability" (p. 73), research in these areas is lacking. Practitioners in the field not only need research in each of these areas (career development of individuals with learning disabilities and family effects on career development) they also need research dealing with the integration of the two fields. This study proposes to assist in addressing such research needs.

Statement of the Problem

Through the years those in the field of career development have become increasingly aware of the vital role the family plays in one's ultimate career decisions. Despite this awareness, earlier research in this area (e.g., Levine, 1976; O'Connor & Spreen, 1988) was confined to objective family variables such as income and level of parental education. However, these variables do not seem to capture the essence of the family, including those features which serve to mold and nurture the developing self-concept (the theoretical foundation of one's career development). While such research is important for the population as a whole, it may bear even greater relevance for individuals with learning disabilities in light of their potential problems in the world of work.

This study proposed a more in-depth look at the family structure as it relates to the career maturity attitudes of a sample of rural high school students with learning disabilities. Of specific interest was the family systems variables of adaptability and cohesion and their relationship to the Career Maturity Inventory-Attitude Scale (CMI-AS) variables of Decisiveness in Career Decision-Making, Involvement in Career Decision-Making, Independence in Career Decision-Making, Orientation to Career Decision-Making, and Compromise in Career Decision-Making.

Purpose of the Study

This study was designed to address the following questions pertaining to the career maturity of rural adolescent individuals with learning disabilities.

- 1) What percentage of the variance in each of the five areas of career maturity attitude and the career maturity total score (as measured by the CMI-AS) is accounted for by the perceived level of **adaptability** in the student's family?
- 2) What percentage of the variance in each of the five areas of career maturity attitude and the career maturity total score (as measured by the CMI-AS) is accounted for by the perceived level of **cohesion** in the student's family?

- 3) What percentage of the variation in career maturity attitude (as measured by the CMI-AS) is accounted for by the selected demographic variables?

The results from Questions 1 and 2 should help to explore issues such as whether family adaptability (the level of flexibility or rigidity in a family) and/or family cohesion (close or distant emotional bonds) affects the students' readiness and comfort in making career choices; feeling of power and control over their career path; acceptance of responsibility for making career choices; knowledge of how to explore or prepare for career possibilities; ability to realistically reconcile differences between their skills and skills demanded in the world of work. The third question explored whether demographic data adds new or different information beyond the systemic data to be considered when exploring a student's readiness to cope with the career development tasks appropriate to his or her age group.

Assumptions

The following assumptions were made for this study:

- 1) The family plays a crucial role in the development of the individual.
- 2) Career development is an aspect of personal development and as such is subject to familial influence.
- 3) While theoretically the moderate ranges of adaptability and cohesion variables are more adaptive or healthy, current instruments reportedly do not delineate the upper extremes. Hence, on the FACES, dysfunctional families are more likely to score in the lower extreme range. Higher scores will be interpreted as a more balanced or healthy type.

Limitations

The limitations of this study fall into three main categories. These include population-related, instrument-related, and procedurally-related factors. Studies of learning disabilities are

difficult to conduct due to the small number of eligible participants at local levels, the self selection bias of consenting participants (as described by Montgomery, 1994), and the heterogeneous nature of such groups. The diversity of this group has long been a concern of researchers (Rugel & Mitchell, 1977; Zetlin & Murtaugh, 1990). On one hand a heterogeneous sample may cause pertinent variables relevant to a small sector of the population to be overlooked, yet a homogeneous sample could produce strong data which are not appropriate for generalization to the entire population. The research process is further complicated by discrepancies in identification of individuals with learning disabilities. With different people or committees identifying learning disabilities, individual interpretation of the regulations is another source of error variance (Oliver, Cole & Hollingsworth, 1991; Toro, et al., 1990). This study involved existing populations from two counties utilizing the same placement guidelines, but with inevitable differences in committee interpretations.

This study also carries with it the limitations of the instruments used. The variables of adaptability and cohesion possess the definition and limitations imposed by the FACES II (the instrument designed to measure them). While FACES II is designed to fit a curvilinear hypothesis, further study has brought that assumption into question (Olson, 1991a). The author of the FACES notes its limitations and suggests a linear interpretation. Other instruments are currently being developed to better assess the curvilinear properties of the model. Likewise, the Attitude Scale of the Career Maturity Inventory (CMI-AS) serves to define and limit the dependent variables. There are other dimensions to career maturity, but the categories used in the CMI-AS tend to cover aspects pertinent to this study. Based on the author's review of the literature, the CMI Attitude Scale is also the instrument most used in career maturity studies involving individuals with learning disabilities. Critical factors often cited are its lower reading level and its brevity (proving less rigorous for that portion of the sample who may evidence a shorter attention span). Since both of

these instruments are self-reporting, they are limited to the subject's perception of the world. This may or may not corroborate the views of others in the subject's surroundings (e.g., family members).

The final area of limitations is procedural. To collect data from a public school system one must conform to the rules, regulations, and desires of the participating systems. This affects uniformity in data collection as it dictates the availability of students, the size of groups, the scheduling of data collection, and environment in which the subjects can be seen. Despite such parameters the researcher has attempted to establish as much control as possible to limit situational variations.

Delimitations

The following limitations were imposed on this study by the author:

A two county purposive sample of students with learning disabilities was utilized, thus the information was descriptive of that sample and limits its applicability to other groups. This study was confined to a segment of rural Virginia as the author sought a population which would provide relevant information to his practice of school psychology. To insure a rather homogeneous rural sample the participating counties were selected based on a multi-faceted statistical matching procedure created for and through the Virginia Department of Education (i.e., the Educational Performance Recognition Band System).

Limitations were also imposed when the author chose to modify the administration of the instruments and the response format of the CMI-AS. Since neither instrument was designed specifically for individuals with learning disabilities the modifications were attempts to accommodate their needs. While all items remained unchanged, the presentation varied from standard procedure. Instead of reading and answering items independently, each statement was read to the students and a visual (overhead) was used as a supplement. Since computerized answer

sheets may be confusing for this population, the response format was simplified so students could answer in the booklets, next to each item. While those adaptations were done to facilitate the individual's performance they varied from the standard procedure, and thereby introduced another source of possible error variance that may impact upon interpretation of the findings.

A final limitation was one of design. This study was intended to contrast the individual's perception of the family's function with his career maturity attitudes. These adolescent representations of the family on such instruments include "...complex perceptions, abstractions, and interpretations of family relationships that constitute an individual's subjective reality" (Feldman & Gehring, 1988, p. 1040). As such, it should be acknowledged that the perception of a family's structure has been shown to vary, depending upon which family member was surveyed (Scott et al., 1991). In one study of family structure Morrison and Zetlin (1988) noted that adolescents tended to link their perceptions of family adaptability to how openly communication occurred. More open communication was tied to less rigid systems. Parents, however, tended to view these issues as separate. Scott et al. (1991) suggested that family members may present a distorted perception to justify their own role performances. While there has been some speculation that adolescents may present the family as less cohesive in light of their quest for autonomy, a study of real versus ideal family structure found that adolescents perceived cohesion as a desirable family trait (Feldman & Gehring, 1988).

Validity of family member's perceptions of family structure was one component of a cross cultural study of 2,699 high school students, their parents and their teachers conducted by Scott et al. (1991). They confirmed the difference in perspectives and reported that the children's perceptions appeared to have more construct validity in relation to their independently assessed personality characteristics than did their parent's report. Reliability coefficients ranged from fair to good (.62 to .89) for the children's report on four family characteristics (harmony, parental

nurturance, protectiveness and punitiveness). Parent reports were less reliable with only family harmony coefficients consistently above .60.

Hence, the child's rating may be one of the most crucial ratings to obtain. This contention is supported by: Dowdy, Carter and Smith (1990) who indicate it is the student's perceptions regarding major issues which impact upon their readiness for knowledge and developmental progress; Pardeck and Pardeck (1990) who assert that it is the individual's perception of the situation more than the family structure which influences the adolescent's move toward autonomy; and Parker (1984) who believes it is the child's view of the parenting style, rather than the actual parenting style which influences the child's development.

Definition of Terms

The following definitions are offered to help operationalize the major terms used within this study:

- 1) Career maturity/vocational maturity - the ability of an individual to cope with career development tasks appropriate to his/her peer group as measured by the scales of the Career Maturity Inventory (Crites, 1978)
- 2) Career attitude - the affective reactions of the individual toward career choice (as opposed to the intellectual reactions) as measured by the CMI-AS
- 3) Decisiveness in career decision-making - readiness and comfort in making career choices as measured by this scale on the CMI-AS
- 4) Involvement in career decision-making - personal feelings of power and control over one's career path and realistic self and vocational appraisal as measured by this scale on the CMI-AS
- 5) Independence in career decision-making - acceptance of personal responsibility for career choices as measured by this scale on the CMI-AS

- 6) Orientation to career decision-making - awareness of how to prepare for and explore career possibilities as measured by this scale of the CMI-AS
- 7) Compromise in career decision-making - attaining a realistic perspective and reconciling self knowledge with knowledge from the world of work as measured by the total score on the Compromise Scale of the CMI-AS
- 8) Family adaptability - the ability of a family system to reorganize (become more flexible) in response to situational and developmental stresses as measured by the total score on the Adaptability Scale of the FACES II (Olson, 1982)
- 9) Family cohesion - the emotional bonding between family members as measured by the total score on the Cohesion Scale of the FACES II
- 10) Subjects with Learning Disabilities - those 9th, 10th, 11th, and 12th grade students in the participating school systems who have been identified as individuals with learning disabilities by a multidisciplinary team of professionals and by definition would exhibit average to above-average ability, a significant deficit in a basic learning process (e.g. perception, memory, conceptualization, attention, etc.), and a significant deficit in achievement compared to intellectual potential
- 11) Intelligence Quotient - scores from an individually administered, standardized measure of verbal and non-verbal ability with a mean of 100, preferably as measured by the Verbal and Performance scales of the Wechsler Intelligence Scale for Children - Revised (WISC-R). When unavailable the Verbal and Performance scores from the Wechsler Intelligence Scale for Children - Third Edition (WISC-III) or the Verbal Reasoning and Abstract/Visual Reasoning scores from the Stanford Binet Intelligence Scale - Fourth Edition (Binet IV) may be substituted

- 12) Reading achievement - scores from an individually administered, standardized measure of reading decoding skills, as measured by the reading subtest of the Kaufman Test of Educational Achievement - Brief Form (K-TEA) (the primary measure used in County A) and the Wide Range Achievement Test - Revised (WRAT-R) (the primary instrument used in County B). When unavailable the reading decoding subtest score from the Wechsler Individual Achievement Test (WIAT), Woodcock Johnson, or the Woodcock Reading Mastery may be substituted
- 13) Math achievement - scores from an individually administered, standardized measure of math calculation skills, as measured by the mathematics subtest of the K-TEA (primarily used in County A) and the WRAT-R math (primarily used in County B). When unavailable the math calculation scores from the Woodcock Johnson or the Peabody Individual Achievement Test (PIAT) may be substituted
- 14) Written language achievement - scores from an individually administered, standardized measure of spelling skills, as measured by the spelling subtest of the K-TEA or Test of Written Language (TOWL) (primarily used in County A) or the WRAT-R (primarily used by County B). When unavailable the spelling score from the Woodcock Johnson, PIAT, or WIAT may be substituted

Summary

While it has been widely acknowledged that the family plays a crucial role in career development, research regarding the familial influence has been far from comprehensive. Many studies appear to have focused on objective rather than subjective variables and have excluded

those familial aspects which may make a significant contribution to the formation of the personality and self-concept. Hence, researchers have neglected the variables which serve as a cornerstone of career development. These factors, together with questionable vocational outcomes for adult individuals with learning disabilities, led the author to propose this study in which the impact of family relationships on career maturity attitudes were investigated. Specifically the familial variables of adaptability and cohesion were investigated as they related to the career maturity of high school students with learning disabilities.

This document is organized so that Chapter One provides the overview, rationale, purpose, limitations, and definitions pertinent to this area of study. Chapter Two provides a literature review on this and related areas. Chapter Three addresses the methodology necessary for implementation of the study. Chapter Four contains the statistical results of the study. The final chapter summarizes the study, interprets the results, and provides implications for practice and research.

Chapter 2

REVIEW OF LITERATURE

To conceptualize this chapter, a literature review, the reader might envision a Venn diagram of three overlapping spheres: career development, family systems theory, and learning disabilities. While the spheres are too broad to be covered totally, the focus within this chapter is the areas of overlap. Through the overlap of career development and systems theory the author seeks to answer such questions as: Why is early development important to one's career choices? What is the family's role in career development? What is meant by family systems and what bearing does it have on career development problems? How can one measure the functional state of a family system or the career maturity of an individual? When the third sphere, learning disabilities, is added the author explores the reciprocal impact of the family system and the learning disability from birth to early adulthood, particularly in areas relevant to one's ultimate career development.

Career Development: A Family Perspective

Theory

A Developmental Perspective to Career Development

When Ginzberg, Ginsburg, Axelrad & Herma (1951) proposed their theory of career development, it tended to broaden the scope of practitioners. No longer did the focal point of career psychology rest solely in the late adolescent to young adult years. No longer was it conceptualized strictly as a point-in-time event. Career development was posited as an on-going process beginning in childhood. Originally, the theorists proposed three major periods as part of this process (i.e., fantasy, tentative, and realistic). During each of these periods the individual

deals with specific tasks which help to lay the foundation for the next stage and ultimately one's career choice. Over time, however, it was realized that career development like general development does not end with the advent of adulthood. Ginzberg (1972) expanded this theory portraying career development as a life-long process. The Ginzberg theory bears a special place in history as it marks the beginning of an integration of career and developmental frameworks.

Self-concept: A Foundation for Career Development

Perhaps the most researched of the developmental theories emerged shortly after Ginzberg's theory through the works of Donald Super (1953) in his Developmental Self-Concept Theory. It included five stages: a) growth (0-14 years), b) exploratory (15-25 years), c) establishment (26-45 years), d) maintenance (46-65 years), and e) decline (65 years - death). He later broke the stages into substages to further clarify this developmental process (Super, 1963).

While career stages begun in childhood make the family role evident, Super's theory adds another dimension to that role. The premise behind his theory is that career choices are made in an attempt to implement one's self-concept. Self-concept, in turn, is formed by what others tell the individual about himself especially during the formative childhood years (Corey, 1986). Hence, the family role becomes more obvious and powerful in Super's theory. After reviewing the literature in this area, Srebalus, Marinelli, and Messing (1982) find further support for the role of self-concept in career development. They cite evidence that workers in similar occupations have similar self-concepts, and job satisfaction is related to the congruence between a person's job and his self-image. To date Super's theory has been kept in the forefront of the field by his prolific research and writings in this area. The theory's general high level of acceptance can be seen in the writing of researchers and practitioners whose works reflect the implicit belief that self-concept is an integral element in career development (e.g., Adelman & Vogel, 1990; Hoffman, et al., 1987; Rosenthal, 1989).

Recognition of the Familial Role in Career Development

The first career development theory to explicitly emphasize the family role was proposed by Ann Roe (1956). In fact, she theorized that family interaction patterns are the basis for one's occupational behavior and that occupational choices are made in an attempt to fulfill needs established in childhood. Originally Roe focused on differential parental attitudes (cold or warm) which she believed would ultimately influence the individual's orientation toward or away from people in his vocational choice. For example, a child reared in a less affectionate home would be likely to choose a job with less interpersonal contact.

Three major types of parents are cited in Roe's work (Osipow, 1983). First is the over-attentive parent who can either be overprotective or make excessive demands on the child. Parents with the over-attentive/over-protective style make sure the child's physical needs are met quickly, but the psychological needs of love and esteem are not met so readily. They are fulfilled as a reward for socially desirable behavior. Hence, fulfillment of higher-order needs is connected to dependence on others and conformity. The over-attentive/excessively-demanding parenting style fulfills the need for love in return for conformity and achievement. The second parenting type, the rejecting parent, has two subcategories as well. Some parents primarily ignore the physical well-being of the child while others withhold love and esteem under all conditions. The latter type is believed to be the most damaging. The final type, accepting parents, can be loving or casual types. They appear to do well in meeting the child's needs at most levels.

As Osipow (1983) pointed out, much of the research on Roe's theory was inadequate, but generally not supportive. One of the more positive studies cited was by Kinnane and Pable (1962). They found a significant correlation between family cohesiveness and one's orientation toward working conditions and associations. Osipow concluded that future research may need to take a different approach such as investigating the influence of parental treatment on intervening variables

(e.g., cognitive style). This approach appears to have merit and while Roe's specific model is not being tested, more generic premises related to the model are garnering support. Those in the field still find and cite evidence for the notion that parenting style and/or family dynamics have a strong impact on the self esteem, autonomy and ultimate career development of the individual (Lopez, 1989; Lopez & Andrews, 1987; Pardeck & Pardeck, 1990; Rogan & Hartman, 1990; Schulenberg et al., 1984; Scott et al., 1991; Wenk, Hardesty, Morgan & Blair, 1994; Young, 1994; Zingaro, 1983).

Research on Familial Influences in Career Development

The family role in career development has been highlighted in theories cited previously, but as Schulenberg, et al. (1984) indicate, "For the most part, the influence of family interaction patterns on children's vocational outcomes has been ignored by researchers." (p. 138). The authors criticize a tendency toward "reductionist thinking" in the sparse research which has considered the family's role. Rather than viewing the family as a functioning whole, there has been an attempt to assess a few salient features (e.g., socioeconomic status and ethnicity) while ignoring other important areas like family size and socialization practices. While socioeconomic status may be an important factor, families differ from one another in other ways. Levine (1976) stresses that the family is a social and psychological unit as well as an economic entity. Through the years a variety of researchers have called for a more holistic or systemic approach to research on familial influences (Kaslow & Cooper, 1978; Levine, 1976; Margalit & Almougy, 1991; Parker et al., 1989).

Modes of Family Influence on Career Development

A wide range of perspectives exists on how the family impacts upon the career development of the individual. Levine (1976) suggests the family exerts its influence through shaping of needs and values; serving as role models (both positive and negative) for play, work and

interpersonal relationships; and providing resources (information, contacts, and money) to assist the individual with the implementation of his self-concept. Lucky (1974) perceives the family influence as more rudimentary pointing out that self-concept (the proposed cornerstone of career development) has its beginnings in the perceptions and expectations of one's parents and progenitors. Grotevant (1979) even found a genetically based similarity between parent and child interests in his comparison of biological and adoptive families. In light of such findings Okiishi (1987) recommends the use of a genogram (similar to a genetic family tree) in career counseling to look at the individual's family in terms of life style and occupational models.

Schulenberg et al. (1984) conceptualize the family influence on career development along two interdependent dimensions. The first involves the opportunities the family provides for the individual. The second dimension involves family processes (family relationships and socialization practices). Zingaro (1983) draws on the work of Super and Bowen to show how interaction patterns which form in this family process are adapted to all other relationships including those at work. The "process" orientation moves family influence from a static to a dynamic state. Lopez (1989) asserts that true comprehension of family influences requires an immediate, not just historical, perspective. The emotional interdependencies which form are dynamic and at any given moment they serve to regulate or constrain the behaviors of individuals. This perspective becomes particularly important at transition points in the family life cycle (e.g., as the adolescent strives for autonomy) where disequilibrium in relationships is common (Pardeck & Pardeck, 1990). At this time the parent's discipline and adolescent's rebellion intertwine to define the changing structure of the relationship. It is not uncommon for this to be a conflictual time with adolescents de-idealizing and often criticizing their parents in an attempt to demonstrate they are not so necessary in their lives (M.J.S. 1990). Silverberg and Steinberg (1987) portray a moderate amount of such conflict as a vital and healthy part of the growth process, since a conflict-free situation may inhibit the

striving for autonomy. Apparently, however, the level of conflict can reach a point of diminishing returns, ultimately impeding career development. Such was the case in a study by Lopez (1989) of 299 college students (male and female) from intact families. It seemed family dynamics, trait anxiety and academic adjustment all contributed uniquely and extensively to the variance in the student's vocational identity scores. The most powerful family predictor to emerge in this data was "conflictual independence" (freedom from excessive guilt, resentment and anger) from the opposite sex parent. This form of parent-young adult conflict tended to hinder vocational identity development. Another variable, "emotional independence" from the parents, did not appear to have a significant impact on vocational identity in this study, however, the author speculated that the heightened conflict in these relationships may have been due to emotional dependencies that were publicly denied.

At some points in this process of considering family influence on career development the lines blur and it is difficult to categorize some influences as strict products of genetics, history or dynamic interaction patterns. Two such instances follow as the family impact via achievement values and personality development are considered.

Family role in achievement values. R. J. Green (1989) reviews the literature on family achievement values as they affect career development. He questions what type of model is seen by the child. Do the parents value education or educational institutions either explicitly through words or implicitly through their actions? Do they model their achievement values via intellectual, cultural, or recreational pursuits? As the child gathers such impressions, they may affect his expectations and the way he reacts to opportunities. Given negative achievement messages, he may develop a self-fulfilling prophecy of underachievement and consequent career dissatisfaction. Green shares examples from Stierlin's work (1974) of the many problematic messages the child may receive from his parents. They may include pressures to fulfill unaccomplished parental

goals, a "mission to fail" which keeps the parent from feeling "competitively inadequate", or conflicting messages from the parents. These messages, thoughts, and attributions impact upon ambition, motivation, and general career development.

Family role in personality development. Research portrays a vital role for the family in career-related personality development. This influence appears to begin at birth. A classic infant study by Ainsworth, Blehar, Waters & Wall (1978) found early personality characteristics such as attachment behavior related to a mother's caretaking style. Securely attached infants had mothers who frequently express affection toward them and interacted in flexible ways. Anxious-avoidant and anxious-resistant infants tended to have mothers who were less sensitive to behavioral indicators, offered infrequent attention and had rigid interaction patterns. As they grew securely-attached infants demonstrated more competent and independent behaviors (Matas, Arend & Sroufe, 1978).

Scott et al. (1991) reviewed the literature seeking connections between parenting style and personality development. They noted the following trends: quarrelsome and rejecting homes were linked to delinquency and behavior problems; parental conflict was tied to low self-esteem; parental punitiveness and rejection were associated with aggression; parental rejection corresponded to low self-esteem and anxiety; marital unhappiness and restrictive or permissive child-rearing styles were linked to adolescent rebellion. On the positive side parental attention and warmth related to high self-esteem in offspring. Scott et al. pursued this with their own study (described earlier) which sampled eight international communities. Across cultures they found: a child's self-esteem and low anxiety were associated with family harmony and parental nurturance; poor interpersonal competence corresponded with parental protectiveness; and hostility in the child related to parental punitiveness. Research on the impact of parenting styles was persuasive enough for Pardeck and

Pardeck (1990) to write "No doubt, the degree and kind of control that the parent exerts over the child have important implications for the development of adolescent autonomy" (p. 224).

Miller (1978) described the impact of negative parenting styles on career development. He indicated a child growing up in a negative family environment may develop a "harsh, self-deprecatory, poorly-integrated, and irrational superego" (p. 141). This would interfere in later stages of development such as the "industry versus inferiority" stage encountered during one's school years and ultimately the "identity versus identity confusion" stage wherein career choice is a major issue.

As can be seen in this overview, the dynamics of family influences on career development are quite intricate. Simply stated: "In sum, the total family influence is more subtle than can be indicated by questions such as 'Does your family want you to'...?'" (Levine, 1976, p. 279) To grasp the magnitude and mode of family influence it is important for the reader to understand the process or dynamic interactions which occurs within a family system.

Family Systems Theory

Hesser (1981) points out that in the past many of those who studied human behavior approached it as a function of intrapsychic, interpersonal, or reinforcement factors. In contrast the family systems approach uses a social systems perspective to explain human behavior.

Family Systems Theory has its origins in General Systems Theory (Bertalanffy, 1962) which proposes three basic elements within a system. The first is holism. Each part of the communication process is interrelated in a greater whole. The second element is self-regulation whereby feedback among the parts comprising the system helps to regulate and maintain it. The third element is dynamism or energetic state. Nichols (1984) provides a sketch of how these properties of systems theory translate to a human system. Holism, or wholeness, in a human system implies that the family behaves as a composite, not just the sum of its parts. The behavior

of each member is related to or dependent on the behavior of all others within the system. Thus the system is self-regulating. Change in one member has repercussions for the others. These may be positive or negative. Positive feedback serves to change the system whereas negative feedback helps to maintain the status quo. For a family to stay together there must be some negative feedback to maintain the system's balance (equilibrium) in the face of developmental and environmental stresses. Human systems are energetic in that they are open systems with continuous input from and output to the environment. To understand families the theory holds it is more important to understand the process, the on-going organization of their interactions, than the etiology or outcomes of their behaviors. Change in the process or structure can produce necessary changes in the system.

From a systems perspective, families are seen as distinct, natural socialization systems. Within each there evolves rules, roles, power structure, communication patterns, and techniques for problem solving. This facilitates the accomplishment of tasks by the family members (Goldenberg & Goldenberg, 1980). Within the family structure each person is unique. He belongs to different subsystems, has a different amount of power in each, and learns differentiated skills within them (Perosa, Hansen & Perosa, 1981). Bratcher (1982) references two basic assumptions of Family Systems Theory utilized in the works of Carter and Orfanidis (1977). They include (a) the idea that the family (which helps shape one's life) is the most powerful emotional system to which an individual belongs and (b) a view of family relationships as highly reciprocal, patterned, and repetitive (usually circular rather than linear in nature). Bratcher indicates that as the family structure and rules develop, they promote consistency and predictability within the family's cycle of interaction. These elements are typically passed between generations without conscious awareness. Beyond rules which prescribe behaviors, families also develop myths which prescribe behaviors as well as predict outcomes. For example a family with difficulty expressing anger may hold the

myth "if I get angry I will hurt somebody" (p. 88). Bratcher indicates it is these rules and myths which determine the way the family is perceived (e.g., there has always been an alcoholic in that family) and the importance family members place on factors such as prestige, religion, and service to others.

Important Concepts in Family Systems Theory

Being a newer and more novel approach to comprehending human behavior, Systems Theory brings with it a very different set of terms and concepts. Some of the more important ones include:

BOUNDARY - the emotional barriers between members of a system, subsystem, or family. At one extreme boundaries can be rigid (or disengaged) which serves to isolate the individual or unit. Here there is no sense of loyalty or belonging and no support given to members. At the other extreme boundaries can be overly permeable (diffuse or enmeshed) thereby making it hard to distinguish one person's thoughts and feelings from another's. Support is given with such speed and intensity that roles are not clearly differentiated, and it is difficult to determine where the ownership of problems lies. (Bratcher, 1982; Nichols, 1984; Perosa, et al., 1981). For a family to function well, boundaries of one subsystem should be free from interference from other subsystems (Feldman & Gehring, 1988; Perosa et al., 1981), and they must be flexible enough to permit change when necessary but stable enough to maintain continuity for members during a crisis (Parker et al., 1989).

LEVELS OF DIFFERENTIATION - the degree of emotional separation among individuals. In his review of such concepts, Zingaro (1983) notes that the level of differentiation determines how well the family and individual will cope with developmental tasks involving independence and autonomy.

TRIANGLE OR TRIAD - a three person system. Nichols (1984) cites Bowen's belief that this is the "smallest stable unit of human relations" (p. 589). Sometimes when problems evolve in a two person relationship (dyad), the conflict will be detoured by involving a third person. This serves to stabilize the original dyad relationship. This process is referred to as triangulation. For example, a woman who feels her husband has become emotionally unavailable to her may focus the family attention on the problems of their son who has a learning disability as he struggles for a career and autonomy. This focus may help to re-engage her husband's support.

HOMEOSTASIS - a tendency of a system to try to maintain its balance. When the established, repetitive mode of operation is altered, rules are evoked and there is considerable pressure to restore the balance of the system. If the "homeostatic mechanism" fails to restore the balance, one or more member may develop a symptom to force the balance to return (Bratcher, 1982; Nichols, 1984). Olson, Sprenkle and Russell (1979) cite the work of Wynne (1958) indicating that a rigid homeostasis over time and successive developmental phases of the family is indicative of pathology. Apparently some flexibility is needed to accommodate the developmental demands of the family members.

The Circumplex Model of Marriage and Family Systems

Included in the previous pages are a few of the numerous concepts which have evolved through family systems theory. The intention behind the development of the Circumplex Model is to integrate and simplify the numerous family process concepts being used in the field. After extensive review of concepts from family therapy and other social science fields, Olson et al. (1979) conclude that at least forty of those concepts are tied into the two dimensions - cohesion and adaptability. Fowler (1981) independently confirmed the stable presence of these two factors underlying the variety of systemic concepts he was studying. In fact, he concluded that these concepts may succinctly incorporate the ten systemic dimensions proposed by Moos in his Family

Environment Scales. The independence of the adaptability and cohesion concepts was verified by Russel (1979). She conducted a factor analysis of several self-report scales and a behavioral measure (the SIMFAM game). Each of these dimensions loaded on separate factors.

Thus adaptability and cohesion form the basis for Olson's model which proposes that the degree of emotional closeness among family members (cohesion) and the family's flexibility to change (adaptability) work together in determining how well a family system will function. Both of these dimensions are divided into four levels ranging from very low to very high. This results in a 4x4 matrix, or 16 cells, each identifying a potential type of family system. Figure 1 depicts the four major quadrants. Printed within the quadrants are the sixteen subdivisions or cells which represent family types. According to Olson et al. (1979) the most common "types" of systems are the four central or moderate types and the four extremes on the matrix. Typically if a system is extreme in one dimension, it also tends to be extreme on the other. Extremes, however, should not be viewed as aberrant, unrelated states; rather they are "continuous with functional behavior" (p. 19). At times even the extremes may prove functional (e.g., in times of crisis), however, when they persist they may constitute a problem.

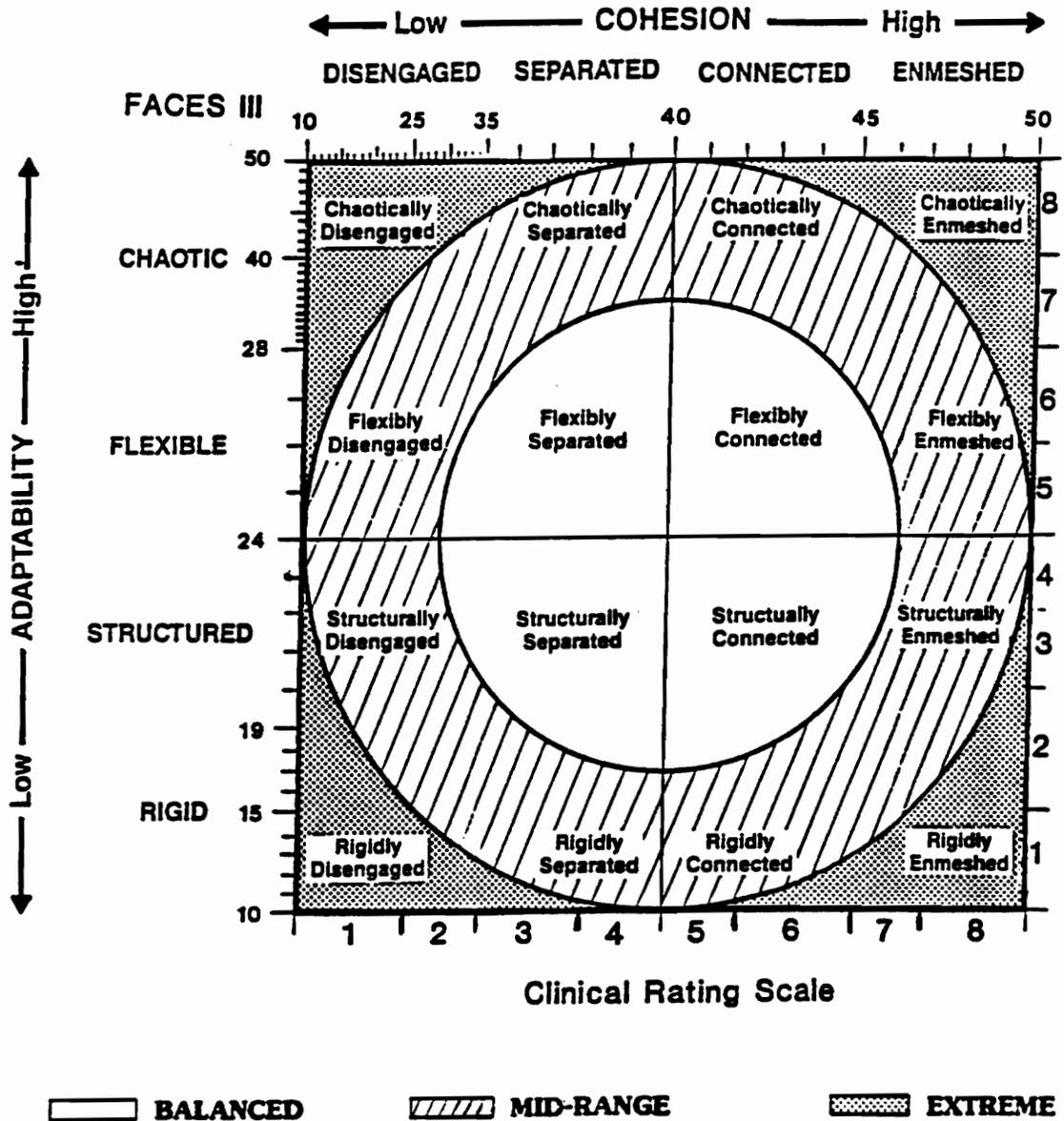


Figure 1. **DIAGRAM OF THE CIRCUMPLEX MODEL**
 From "FACES II: Linear Scoring and Interpretation"
 by D. H. Olson and J. Tiesel, 1991, FACES II Manual,
 p. 7. Copyright 1986 by D. H. Olson.
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Key concepts within the Circumplex Model. The integral concepts to the Circumplex

Model, cohesion and adaptability are defined as follows:

COHESION - the emotional bonding of members with one another and the extent to which autonomy is afforded to individuals within the system (Olson, et al., 1979). At the low end of the scale is DISENGAGEMENT wherein individuals experience low bonding and high autonomy. At the high end of the scale is ENMESHMENT. Individuals in this type of system overidentify with one another which demonstrates high bonding. This affords members limited autonomy. Bowen (1978) indicates that enmeshment stems from the tendency of a family to engage a third party to assist in conflict resolution (triangulation). While this is a natural tendency, it is considered non-productive. Pathological enmeshment occurs when tension in one relationship (e.g., a marriage) promotes mutual dependency (e.g., between a child and a parent), as a way to compensate for a void (e.g., in the marital relationship) (Goldenberg & Goldenberg, 1980). Rodick, Henggeler and Hanson (1986) caution against confusing enmeshment with positive affect noting that chaotically enmeshed dyads are less affectionate and warm than balanced dyads. The authors pinpoint communication as a potential area of difficulty for the chaotically enmeshed type. It seems enmeshed mothers evidence difficulty providing structure for their children as they have problems providing explicit information and supportive communications. As a rule of thumb, a moderate level of cohesion seems to be most functional for family development (Olson, et al., 1979; Russell, 1979). Russell points to the case of adolescents who developmentally are working toward more freedom and individuality. Those who best accomplish these tasks experience a moderate level of cohesion.

To diagnose a couple's or family's level of cohesion, Olson et al. (1979) recommend assessing how family members handle nine basic issues. They include: emotional bonding, independence, boundaries, coalitions, time, space, friends, decision making, interests, and

recreation. Instruments such as the FACES, Family Adaptability and Cohesion Scale (Olson, Bell, Portner, 1978), are specifically designed for this task.

ADAPTABILITY - "the ability of a marital/family system to change its power structure, role relationships, and relationship rules in response to situational and developmental stress" (Olson et al., 1979, p. 12). At the low end of the scale is the RIGID or authoritarian family system. Here there is little flexibility regardless of the crises encountered. Problems are usually resolved in a very similar manner time after time. At the high end of the scale is the CHAOTIC system which lacks leadership, stability, and predictability. In this system things are in an almost constant state of change or flux. To be truly adaptive, the system must strike a balance between change and stability. Russell (1979) points out that change is functional if it occurs within reasonable parameters. Without limits change becomes erratic, random and confused. As with cohesion, a moderate level of adaptability is purported to be best as it involves a shared leadership pattern.

To assess adaptability within a system, Olson et al. (1979) recommend examination of seven variables. They include: assertiveness and control, discipline, negotiation style, role relationships, relationship rules, and system feedback. Like cohesion this trait may be assessed via the FACES Scale, the instrument selected for this study.

Assessment of Circumplex concepts via the FACES. The Family Adaptability and Cohesion Evaluation Scale (FACES Scale) originally resulted from a conceptual clustering of over 50 concepts developed to describe marital and family dynamics (Olson, 1989). Hence, through its two scales it provides a unique and fairly global estimate of family functioning.

The FACES II is a 30 item scale designed to measure an individual's perception of his family. It consists of two subscales, one 14-item scale measuring adaptability and one 16-item scale measuring family cohesion. It uses a five point Likert scale to determine the extent to which

the respondent feels the statements are applicable to his/her family. The scale takes 10 to 15 minutes to complete and has a seventh grade reading level (approximately).

The final version of the FACES II was developed by administering the 50 items of the original FACES II to 2,412 individuals in a national survey. Using factor analysis and reliability checks the scale was reduced to 30 items. For internal consistency reliability the respondents were divided into two equal groups. The following Cronbach Alpha figures were found:

Table 1

FACES II Internal consistency reliability

Scale	Total Sample	Sample 1	Sample 2
Cohesion	.87	.88	.86
Adaptability	.78	.78	.79
Total Scale	.90	.90	.90

¹From "FACES II: Linear scoring and Interpretation" by D. H. Olson and J. Tiesel, 1991, Unpublished manuscript.

A test-retest reliability study was done on the original FACES II (50 item version). The subjects were 124 university and high school students with a mean age of 19.2 years. Over a four to five week period the Pearson correlation was .83 for cohesion, .80 for adaptability, and .84 total.

In an examination of concurrent validity Hampson, Hulgus and Beavers (as cited in Olson, 1991b) compared the FACES II and FACES III to the Dallas Self-Report Family Inventory. The following results were noted:

Table 2

Faces II and III concurrent validity

	FACES II		FACES III	
	Cohesion	Adaptability	Cohesion	Adaptability
SFI Health Score	.93**	.79**	.84**	.45**

** = p. < .01

Hence the FACES II was higher in concurrent validity than the FACES III.

At the time of this writing FACES-IV is being developed. One of the major thrusts behind the development of FACES-IV stems from the limitations of the earlier FACES instruments. The statements in the earlier FACES are responded to via a five point Likert Scale. The scores range from 1 (almost never) to 5 (almost always). Olson (1991a) mentions this as one of the problems with the FACES-III. He cites recommendations by Pratt and Hanson (1987) as well as Perosa and Perosa (1990) as part of the impetus to switch to a bipolar response format as is being done in FACES-IV. The new response format is: "1=Not Often Enough; 3=Just About Right; and 5=Too Often." The hope is to secure the upper extremes of adaptability and cohesion which the other scales apparently have not done. Hence, Olson maintains the Circumplex Model, but indicates that the older FACES Scales are limited by measuring families in the lower extreme up to the balanced range. The higher the score on the FACES, the healthier the perceived family functioning. Since in plotting such data the upper extreme does not bend back down into a dysfunctional range Olson indicates that research utilizing the older scales should employ a linear statistical model. Norms based on a linear scoring system have yet to be established.

One of the major criticisms of the FACES scale has been the norming. Originally the FACES was normed on an unrepresentative sample, a high percentage of families which had problems. However, Amerikaner and Omizo (1984) point out that the underlying constructs (adaptability and cohesion) are empirically supportable. Thus they felt the FACES was valid for use in cases where the research did not require use of the norms to separate families into distinct categories.

A second concern for researchers has been the possibility of cultural bias. Baldwin and Baranoski (1990) summarize the position of the developers of the FACES on this matter. Since extremes in functioning may prove healthy for some cultural minorities it has been suggested that at times researchers may want to give the instrument twice from a real versus ideal family

perspective. The discrepancy in these scores could be considered as a measure of family satisfaction. However, Daley, Sowers-Hoag and Thyer (1990) compared this difference score to the Index of Family Relations and found no strong correlation. They indicated it would be premature to utilize the FACES II as an index of family satisfaction. Perhaps at this time the best strategy would be the forewarning of researchers to consider the establishment of controls in samples inclusive of minority groups. It should be noted that an evaluation of the impact of gender on FACES scores revealed no systematic differences based on sex (Amerikaner & Omizo, 1984).

Through the years other measures of family structure have been developed. Some research has suggested favorable psychometric characteristics for these instruments over the FACES scale. However, these same researchers often conclude that the length and comprehension level of the FACES make it a better instrument for children, particularly those with learning problems (Baranowski, Dworkin, Dunn, Nader & Brown, 1985; Parker et al., 1989). The utility of the FACES for children was confirmed by R. G. Green (1989) who studied a clinical (short-term in-patient) sample of adolescents and their mothers as well as a matched, non-clinical sample. He found a striking difference in the results of adolescents and their mothers. While there were no statistically significant correlations between the FACES III and the Structural Family Interaction Scale for the mothers, there were significant correlations for the adolescents on all but 1 of the 21 scales. The author was encouraged particularly by the FACES III Cohesion scale which evidenced both criterion (known group) and construct validity for the adolescent sample. He concluded, "Because many theories of family therapy are influenced by the notions of enmeshment and disengagement, the FACES III cohesion subscale may be a particularly valuable clinical assessment device for adolescents" (p. 317-318). This same study found less support for the validity of the adaptability scale. The author suggested this was most likely related to the

curvilinear model of interpretation. He cites empirical support for a linear interpretation of the adaptability scale.

The FACES scale has also been utilized with special samples, such as families of children with learning disabilities. Michaels and Lewandowski (1990) utilized the FACES III on a sample of families with and without a child having a learning disability. Children with and without learning disabilities from extreme families obtained significantly poorer scores on total, social and school competence measures. A significantly greater number of the families with learning disabilities obtained extreme scores on the FACES. This corresponds to previously cited research revealing extreme scores or structural deficits in these families (Amerikaner & Omizo, 1984; Perosa & Perosa, 1982; Toro et al., 1990).

The merit behind a scale such as the FACES lies in the insight it provides to practitioners. With an estimate of family functioning counselors can begin to understand the perceived operation of the system and the way that systemic change might facilitate or impede career development.

The Circumplex Model of change. Systemic change refers to the altering of a system in response to stress. The Circumplex Model is dynamic and does allow for change. In fact, Olson, Russell and Sprenkel (1983) hypothesize families must change as normal transition points in the family are encountered. Hence the life cycle stage and the composition of the family impact upon the type of family system found at these points. The family can move in whatever direction is called for by the circumstances, stage of the family life cycle, or socialization of family members.

There are two major predictive hypotheses associated with change in the Circumplex Model (Olson, et al., 1979). The first states that systems without serious problems can change their levels of cohesion and adaptability to adjacent levels in the matrix to deal with stressors. The second hypothesis is that systems with serious problems will either not change or flip to opposite extremes in one or both dimensions when stress is encountered.

Systemic Perspective on Career Development

With career development as with all development comes change. With change comes the likelihood of stress on a system. In times of stress, it is the family's adaptability and cohesion level which plays a major role in the types of problems which arise and how they are handled. Typically during the stress of adolescence there is a transformation from a relatively high cohesion or dependence on parents to a balanced connectedness which allows for individuation. Similarly the power relationship is modified from predominantly parent power to a more balanced relationship (Youniss & Smollar, 1985). This trend was born out in the data of Feldman and Gehring (1988). They studied 150 students from 6th, 9th, and 12th grades using the "FAST" (a spatial assessment technique where subjects depicted family relationships on a board by arranging wooden figures). Their subjects perceived decreased cohesion and a long term, progressive decrease in the parent's power in families with older adolescents. When such typical patterns are thwarted due to a career crisis, Lutz and Weeks (1985) depict three specific stages in the system's reaction. First the family experiences the impact of the change and begins to perceive the potential disruption to the equilibrium of the system. Next comes the transition stage. Here the system is in flux as the structure and balance of power shift while the individual attempts to resolve the crisis and others respond to the changes in the system. Finally the family adjusts to the life style and changes created by the individual's choices. In some cases, however, this process may not be smooth. For example if the family typically functions in the extremes of cohesion or adaptability it may stubbornly resist change. Such patterns of systemic dysfunction may yield floundering, delays, or chronic indecisiveness as hindrances to the career development process (Penick & Jepsen, 1992).

Schulenberg et al. (1984) explore the career problems which individuals from families in the extreme ranges of functioning might encounter. For example, an individual from a family at

the enmeshed/rigid end of the scale may perceive little choice in his career development as the parents are over-involved in his life. He may have trouble identifying his interests from what others want for him. Although homogeneity of interest may promote smooth functioning in the home, Grotevant (1979) questions whether such uniformity of interest promotes ideal career choices. It may in fact yield premature foreclosure on a career consistent with the parents' (not necessarily the young adult's) identity. Schulenberg et al. (1984) see the other extreme as the individual from the disengaged/chaotic family. This individual may have complete control over his choices, but little support or interest from the family, thus he may flounder as he attempts to define his career.

Recent research has supported the importance of this systemic perspective on career development. Penick and Jepsen (1992) studied 215 eleventh graders and their parents from rural or small towns. A variety of family and personal variables (e.g. socio-economic status, educational attainment of parents, gender of student) were gathered and entered into a regression equation together with ratings of the family member's perception of their family unit's interaction. They found these perceptions of family interaction explained more of the variance in vocational identity than any of the other variables collected. Particularly important were the system maintenance variables of locus of control, democratic versus authoritarian family styles and enmeshment. In the father's ratings disengagement surfaced as a significant predictor of student involvement in exploring and planning their future careers. The authors concluded that the frequent appearance of enmeshment and disengagement among significant predictors in their multiple regression equations supports the family systems proposition linking enmeshment and disengagement to difficulties in the accomplishment of adolescent development tasks (e.g. psychological separation from parents, identity development, and career development). Fullinwider-Bush and Jacobvitz (1993) came to similar conclusions in their study of generational boundary dissolution and female identity

development. Using questionnaires to study 45 undergraduate women they found parent-child boundary dissolution (as demonstrated in role-reversals, enmeshment, and over-involvement) coincided with less exploration behaviors. Mother-daughter boundary dissolution correlated with the daughter's tendency to base commitment to career and relationships on parental values and expectations without exploration of alternatives. From such premature foreclosure on options, one might expect difficulties to arise in the career development process.

Problems in Career Development

Due to shifts in society and the types of jobs available, counselors are dealing with a greater number of clients in career crises (Lutz & Weeks, 1985). Greenberger and Steinberg (1986) attribute much of the career problems in today's young people to premature entry into the work force which curtails identity development.

Crites (1978) indicates the two major career development problems encountered during the high school years are indecision and lack of realism. He cites his 1969 work finding about 30% of high school students fall into each of these categories. He concludes that approximately two-thirds of those completing high school are coping ineffectively in the vocational realm and can be considered career immature.

Problem I: Career Indecision

Zingaro (1983) tackles the topic of career indecision in some detail. He refers to Salomone's work (1982) distinguishing between clients who are undecided and those who are indecisive. The undecided client is uninformed and not yet serious enough to make a vocation choice, whereas the indecisive client has some serious confusion regarding his identity and is very anxious about decision making. Until a client deals with the "anxiety-laden antecedents" of decision-making, he will have trouble making any choice. Those antecedents include identity, self-esteem, self-confidence, autonomy, and interpersonal maturity (e.g., tolerance, trust, and intimacy).

Zingaro (1983) suggests the true dilemma for the indecisive client is what career decision-making represents. It is a move away from the familiar (parents, family, and friends) rather than a movement toward one's goals, aspirations, and an unfamiliar future. The individual has trouble distinguishing his preferences from those around him who may be offering advice or subtly reinforcing his career indecision. However, in Zingaro's scenario (a Family Systems framework) the client is not a passive victim. His behavior compliments and reinforces the existing cycle which promotes the indecision. Zingaro concurs with Bowen (1978) who uses the term "undifferentiated" to describe this type of client. By this Bowen means a very permeable boundary exists between self and others which makes it difficult to distinguish one's own wishes, thoughts, and goals.

This systemic perspective on career indecision received partial support in Eigen, Hartman and Hartman's study (1987). They found that chronically undecided college students were more likely than their career decided or developmentally undecided peers to describe their family structure as highly structured and too emotionally connected or as having little structure and emotional attachment. Related opinions regarding career indecision include: Lopez and Andrews (1987) who speculate that family dysfunction can hinder vocational development, fueling the emergence of career indecision; Thomas (1967) who suggests that career indecision may constitute a defense mechanism allowing the individual to escape conflict or frustration; and Bordin and Kopplin (1973) who see career choice problems as symptomatic of a broader deficit. They indicate such individuals may be better diagnosed as having identity problems.

Problem II: Unrealistic Vocational Goals and Aspirations

The second major career problem facing high school students is unrealistic vocational goals (Crites, 1978). In reviewing Salomone and McKenna's work on this area, Zingaro (1983) cites three problem areas. The lack of realism may relate to a need for (a) experience - because of limited exposure to the world of work or limited awareness of one's abilities; (b) information -

because of inaccurate information on careers and economic needs; or (c) better self-understanding - including amount of motivation, perceptions of familial and societal pressures, flexibility to change occupations as per the dictates of the job market, and a view of employment as central to one's identity. Both of these career development problems (career indecision and unrealistic goals and attitudes) can be related to deficits in the individual's level of career maturity.

Career Maturity

The concept of career maturity was introduced by Super (1955). It was intended to help depict in what stage an individual falls on the vocational development continuum (e.g., exploration stage, decline, etc). As the concept evolved, Super (1957) specified five dimensions to the development of career maturity. They include: (a) orientation to vocational choice, (b) information and planning, (c) consistency of choice, (d) crystallization of traits and interests, and (e) wisdom of vocational preferences.

Crites (1978), as a result of his work on the Career Pattern Study with Super envisions two major dimensions to career maturity - content factors and process factors. **CONTENT FACTORS** include consistency and realism of career choice. Career maturity involves consistency across time, occupational field, and level or complexity. Realism of choice examines compatibility between the choice and the individual's interests, abilities, and personality.

Crites expresses particular interest in the second dimension of career maturity, the career choice process, as little has been done to assess this area, yet it is a prime area wherein career development problems could arise. **PROCESS FACTORS** consist of competencies and attitudes. **Career Choice Competencies** include one's self-appraisal, occupational information, planning, goal selection, and problem-solving. **Career Choice Attitudes** are the focal point of this study. They consist of five areas (decisiveness, involvement, independence, orientation, and compromise) clarified in the next section. Suffice it to say the intent behind examining career maturity attitudes

is to elicit "...the feelings, the subjective reactions, the dispositions that the individual has toward making a career choice and entering the world of work" (Crites, 1978, p.3). One of the most commonly used measures for assessment of this area is the Career Maturity Inventory-Attitude Scale, developed by John Crites. This is the instrument selected for this study.

Assessment of Career Maturity: The Career Maturity Inventory

The complete CMI was designed to measure the career choice "process" aspects of career maturity (e.g., career choice competence and career attitudes). Crites believed that the career choice content variables (consisting of career choice and realism of career choice) were already being assessed via existing instruments. By going beyond aptitudes and interests to the choice process, Crites intended the instrument to facilitate counseling with clients experiencing difficulty in career decision-making.

The CMI-AS refers to the attitude portion of the scale, which comes in two forms. While the Screening Form A-2 yields one total score, the Counseling Form B-1 is 25 items longer and yields five subscores related to five attitudinal variables. They include: decisiveness in career decision-making; involvement in career decision-making; independence in career decision-making; orientation to career decision-making; and compromise in career decision-making. This scale takes approximately 40 minutes to administer and requires a sixth grade reading level unless presented orally.

While the rationale and theory behind the development of the CMI-AS was quite strong, test reviewers received it cautiously. Frary (1984) indicated that factor analysis supported the constitution of the subscales. However, there was no evidence presented relating these subscores to pertinent external criteria. The internal consistency reliability estimates reported in the manual for Form B-1 ranged from .50 to .72. In terms of construct validity, Zytowski (1978) indicated the

scale appeared to be related to other measures of maturity, ability, and certain personality variables. He also mentioned that the scale carried a white, middle-class, work-oriented bias.

Frary (1984) questioned the assumption that the increase of CMI-AS scores with higher grade levels was due to "maturation." He suggested that higher level students may simply find it easier to discern the desirable answer. This grade/score relationship was a logical one as the CMI-AS items were selected based on their ability to differentiate students in lower and higher grades.

Zytowski (1978) expressed a concern over the stability coefficient of .71 cited in the manual. This was for a group of 6th through 12th graders over a one year period. While the reviewer found this to be low, Crites indicated it was an artifact of "maturational variance." Zytowski (1978) pointed out that this would limit the scales utility for measuring individual or group change over time.

While the test reviews point out that the CMI-AS has its flaws, other instruments do as well. The other major career maturity scale, the Career Development Inventory (CDI), contains two subscales which form a composite attitude score. However, Brown's study (1982) questions the utility of the CDI in its present form for special populations such as students with learning disabilities (the focus of this study). In comparing the two instruments, it appears that the shorter questions together with the simple True-False format make the CMI-AS intuitively more appealing for a group with learning problems. Perhaps this is why the CMI-AS appears to be used most often in career maturity research on individuals with learning disabilities.

Significance of the Career Maturity Construct

Greenberger and Steinberg (1986) caution against oversimplification of the term career maturity. It goes beyond the isolated ability to perform adult roles. In essence this would be "pseudo-maturity" wherein an adolescent may carry out an adult role without self-understanding or the ability to comprehend the social experience. For true maturity one must have a stable sense of

self, a sense of how one would like to be, and an idea of how to assimilate such awareness into a coherent and purposeful lifestyle. To do this requires "introspection, active engagement with others, experimentation in a variety of social roles, conflict, and often grievous (but none the less useful) mistakes" (p. 5). The authors cite Erickson's call for a "Psychosocial Moratorium" for adolescents as one of the keys to establishing sufficient self-knowledge for true career maturity.

Srebalus et al. (1982) describe career-mature individuals as those who retain a good deal of knowledge about themselves and the world of work, actively seek more information, depict more realistic options, indicate more consistent alternatives as time goes on, and demonstrate greater coherence in interest patterns. Career maturity correlates with overall adjustment and personality development (Crites, 1978; Karayanni, 1981). Biller (1985) cites longitudinal research relating higher levels of career maturity in high school students to higher levels of career satisfaction in the world of work. If such studies hold true and career maturity is an important link to career satisfaction, recent trends appear to cast an unfavorable shadow on the career development prospects of our youth.

Interpretations of statistics and literature on youth employment by Greenberger and Steinberg (1986) and Young (1983) present a rather dismal picture of the career maturity trends in youth. This includes a demise of the work ethic, materialism as a primary work incentive, and premature foreclosure on the career development process. In a more positive vein it appears that through intervention one's career maturity can be bolstered (Brown, 1982; Crites, 1978; Hutchinson, Freeman, Downey & Kilbreath, 1992; Karayanni, 1981). To intervene, however, one must identify the variables which affect career maturity and the process through which they exact their influence. This may vary somewhat, dependent upon the population studied, hence the last section of this chapter will focus on the application of the concepts covered to the target population for this study, students with learning disabilities.

Learning Disabilities:

Application of Family Systems and Career Development Constructs

Family Influences on the Expression of a Learning Disability

The family must be considered as practitioners try to conceptualize factors which impact upon individuals with learning disabilities (Kaslow & Cooper, 1978;). Parents of individuals with learning disabilities have been shown to: provide the majority of guidance and support for career related transitions (Dowdy et al., 1990); serve as one of the most important support systems for adults with learning disabilities (Malcolm, Polatajko & Simons, 1990); be of value in programs designed to enhance academic performance of these students (Correa, Gonzalez & Weber, 1991; Sah & Borland, 1989; Switzer, 1990); lay the ground work for the adjustment of their children by helping them conform to family roles and rules as well as helping them solve problems related to behavioral and social situations (Orlando & Bartel, 1989); and be instrumental in the development of their child's self-concept (Rosenthal, 1989). Yet this all important ecosystem has been found to have organizational and structural differences which could have a counter-productive impact on students with learning disabilities (Friedman, 1978; R. J. Green, 1989; R. J. Green, 1990; Feagans et al., 1991).

Familial Communication Deviances as a Causal Influence

At the extreme on the family influence issue are those who debate the role of parents as causal agents in the development of learning disabilities and other learning disorders (R.J. Green, 1989; Spacone & Hansen, 1984; Whittaker, 1976). In tracing the history of this idea, Whittaker refers to early psychoanalytic studies which relate certain types of learning disorders to a problem with ego functioning that hinders the child's curiosity and urge to explore. This school of thought has led to studies of mother-child communication disturbances. R. J. Green (1989) uses Wynne, Singer and Toohey's (1978) concept of communication deviance. He portrays it as "oddities of

spoken language that impair the establishment and maintenance of a shared focus of attention in communication" (p. 191). He reviews studies in this field and finds support for the idea that communication deviances relate to underachievement, whereas higher scores on communication relate to stronger academic problem solving. Specifically Green concludes, "To the degree the family is characterized by confusing and disorienting communication, the child's ability to think and perform in the school setting may be compromised" (p. 193).

As a result of his work on communication deviances R. J. Green (1990) proposes four family related models for learning disabilities. They include: the Environmental Model which links learning disabilities to the deviant communication style of the parents or an underorganized family structure; the Genetic Model in which the family communication or organizational problems are symptomatic of a parental learning disability and a possible hereditary link; the Vulnerability/Stress Model in which parental communication or organizational problems serve as stressors to amplify the child's genetic vulnerability for a learning disability; and the Ecosystem Model in which parent and child cognitive/behavioral factors interact and amplify one another over time yielding "a communicationally deviant family learning environment associated with learning disabilities" (p. 146).

Family Factors as Moderating Variables

As Whittaker (1976) points out a family etiology perspective is extreme, but there does appear to be a growing body of literature which lends credence to the less extreme idea that the family has a moderating influence on the expression of a learning disability (Oliver, et al., 1991; Thompson et al., 1990; Toro, et al., 1990). These influential factors may include such things as family learning problems, a lack of educational stimulation in the home, low self-worth, a lack of family support, and/or factors related to family structure.

Actual structural differences were noted in the families of youth with learning disabilities by Amerikaner and Omizo (1984). Using the FACES Scale they studied the parents of three groups of 30 children, two groups with disabilities (learning disabilities or emotional disturbance) and one "normal." For the fathers they found significant differences between the groups with and without disabilities. The former evidenced chaotic scores on the adaptability scale and most scored in the disengaged and separated range of the cohesion scale. While there was no difference in the mothers of the groups with disabilities on the adaptability scale (most scored in the chaotic range), the mothers of the group with learning disabilities evidenced more mid-ranged scores on cohesion. Their counterparts in the group with emotional disturbance tended to be lower in cohesion with separated, disengaged scores. A similar pattern of family interaction was found by Michaels and Lewandowski (1990). They noted that within their sample (59 boys with and 65 boys without learning disabilities) the boys with learning disabilities had more internalized and externalized behavior problems than their counterparts in the study. The authors cited previous research indicating a link between family rigidity and childhood emotional problems. They questioned whether learning disabilities, like behavior disturbances, elicited overly rigid parental responses, or if families high in rigidity tended to exacerbate the learning disability making these children more likely to be diagnosed. Margalit and Almoughy (1991) registered a similar concern regarding which came first, the structural dysfunction or the child's problem. Perhaps most important here is the underlying concept that reciprocal influences exist between the parent and child (Lyytinen, Rasku-Puttonen, Poikkeus, Laakso, & Ahonen, 1994). With this understanding the trend seems to be moving toward involving the family more in treatment. Amerikaner and Omizo (1984) envision it as a move away from involving parents as trainers or teachers toward working with the entire system as the client. The obstacle is that parents do not perceive that they, as part of the family system, have a role in the child's learning disability (Wilchesky & Reynolds, 1986).

The Learning Disability's Impact on the Family System

Just as the system impacts upon children with learning disabilities, differences in children with learning disabilities place stress on the family system and often alter it (Kaslow & Cooper, 1978). In fact, Dyson (1993) found the presence or absence of a child with disabilities together with the quality of the family relationship (supportive versus non-supportive) were the best predictors of parental stress. Through her longitudinal study of 38 families with and 38 families without disabilities Dyson also observed that the stress of the disability did not appear to dissipate over time.

Early Interaction Patterns Stress the System

Kaslow and Cooper (1978) point out that some of these children may be different from the beginning, which presents problems and concerns to their parents. The child may misperceive facial expressions, or fail to reciprocate smiles. The child's "differentness" may be confusing and frustrating to the parents. Gradually parents become aware that this is not the ideal child they expected. Some parents begin the expensive process of shopping for doctors to allay their fears, but to no avail. As the disability is confirmed, the family may go through the grief process wherein they mourn the loss of that ideal child.

Guilt and Grief Stress the System

In this process of adjustment, much can go awry. Wilchesky and Reynolds (1986) conceptualize the impact of the child's successive academic and social failures as the progressive shattering of the parent's unspoken dreams for their child. As these realizations occur feelings of doubt and guilt may arise in the parents (Briard, 1976; Margalit, 1982; Wilchesky & Reynolds, 1986). Did they somehow cause or enhance the problem? How could they have negative thoughts or feelings about this child with disabilities? Have they hindered the child's self-concept and emotional growth? Abrams (1970) indicates that in the presence of these unacceptable and

intolerable guilt feelings, the parents may experience anger and hostility toward the child. Since such feelings are difficult for the parents' to tolerate, defense mechanisms are erected against these impulses. Those mechanisms may take many forms (i.e., overprotection, overindulgence, denial, projection). This may not only hinder the child's chance for growth and development of adaptive behaviors, but it may lead to more generalized family dysfunction as well. Perosa and Perosa (1982) present scenarios of family dysfunction based on stress within the parental subsystem. At one extreme there are attempts to avoid conflict wherein both parents focus on the child and become completely invested therein. At the other extreme there may be competition for the child's attention and affection, which triangulates the child into the parental conflict. The child may be seen as the cause of the familial discord (i.e. detouring blame on the child), or one parent may become overprotective and ally herself with the child to form a cross-generational coalition against the other parent. Often it is the mother in coalition with the child. The father may distract himself with work, hobbies, an affair, etc. thereby disengaging from the family. The presence of such grief-related stress is supported by the literature. In a long term follow-up survey of individuals with learning disabilities Rogan and Hartman (1990) find a strong need on the part of families to resolve feelings of disappointment regarding their child's limitations and discouragement related to slow progress. Perhaps a good index of the demands and stress involved in parenting a child with special needs comes from a study by Parker et al. (1989) who found that these parents never perceived themselves as being off duty.

Briard (1976) portrays the recognition and acceptance of these natural but negative feelings as the first step in dealing with the situation. For some this may happen on their own, others, however, need assistance in working through these issues. Parents of individuals with learning disabilities have been noted to benefit from the type of psychological support seen in the

grief work of Kubler-Ross (Switzer, 1990). Such grief work can clear the way for the acceptance and growth of the real child.

Other Subsystems are Stressed

This familial stress is not confined to the identified child and his parents, siblings are affected as well. Kaslow and Cooper (1978) speak of the "veil of mystery" which some families place around the subject of the learning disability. While parental shame and guilt may prompt this, it promotes misunderstanding and has the effect of shutting out siblings, fostering resentment. Briard (1976) expresses concern about intense sibling rivalry stemming from the differential treatment of the child with the disability. Such rivalry and related systemic dysfunction has been documented in clinical case studies of families of children with learning disabilities (M.J.S., 1990). These sibling dynamics are a crucial aspect of the system's dynamics and as such, an important consideration in many aspects of the individual's development, including the career counseling process (Bradley, 1982).

Stress from the Family-Disability Interaction is Manifested in School

As the child enters school, the family-disability interaction manifests other dimensions. How receptive the child is to learning depends on the parent attitude toward school (Kaslow & Cooper, 1978). If the child has been overprotected, he may be unaccustomed to trial and error learning and very dependent in the classroom. Consequent problems may be blamed on the teacher which releases the child from responsibility for his learning. At the other extreme is the individual who comes from an achievement-oriented home where affection is predicated on performance. Feeling as though he is destined to disappoint his family, this individual may stop trying which leads to a self-fulfilling prophecy of failure. For other families the school becomes the outlet for their frustration and blame as the school cannot create the ideal situation and relieve the parents of their guilt (Abrams, 1970). Sometimes parental resentment of the school or problems stemming

from their own education, confuses the situation. Abrams notes that the child may be getting mixed messages. On the surface parents are criticizing the child for not achieving, meanwhile, the parents may be sending a non-verbal message encouraging continued failure, thereby justifying their anger against the school.

Feagans, et al. (1991) address this home/school adjustment issue using a "goodness of fit model." They postulate that children who do not fit well in their homes may receive poorer feedback and experience trouble adjusting to other situations. The authors tested this hypothesis using a sample of 63 families of children with learning disabilities (six to seven year olds) and 53 families of a comparable child (in terms of age, sex and race) but with normal achievement. Mothers were asked to select the five most and least desirable characteristics out of 19 possible descriptors per list. Later the mothers rated their children on a 4 point scale for each of the descriptors. Contrasting the lists the authors place the children in a low fit or high fit category. Outcome measures of achievement and classroom behavior were obtained over a 3 year period and a second follow-up occurred as the children left elementary school. For both groups (with and without a learning disability) a poor fit in the home correlated with less positive behaviors in class and poorer achievement. This relationship appeared to hold up over time as well, as the mother's expectations and beliefs regarding fit in the home at ages 6 and 7 correlated with the child's achievement at age 12.

Behavioral and Emotional Concerns Emerge Further Stressing All Systems

As though the home, family, and school stressors were not enough, through these years of conflict, confusion and growth individuals with learning disabilities may also bring with them stressors related to behavioral and emotional problems (R.J. Green, 1989; Hoffman et al., 1987; Kohlberg, LaCrosse & Ricks, 1972; Michaels & Lewandowski, 1990; Silver, 1976; Thompson, et al., 1990). The National Joint Committee on Learning Disabilities (1987) acknowledges difficulty

for individuals with learning disabilities in the areas of personal, social, and emotional growth. They suggest, because of such difficulties, a variety of psychological problems associated with persistent learning disabilities may arise (e.g., antisocial behavior, chronic depression, suicide, and substance abuse). A review of literature and research by Huntington and Bender (1993) yielded similar conclusions. Adolescents with learning disabilities tend toward a low academic self-concept, internalization of blame for failure, higher trait anxiety (correlating with sleep problems and somatic complaints), and an increase risk for severe depression and suicide.

The Konstantareas and Homatidis study (1989) documented the stress of a learning disability and related behavioral/emotional problems on the family. Fifty-six mothers and fathers rated their children (with learning disabilities) on the Child Behavior Checklist, then rated the stress they experienced as a result of these problems. Both parents rated their children higher in externalizing behavior problems (above internalizing). Boys were rated as significantly more problematic and stressful than girls. Greater child adjustment problems and parental stress were noted in the younger parents and in parenting dyads where the father was noted to have a low self-concept. While parents did not differ in behavior ratings of children, the mothers expressed greater stress in response to such behaviors.

Family, Disability and School Stressors Interact:

A Pattern of Dysfunction Emerges

The emotional factors impinging on a child with learning disabilities can be so pervasive that Perosa and Perosa (1982) see similarities between the child with learning disabilities and the child with psychosomatic problems. They cite Minuchin's work (1978), depicting three factors which are necessary for the development of severe psychosomatic illness in children. They include: (a) physical vulnerability of the child; (b) a family pattern of "enmeshment, over-protectiveness, rigidity, and a lack of conflict resolution"; and (c) circumstances where the symptoms and role of

the child are vital to helping the family avoid conflict. Thus this role reinforces the child's symptoms. The only notable difference between the learning disabled and psychosomatic models apparently involves the level of cohesion. Perosa and Perosa note in their study (contrasting twenty-five families of children with learning disabilities and twenty-five without) that there is less enmeshment in the group with learning disabilities. Instead, patterns of neglect and disengagement, particularly by the fathers, emerged.

The family reactions to these cognitive and emotional concerns may vary. Wilchesky and Reynolds (1986) use three broad categories to describe families seeking help with a child who is learning disabled. They include: well-functioning families for whom the stress of a child with learning disabilities may create worries or confusion as to how to help; families at risk who may tend toward dysfunction as they try to cope with transitions of a child with specific needs; and rigid families which are characterized by over-protection, enmeshment, inability to resolve conflict and a tendency to resort to old solutions to new problems. In these latter two family types the authors depict a tendency of the children to take on one or more symptoms as an expression of underlying problems in family dynamics. This may further hinder the child's functioning. The result is a cycle of family-disability interaction. While the child's disability stresses the family and alters its functioning, the family's reaction may evoke further symptoms in the child. Kaslow and Cooper (1978) addressed this connection when they wrote about "A vicious, repetitive cycle" which is set into motion. It seems with the inconsistencies, failures, and disappointments related to the child, the parent's anger is vented, causing more resentment, guilt, over-protectiveness and permissiveness. The child, confused by the parent's reactions and inconsistencies cannot focus on his school work yielding further inconsistencies, failures, and disappointments. Unfortunately, some adolescents in the midsts of such chaos are then faced with career development issues.

Career Development of Students with Learning Disabilities

Problems in the Career Development

Currently, one of the major impediments to vocational success of most young people is a failure to meet the demands of the world of work (Siegel & Gaylord-Ross, 1991). This includes problems with attendance, grooming and social behavior. Such social skill deficits are common to individuals with learning disabilities (Cartledge, 1989; Chelser, 1982; Gerber & Zinkgraf, 1982; R. J. Green, 1989; Toro, et al., 1990) and have a long range impact on their lives (Alley, Deshler, Clark, Schumaker & Warner, 1983). With this history of social and academic failure these youth may come to expect less success in the future and accustom themselves to accepting the minimum (Humes 1986). In essence, a self-fulfilling prophecy of failure may be formed. Alley et al. (1983) cite research supporting this contention. They note that young adults with learning disabilities tend to be less satisfied with their school experience, have low aspirations for future education/training and entertain fewer educational plans. This leaves them with a dilemma. While turned off to education these individuals face an economic climate which necessitates advanced vocational training to be competitive (Dowdy, et al., 1990; Fourqurean et al., 1991).

Through the years their confidence erodes and some individuals with learning disabilities begin to discount their own opinions. This adds to a tendency toward an external locus of control (Rosenthal, 1989), which yields problems in taking responsibility for one's life and relying on one's self to make career decisions. Those who are willing to make choices may have difficulty doing so. Other students with learning disabilities may have difficulty processing and interpreting career information in light of distorted perceptions or cognition (Bingham, 1981). In light of the disability their overall career development may be truncated (Brown, 1982). Such problems do not end with entry into a job for as Levinson (1978) states, at each transition point throughout life unresolved developmental tasks resurface.

Career Maturity of Students with Learning Disabilities

Perhaps the aforementioned social skill deficits, self-defeating thoughts, and the external locus of control come together under the umbrella of career maturity attitudes. The career maturity of males with learning disabilities was researched by Bingham over a period of years. In her 1978 study she compared four groups of males (N=30 each), learning disabled and non-learning disabled, using a pre-adolescent and adolescent sample. The males with learning disabilities at both levels evidenced significantly lower means in Career Maturity Attitude scores. In 1980 Bingham compared a private school sample and a public school sample. There was no difference on the Attitude Scales of the two groups of youngsters with learning disabilities. While this sample was weaker on the Attitude Scale of the CMI, it was comparable to the control group on the competence scale. Hence, the knowledge base seemed to be there, but the attitudes toward career development were weak and perhaps self-defeating.

Deficits in career maturity of youth with learning disabilities have been confirmed by other researchers as well (Fafard & Haubrich, 1981; Kendall, 1981). Biller (1985) declared career immaturity a major problem for adolescents with learning disabilities which threatened their employment, social adjustment, and academic success. He deemed this important enough to recommend it be considered a fourth psychoeducational characteristic serving to delineate adolescents with learning disabilities (along with academic-cognitive factors, personality-social factors, and perceptual-motor factors).

While there has been little research as to why adolescents with learning disabilities are less career mature than their peers, Biller (1985) explored some possibilities. This included Fafard and Haubrich's research (1981) showing a lack of career counseling, information, or job training for non-college bound students with learning disabilities, and a tendency to rely on parents for career information. Other possibilities include the aforementioned research-based concerns over youth

with learning disabilities including: poor self-perception, failure identity, lowered self-concept, poor social skills, reduced motivation, behavioral/emotional concerns, and family dysfunction. These career development deficits become all the more obvious as students with learning disabilities attempt to cross over from the school environment to the work place.

Transition Concerns

Making the transition from school to work is a major step for any individual. However students with disabilities are likely to find the bridge between these two worlds all the more monumental (Fagan, 1981; Hohenshil, Anderson, & Salwan, 1982). The push toward career development and transition services for individuals with learning disabilities (referenced in chapter one) appears to be fueled by years of disadvantage in this area. In a survey of 560 adults with learning disabilities, Chelser (1982) finds that only 44% report receiving career or vocational education and only 17% believe this resulted in obtaining a long term job. In reviewing statistics on vocational training, Okolo and Sitlington (1988) indicate that students with learning disabilities are under-represented in the field of vocational education, despite legislation. They note that those in vocational training are often in programs which underestimate their potential. While their potential may be underestimated by some, Fourqurean et al. (1991) believe their skills may be overestimated by peers, family and community. With such incongruous expectations, confusion and a high drop out rate as cited in O'Connor and Spreen (1988) comes as no surprise.

Student perspective on transition. Dowdy et al. (1990) studied the self-perceived transition needs of 160 high school students (80 with and 80 without learning disabilities). More of the students with learning disabilities were involved in transitional programs; two times as many wanted to enter the job market (whereas two times as many without learning disabilities wanted to go to college); more of the students with learning disabilities were aware of vocational rehabilitation services (however this was still below 50%); and most of these students reported that

their parents provided the majority of the assistance in their career decisions. The students voiced a need for instruction in career exploration, job seeking and independent living skills. The authors concluded that there exists a desperate need for transition issues to be addressed in high school curriculums.

Agency involvement in transition. As students with learning disabilities head toward high school graduation, it seems transition brings with it confusion. Some administrators and teachers are unclear as to where responsibilities lie, and in one study one-third of administrators surveyed did not perceive transition as an important concern of the school district (Halpern, 1985). Even in cases where the school attempts to assist with transition of the student to another agency, only a small percentage of the parents seem to be aware that this service has been provided. But as Haring, Lovett and Smith (1990) point out, one cannot place blame for poor results strictly on public education. It seems the needs of individuals with learning disabilities may not diminish with age but community services do. This is compounded by the student's reluctance to be singled out for the services that remain. Zetlin and Hosseini (1989) believe that some of these students with learning disabilities may be like a generic group with mild disabilities studied by Zetlin and Turner (1984). They avoided further contact with agencies and services to avoid further special needs stigmatization. A negative attitude toward such agencies was confirmed in Chelser's (1982) survey of adults with learning disabilities. One of the major transitional service agencies (Rehabilitation Services Administration) was perceived to be one of the least valuable resources by this sample of adults with learning disabilities. This reluctance toward support services is contrary to the perceived needs voiced by practitioners such as Michaels (1989), who encourage long term on-the-job transitions to assist in the transfer and generalization difficulties of individuals with learning disabilities. Such transition could provide direct facilitation for the employee as well as indirect facilitation through employer and public awareness of the transitional needs of individuals with

learning disabilities. It seems the public and employers hold a variety of misinformation which compounds the vocational difficulty of adults with learning disabilities (White, 1985).

Factors influencing transition efforts. Outcome studies of transitional efforts provide a retrospective view of what facilitated or hindered this process. Goodman (1988) studied lower functioning learning disabled students' transition to independent living. The success rate was influenced heavily by family. Those with unfavorable outcomes tended to come from dysfunctional families (e.g., detached or overly devoted siblings, parent ambivalence, lack of disability acceptance, communication difficulties, overprotection, rigid family structure and problems in conflict resolution). Similarly Rogan and Hartman (1990) conducted a long-term follow-up survey of adults with learning disabilities. One of the key mediating variables in successful outcome was family cooperation, understanding and support.

Research on Vocational Outcomes

After this transition process do the employee and employer find satisfaction with each other? As noted in chapter one, outcome studies have been faced with many methodological difficulties related to heterogeneity, attrition, sampling procedures, a lack of controls, varying definitions of terms, ignoring societal employment trends, and varying intervals of follow up. Zetlin and Hosseini (1989) demonstrated how drastically one's perspective could change dependent on methodology. For example, while a point-in-time perspective may have made their sample of adults with mild disabilities look fairly healthy vocationally, long term follow up did not. While many of their subjects enrolled in higher education and/or were employed, long term follow up enabled them to see that many had dropped out of post secondary courses and only maintained jobs for short intervals. In addition, Gerber (1994) calls into question the utility of any research on adults with learning disabilities which does not consider the life-span or developmental phase of such subjects. In light of such difficulties it would be impossible to generalize current research-

based vocational outcome concerns to all individuals with learning disabilities. While learning disabilities are still there beyond school-age, the extent of their impact is debatable. The successful middle-aged adults in Rogan and Hartman's survey (1990) indicated it was no longer a dominant feature in their lives. However, Gerber et al. (1990) indicate when problems related to a learning disability persist into adulthood they tend to become worse. Adelman and Vogel's (1990) sample (former college students from a comprehensive learning disabilities support program) felt the learning disability had affected their work, but had not prevented graduates from completing job responsibilities. Hoffman et al. (1987) went beyond the individual, and surveyed employers and service providers as well. The authors found a difference in perspective with service providers viewing adults with learning disabilities as having more significant job problems than the adults with learning disabilities did. Employers felt memory problems were a significant obstacle while employers and service providers both identified self-concept problems as a major obstacle more frequently than any other issue.

Findings in vocational outcome research. Discontent and disincentives appear to be prominent themes in the research and literature on vocational outcomes. Individuals with learning disabilities may face under-employment or low paying job options (Dowdy, et al., 1990; Faas & D'Alonzo, 1990; Neubert, Tilson, Ianacone, 1989; Rosenthal, 1989; Zetlin & Murtaugh, 1990). Thirty-six percent of the adults with learning disabilities surveyed by Hoffman et al. (1987) indicated they were in entry level jobs with limited opportunity for salary or position advancement. Some studies even suggest that the type or level of training has little impact on employment success. Fourqurean et al. (1991) found the number of semesters in high school vocational courses did not relate to employment success. Nor did attempts at post-secondary training greatly enhance the employability of former students from a learning disability self-contained model of service (Haring et al. 1990). Hence, it comes as no surprise that some have noted discontent and

dissatisfaction in adults with learning disabilities (Alley et al., 1983; Zetlin & Murtaugh, 1990). Perhaps it is this low employment status together with autonomy-related family issues which maintains a higher level of dependence between adults with learning disabilities and their families (Morrison & Zetlin, 1988; Zetlin & Murtaugh, 1990).

For some a learning disability may mean sporadic or short term employment. Investigating the reasons behind the erratic employment history of some of their subjects Zetlin and Murtaugh (1990) noted job termination due to lying, stealing, excessive work pressures, excessive work, poor treatment and a desire for more hours. Arnault and Black (1988) noted problematic work attitudes in their sample of subjects with learning disabilities. Specific characteristics of concern included conflict with co-workers, arguing with co-workers, talking back to supervisors, frequent absences, and job frustrations. Thus, as it is with the general population, the major impediment to vocational success for adults with learning disabilities may well be due to social skill deficits (Alley, et al., 1983; Cartledge, 1989).

Predictors of vocational outcome. A number of other variables have also been noted to relate to successful vocational outcomes. Rogan and Hartman (1990) found that graduating from high school or college yielded favorable outcomes while the presence of additional disabilities yielded a less favorable prognosis. Faas and D'Alonzo (1990) identified verbal IQ and comprehension (as measured by the Wechsler Adult Intelligence Scale-Revised) as key predictors. Based upon their review of the literature Adelman and Vogel (1990) present the case that vocational success is determined by self understanding. Individuals need to understand how their specific deficits affect their job performance and ways in which they can compensate or select employment weighted heavily on their area of strength. Fourqurean et al. (1991) conducted a telephone interview of 123 students with learning disabilities from four Houston, Texas high schools. They ranged in age from 18 to 23 years, with the average follow up within 2.2 years of

leaving high school. Those students with learning disabilities who were most successful had high math ability, parents who were actively involved in their education, and most were employed during high school. One should not conclude, however, that employment during high school yields future vocational success. There was nothing cited in the study to preclude the possibility that these working students were already more employable upon entering high school. Therefore they gained part-time work while in school and maintained that employability advantage after graduation.

Conclusions regarding vocational outcome research. Despite an emphasis toward research on vocational outcomes, a great deal of confusion exists, particularly when studies seem to be presenting discrepant data. In one of the larger studies on vocational outcomes of adults with learning disabilities, Sitlington and Frank (1990) surveyed a state-wide random sample of 911 graduates and dropouts, one year after graduation. This was done face to face or by phone with the student or an immediate relative. They noted that most of these individuals found jobs by themselves (43%) or by friends and family (40%). Only 6% used the school and 5% used community agencies. The employment rate was better for males (81% versus 66%). Of employed individuals, 70% were full time. There continued to be a heavy reliance on the family as 64% still lived at home and most leisure pursuits revolved around socialization with family and friends. These statistics looked more favorable than those presented by Haring et al. (1990). They randomly selected 64 adults previously from self-contained learning disabilities programs of 12 high schools in a southwestern metropolitan location. The mean age was 21, 60% were males, and they had been out of school from one to four years. In this sample 60% were competitively employed; 31% were unemployed (twice the national average for youth at that time); female unemployment continued to be higher (61% versus 24%); most were not employed full time; and although salaries were low, 87% indicated they were happy with their jobs. There continued to be

a heavy reliance on family and friends as 48% used this network to find jobs and 79% lived at home or with relatives. Differences in the results of these two studies may well be due to the level of special education needs of the samples. The later study was limited to a self-contained population. The poorer prognosis for this group would be predicted by research which suggests better career maturity and development is found with students in less restrictive placements (Cobb & Crump, 1984; Kendall, 1981).

As one reviews the literature on vocational outcome research for individuals with learning disabilities it is possible to find negative or positive outcomes dependent upon the variables considered in the research. Fourquarean and La Court's 1989 study (cited in Fourquarean et al., 1991) reviews the literature and cites 10 variables to give special consideration to when studying the vocational outcomes of young adults with mild disabilities. They include: (a) type of special education placement, (b) graduate versus dropout, (c) high school employment, (d) reading and math levels, (e) intelligence quotient, (f) type of disability, (g) family involvement, (h) gender, (i) high school vocational training and (j) socioeconomic status. In-depth studies of variables, such as socioeconomic status, lend credence to these concerns. A finding of positive or negative vocational outcomes for youth with learning disabilities can be strongly associated with the socioeconomic status of the sample selected (O'Connor & Spreen, 1988).

Despite such problems, Okolo and Sitlington (1988) conclude there are several consistent findings in the literature on vocational outcomes for adults with learning disabilities. These individuals typically find employment at the same rate as peers; tend to be employed part-time, at minimum wage or entry level; usually had little vocational counseling in high school; and often find jobs through family and friends rather than agencies.

Summary

In this chapter an attempt was made to synthesize three diverse but inter-related areas from the literature: career development, family systems theory and learning disabilities. The first part of the chapter explores the integral role of the family in career development. The scope is broadened with the introduction of a systems perspective and its implications for the career development process, particularly career maturity. Interwoven with this discussion is a review of several instruments designed to assess the mode of family functioning and level of career maturity. The latter part of this chapter tailors the information from the first section to a specific group, individuals with learning disabilities. The reciprocal impact of the system and disability is explored from the early years, throughout school, and into the world of work.

Chapter 3

METHODOLOGY

This was an ex post facto study of family influence on the career maturity attitudes of rural high school students with learning disabilities. Specifically, this study sought to explore the subjective family variables of adaptability and cohesion as they related to the subject's career maturity attitudes. The research questions addressed were as follows:

- 1) What percentage of the variance in each of the five areas of career maturity attitude and the career maturity total score (as measured by the CMI-AS) is accounted for by the perceived level of **adaptability** in the student's family?
- 2) What percentage of the variance in each of the five areas of career maturity attitude and the career maturity total score (as measured by the CMI-AS) is accounted for by the perceived level of **cohesion** in the student's family?
- 3) What percentage of the variation in career maturity attitude (as measured by the CMI-AS) is accounted for by the selected **demographic** variables?

Design

Study Sample

The 88 subjects for this study comprised 56% of the 158 invited participants from two rural school systems in western Virginia. The author hoped to apply the information from this research to his daily practice in rural Virginia. Hence, the sample was drawn from that system and a very similar rural system in the same Educational Performance Recognition (EPR) System Band (Henry, McTaggart & McMillan, 1990). EPR Bands are a matching system developed through the Virginia Department of Education. To develop the EPR Bands the State used multiple regression

to match 15 school systems in each band. This was done based on their similarities in eight major areas. These included: (a) upper quartile income, (b) percentage of college graduates, (c) average daily membership, (d) percentage of first graders in the lower quartile of the CoGAT, (e) percentage of students receiving free or reduced lunch, (f) mobility or change in average daily membership, (g) population density, and (h) local wealth or ability to pay. One of the purposes was to allow a fair comparison of student performance between similar regions (based on community, school system, and student body characteristics).

The subjects for this study consisted of a purposive sample. The students included all high school students with learning disabilities in grades 9 through 12 for whom consent was obtained to participate. The level of special services for students housed at the high schools ranged from monitoring by the learning disability teacher to a modified self-contained model, 10-15 hours per week. Specific population descriptors can be found in Table 3 and Tables 4 through 6 in Chapter 4. All students had been identified for learning disabilities services by a multidisciplinary team of professionals in psychology, social work, special education, teaching, and the medical field. The results were staffed at a team meeting and placement was determined by group consensus. The guidelines for placement were in accord with the regulations set forth by the Federal government and the Virginia State Department of Education (see Appendices B and C). To operationalize that definition, both counties set forth guidelines interpreting the severe discrepancy aspect of the definition to mean at least one achievement score one and a half standard deviations below the highest ability (or IQ) estimate for an initial learning disabilities placement. Partially remediated students may exhibit less of a discrepancy upon re-evaluation. In both counties the potential achievement areas assessed include: oral expression, listening comprehension, written expression, basic reading skills, reading comprehension, math calculations, and/or mathematics reasoning.

Table 3

Demographic descriptors of subjects

Sample Data by Location						
Descriptor	County A		County B		Combined Totals	
	n	%	n	%	n	%
Participating Students	48	54.5	40	45.5	88	100
Sex						
Male	37	77.1	27	67.5	64	72.7
Female	11	22.9	13	32.5	24	27.3
Race						
Caucasian	47	97.9	30	75.0	77	87.5
African-American	1	02.1	10	25.0	11	12.5
Age						
Mean	16.8		15.9		16.4	
Range	5		4		5	
Standard Deviation	1.27		1.64		1.27	
Current Grade						
Mean	10.4		9.8		10.1	
Range	3		2		3	
Standard Deviation	1.03		0.80		0.98	
Grade Entering						
Special Education						
Mean	2.6		3.8		3.2	
Range	12		10		12	
Standard Deviation	2.47		2.34		2.47	
Number of Retentions						
Mean	0.96		0.7		0.84	
Range	3		2		3	
Standard Deviation	0.77		0.72		0.76	

Setting of the Study

A portion of the students used in this study came from the three high schools in County A, a rural school system in northwestern Virginia. The county's population as per the updated figures from the 1990 census was 31,636 with a school membership of 4,923 and a school enrollment of 5,017 students as of December, 1992. There were four major towns in the county, the largest of which had a population of 3,276 as of 1990. The major sources of employment were manufacturing, retail trade, government/public services, communication/transportation/utilities, agriculture, and construction, in that order.

The other portion of the students used in this study came from the one high school in County B, another rural Virginia school system. This system is located in the southwestern sector of the state. It was chosen due to its similarity to the first school system (based on the Virginia State Department of Education's Educational Performance Recognition Band). The County's population as of the 1990 census was 39,549 with a school membership of 6,162 and an overall school enrollment of 6,395 students as of December 1992. There were two major towns in this county, the largest of which had a population of 4,098 (as of 1990). The major sources of employment were manufacturing, wholesale and retail, government, services, construction, transportation, public utilities, finance, insurance, and real estate, in that order.

Instrumentation

Two formal instruments were used to collect the majority of the data for this study. They included: the Family Adaptability and Cohesion Scale II (FACES II) and the Career Maturity Inventory - Attitude Scale (CMI-AS). Although both of these instruments have been used in studies of individuals with learning disabilities, neither of them was designed specifically for this population. A complete review of the psychometric properties of these instruments can be found in Chapter Two. By way of summary, the technical information on the instruments suggests a reliability rating of .83 for the FACES II cohesion scale and .80 for the adaptability scale. Concurrent validity estimates were a .93 and .79 respectively. The clustering of factors for the CMI-AS subscales has been supported by factor analysis but not by validation against external criteria. The internal consistency reliability estimates for the CMI-AS Form B-1 ranged from .50 to .72.

Data Collection

Permission to conduct this study was solicited from the Human Subjects Review Board of the University. A copy of that information is included in Appendix D. Permission for student participation was then solicited from participating school divisions (see Appendix E). The student data gathered in this study were offered to the division as a component of the vocational assessment, preparation, and planning process for these individuals. Parents of all eligible students or emancipated students who were of legal age (18 years or older) were notified of the study either in person by the learning disabilities teacher or by mail (see Appendix F). Those who had not responded to the permission request within ten days were mailed a second request. If they had not responded in five days they were contacted by phone to determine the status of their participation. As an incentive to return their permission forms students in each county were offered a pizza lunch if they were the first class to return all of their forms signed (affirming or denying consent).

The CMI-AS and FACES data were collected by the learning disabilities teachers in cooperation with the author. Prior to collecting data, a field test of the procedures and adapted instruments was conducted using a special programs teacher and two eighth grade learning disabled students. The students completed the battery within the expected time limits and had no difficulty with the directions as presented in the script. The teacher found the script useful and easy to follow. Next, all teachers participating in the actual study were given an explanation of the research, a script of task directions (see Appendix G), and a demonstration of the administration techniques to be utilized. These included procedures recommended in the test manuals, and adaptations by this author. The adaptations included an overhead of each instrument, to be displayed as a visual aid while items were being read to the group. They also included a change which allowed recording of responses to the CMI-AS beside the question (eliminating a potential source of error, the need for transfer of responses to an optical scan sheet).

At the conclusion of the teacher training sessions there was ample opportunity for the teachers to ask questions. Once comfortable with the procedure, a schedule was set so one of the teachers and the author could meet with students in the learning disabilities room in small groups. To insure close monitoring, the pupil to adult ratio never exceeded one adult per five students. The CMI-AS, and the FACES-II Scale were completed by each student. The students had the instruments before them while the teacher read the items from the overhead to the group. The sequence of test administration for each group was alternated to balance for possible order effects.

The basic demographic data required by this study were compiled by the researcher utilizing the school records, and teacher interview. Most of the information was available through the student's psychological report, social history, individualized instructional program, eligibility minutes, or cumulative folder. Teacher input was sometimes needed to determine the student's vocational preparation level.

Data Analysis

Each student was given a code number to assure anonymity. Raw scores from the FACES-II and CMI-AS together with the demographic and descriptive data collected were analyzed utilizing The Number Cruncher Statistical System - Version 5.03 (Hintze, 1990). Appropriate descriptive statistics were calculated to assist with sample description; the data were examined for non-linear trends to insure that a linear analysis was best suited for this study; a preliminary analysis helped to determine the best variables for inclusion in the final equations; and multiple regression was used to examine the major research questions associated with this study.

An incremental stepwise procedure was chosen so that the independent variable which produced the greatest variance in career maturity attitudes entered the equation first. The computer held that variable out of the equation while it sought out the variable responsible for the next

greatest variance. This continued until all of the variables which significantly impacted upon the criterion were included in the equation.

Summary

This study was designed to help gauge the effects of family adaptability and cohesion on the career maturity attitudes of rural high school students with learning disabilities. A non-random sample was chosen from two rural Virginia school divisions within the same Educational Performance Recognition (EPR) band to provide a sufficient N utilizing a relatively homogeneous sample.

After the proper permissions were secured, students with learning disabilities (grades 9-12) were seen in small groups with an adult / student ratio no greater than 1 to 5. The FACES-II and the CMI-AS were completed by each student. Both were presented orally and visually to help compensate for learning problems. Data were compiled for computer analysis utilizing multiple regression strategies to examine the main research questions.

Chapter 4

RESEARCH RESULTS

This chapter provides a comprehensive review of the sample, statistical methods, and statistical results utilized to respond to the three research questions posed in Chapter I of this document. They include:

1) What percentage of the variance in each of the five areas of career maturity attitude and the career maturity screening score (as measured by the CMI-AS) is accounted for by the perceived level of **adaptability** in the student's family?

2) What percentage of the variance in each of the five areas of career maturity attitude and the career maturity screening score (as measured by the CMI-AS) is accounted for by the perceived level of **cohesion** in the student's family?

3) What percentage of the variation in career maturity attitude (as measured by the CMI-AS) is accounted for by the selected **demographic** variables?

Description of Sample Characteristics

Demographics

A total of 94 students attained parent consent and participated in the study. Data from five of those students had to be excluded from the final analysis as the students did not meet a criterion established for participation in the study. Of those students four were eighth graders and the fifth was a student who was classified as functioning in the educable mentally retarded range. The cooperating teachers invited them to participate, feeling that the results may be useful in their transition planning. Data from a sixth student was incomplete as the student refused to complete the CMI-AS. As per the consent form used with this study, his decision was honored. This left a total of 88 eligible students to serve as the non-random sample for this study.

A breakdown of selected demographic descriptors of this sample can be found in Table 3, located in Chapter III. It indicates that participants included a large percentage of males (64 males to 24 females) as one might expect given the higher ratio of males to females in the general population of students with learning disabilities. Ethnic diversity was limited in the rural settings, thus the majority of participants (87.5%) were Caucasian and the remaining 12.5% were African-American. One of the biggest discrepancies between participating counties came in this area. Only 2.1% of the County A's sample was African-American while this group constituted 25% of the County B's sample.

Participation rates from County A included 74% of the 65 eligible students, while in County B 43% of the 93 eligible students chose to participate. In the return data from County A it was observed that 11% of those returning their forms declined to participate. Three other students (5%) had signed permission forms, but were absent on the days of data collection. Despite numerous attempts to re-schedule a convenient time cooperation could not be elicited. This yielded a total response rate of 89% for County A. Due to confidentiality and distance, the permission slips in County B were processed by a teacher within that system and the return information was tabulated differently. Hence, a similar breakdown was not available to help delineate the 57% of eligible students who did not participate in that county. Anecdotal records from both counties indicated that the most common reason given for non-participation was a lack of interest on the part of older students who felt they had already made sufficient vocational plans. The second most common reason was a concern about students facing another form of assessment after some had completed another vocational evaluation that year, and when most were facing final exams in a few weeks.

Psychoeducational Characteristics

The ability/achievement descriptors of the sample are featured in Table 4. Since identical evaluative measures were not used in both counties and some students transferred from other locations, the reader should review the operational definitions of these measures in Chapter I. In all but two cases Wechsler ability scores were available on participating students. Greater variability existed in the achievement measures. For reading and math County A typically utilized the Kaufman Test of Educational Achievement - Brief Form (K-TEA) while County B typically utilized the Wide Range Achievement Test - Revised (WRAT-R). One of these two scores was available for all but five students as a measure of reading achievement and for all but six students as a measure of math achievement. Written language scores consisted of the spelling subtest score from the KTEA, WRAT-R or Test of Written Language (TOWL). Only three students required substitution of a spelling score from another measure.

As seen in Table 4, little difference in psychoeducational characteristics was noted between the counties. The typical student evidenced Average to Low Average verbal and performance ability scores. Their mean written language and reading scores fell in the lower end of the Low Average range with math scores in the middle of the Low Average range. The mean ability/achievement discrepancy (difference between the highest IQ score and lowest achievement score) was 22.8 standard score points. Thus, the weakest achievement scores fell approximately 1 1/2 standard deviations below the student's scores on the most commonly used ability measure, the Wechsler Scales.

Table 4

Ability/Achievement Descriptors of Sample

Ability/Achievement Area	Sample Data by Location		
	County A	County B	Combined Totals
Intelligence Quotient:			
Verbal mean	92.7	92.4	92.5
Range	57 - 125	65 - 119	57 - 125
Standard deviation	14.34	13.72	13.98
Performance mean	94.5	92.1	93.4
Range	58 - 128	68 - 111	58 - 128
Standard deviation	17.4	11.43	14.99
Reading Achievement			
Mean standard score	83.5	84.3	83.9
Range	55 - 127	60 - 115	55 - 127
Standard deviation	13.89	14.29	14.0
Math Achievement			
Mean standard score	88.1	84.8	86.6
Range	40 - 124	60 - 107	40 - 124
Standard deviation	15.95	12.69	14.57
Written Language			
Mean standard score	81.4	81.8	81.6
Range	61 - 118	64 - 105	61 - 118
Standard deviation	13.48	11.81	12.68
Ability/Achievement Discrepancy			
Mean difference	24.6	20.65	22.8
Range	2 - 54	-12 - 47	-12 - 54
Standard deviation	13.13	13.07	13.18

Learning Disabilities Characteristics

As can be seen in Table 5, the most common skill deficit depicted for the students sampled was in the area of written language skills (44.3%). Interestingly, while the Special Education Policy Manuals of both counties (see Appendices B and C) specify that seven potential areas of skill deficits exist within their definitions of learning disabilities, the data revealed that no students from this sample had been identified as learning disabled due to oral expression or listening comprehension deficits. This may be due to the fact that many of these students were identified years before (as seen in Table 3, most of the participants were identified for special education services somewhere between the second and third grades) when there were fewer and less sophisticated instruments designed to assess skills in these areas. Table 5 goes on to show that the most common processing deficit for this sample of students was in the visual motor channel (45.5%). At the time of this study the majority were receiving between 1 and 10 hours per week of learning disabilities resource assistance.

Table 5

Learning Disabilities Characteristics of Sample

Characteristic	Sample Data by Location					
	County A		County B		Combined Totals	
	n	%	n	%	n	%
Skill Deficit						
Reading skills	10	20.8	9	22.5	19	21.6
Reading comprehension	4	08.3	8	20.0	12	13.6
Math calculation	4	08.3	5	12.5	9	10.2
Math reasoning	4	08.3	5	12.5	9	10.2
Written language	26	54.2	13	32.5	39	44.3
Processing Deficit						
Visual-motor	18	37.5	22	55.0	40	45.5
Memory	11	22.9	4	10.0	15	17.0
Ability to conceptualize	2	04.2	0	00.0	2	02.3
Auditory processing	12	25.0	8	20.0	20	22.7
Perceptual organization	5	10.4	3	07.5	8	09.1
Organizational skills	0	00.0	2	05.0	2	02.3
Visual perception	0	00.0	1	02.5	1	01.1
Service Level						
Monitor	6	12.5	10	25.0	16	18.2
Up to 10 hours/week	40	83.3	29	72.5	69	78.4
10 to 15 hours/week	2	04.2	1	02.5	3	03.4

Career Preparation of Sample

In terms of vocational preparation, 92% of the sample had some form of vocational assessment. While the majority of County A's students (95%) were assessed locally, most of County B's students (85%) had undergone an outside vocational assessment, typically through the Woodrow Wilson Rehabilitation Center and/or the Department of Vocational Rehabilitation. Out of the total sample the majority of the students (59.1%) were noted to have had some form of job experience (e.g., work study, cooperative education, job training, summer employment, or outside employment). An examination of the curriculum preparation of the sample revealed a total of 26.1% of the students were considered to be in a college preparatory track, with some of those students having vocational courses as well. Approximately 23.9% of the sample had no vocational course work by the time they participated in this study. The remaining 76.1% had vocational course work and were classified in one of three categories. At the beginning level, 25% were "Samplers". This group consisted of students with one vocational class in any occupational area, with no plans to follow up with further course work in that area. The second level was depicted as "Limited Concentrators". They accounted for 12.5% of the sample. This included ninth graders with one vocational class who were signed up for a second class in the same area or upper classmen who were signed up for or taking a second class in the same area. The highest level was referred to as "Concentrators". This group consisted of students who had at least two courses in an area and were signed up for a third; students in their final year of a program; or students who completed a vocational program. This group accounted for 38.6% of the sample.

Family Characteristics of Sample

Since the family plays a vital role in this research, Table 6 provides descriptors related to the family environment of the students at the time this study was conducted. The majority were living with at least one biological parent (93.2%); 61.4% were from intact families; 38.6% of the

families were noted to be experiencing (or had experienced) significant environmental stressors. Data on the family constellation indicate 32.1% of participants had at least one sibling in special education. The majority of participants in the study were either first born or youngest. Data pertaining to their socio-economic status were gathered from a variety of perspectives as can be seen in Table 7. It seems that 22.7% of participants sought and qualified for free or reduced lunch. In only 1.1% of the homes no adult was employed, while the remaining 98.9% had at least one adult gainfully employed. The data available on parent educational level indicated that the majority of mothers and fathers terminated their education somewhere between the sixth grade and high school graduation.

Table 6**Family Descriptors of the Sample**

Variable	Sample Data by Location					
	County A		County B		Combined Totals	
	n	%	n	%	n	%
Family Status						
Intact	25	52.1	29	72.5	54	61.4
Single Parent	10	20.8	4	10.0	14	15.9
Blended	13	27.1	7	17.5	20	22.7
Family Type						
Biological	44	91.7	38	95.0	82	93.2
Adoptive	1	02.1	1	02.5	2	2.3
Guardians	3	06.3	1	02.5	4	4.5
Family Problems						
No	26	54.2	28	70.0	54	61.4
Yes	22	45.8	12	30.0	34	38.6
Siblings in Special Ed						
No	29	65.9	28	70.0	57	67.9
Yes	15	34.1	12	30.0	27	32.1
Birth Order						
Only	2	04.2	2	05.0	4	04.5
First	14	29.2	17	42.5	31	35.2
Middle	12	25.0	10	25.0	22	25.0
Youngest	20	41.7	11	27.5	31	35.2

Table 7**Socio-economic Status of Families**

Variable	Sample Data by Location					
	County A		County B		Combined Totals	
	n	%	n	%	n	%
Mother's Education						
6 - 12	14	32.6	9	22.5	23	27.7
HS Grad	20	46.5	22	55.0	42	50.6
Advanced training	8	18.6	2	05.0	10	12.0
College degree	1	02.3	7	17.5	8	09.6
Father's Education						
K - 5	0	00.0	2	05.9	2	02.9
6 - 12	13	38.2	9	26.5	22	32.4
HS Grad	16	47.1	16	47.1	32	47.1
Advanced training	4	11.8	2	05.9	6	08.8
College degree	1	02.9	5	14.7	6	08.8
Family employment						
None	1	02.1	0	00.0	1	01.1
1 of 2 employed	12	25.0	9	22.5	21	23.9
Both employed	29	60.4	27	67.5	56	63.6
1 of 1 employed	6	12.5	4	10.0	10	11.4
Free Lunch						
Free	5	10.4	10	25.0	15	17.0
Reduced	5	10.4	0	00.0	5	05.7
Full cost	38	79.2	30	75.0	68	77.3

Response to Research Questions

Question One

What percentage of the variance in each of the five areas of career maturity attitude and the career maturity screening score (as measured by the CMI-AS) is accounted for by the perceived level of adaptability in the student's family?

To answer this question each of the six subscales associated with the CMI-AS were considered independently in one of six stepwise regression equations. Here the student's adaptability and cohesion scores were regressed on each of the CMI-AS subscores to determine how much (if any) influence they contributed to the variance in each of the scores. Table 8 shows the results of this procedure.

Adaptability scores entered the equations as a significant contributor on two occasions. In the 10 item Orientation to Career Decision Making Scale, adaptability was noted to account for 4.3% of the variance in the score. This was a negative correlation suggesting that the lower adaptability scores (i.e., perceived rigidity in the family) tended to be associated with higher orientation scores on the CMI-AS. Adaptability also accounted for 3% of the variance in the 50 item Career Maturity Screening score. This again was a negative correlation with lower adaptability scores associated with higher screening scores.

Interestingly, on both of these equations, when adaptability scores were entered alone they added little to the career maturity subscale (less than 1% of the variance). It was only in conjunction with the cohesion score that adaptability made a significant contribution to the equation. This suggests an interaction effect between the perceived levels of adaptability and cohesion in a family which affects the expression of these two aspects of career maturity (represented by the orientation and screening scores).

Table 8

Stepwise Regression Results for Adaptability Equations

Standardized regression coefficient	R ² change when variable added or removed	Did adaptability contribute enough to enter this equation?	Did cohesion contribute enough to enter this equation?
CMI Screener			
-0.22	0.030	yes	yes
Decisiveness			
-	0.005	no	no
Involvement			
-	0.000	no	yes
Independence			
-	0.004	no	no
Orientation			
-0.26	0.043	yes	yes
Compromise			
-	0.004	no	no

Question 2

What percentage of the variance in each of the five areas of career maturity attitude and the career maturity screening score (as measured by the CMI-AS) is accounted for by the perceived level of cohesion in the student's family?

The technique utilized to derive the answer to this question was identical to that described in the response to research question one. The statistical procedure was done simultaneously, with both adaptability and cohesion entered into a series of six stepwise multiple regression equations. The objective was to look at the relative impact of adaptability and cohesion on the subscales of the CMI-AS. Cohesion appeared to be a stronger contributor to the equations than adaptability. It entered both of the equations that adaptability entered. It also entered a third equation accounting

for 4.1% of the variance in the student's score on the Involvement in Career Decision Making Scale. On the two equations it entered with adaptability, cohesion accounted for a greater amount of the variance. It accounted for 7.5% of the variance in Orientation to Career Maturity and 9.5% of the variance in the Career Maturity Screening score. Again the interaction effect of adaptability and cohesion were noted. On both of these subscales of the CMI-AS, when adaptability was omitted from the equation, cohesion contributed less (3.5% and 6.6% respectively). While regressions which included the adaptability scores all resulted in negative correlations, inclusion of the cohesion scores in the equations produced only positive correlations. Thus, the greater the cohesion in the family unit, the higher the student's CMI-AS subtest score was in each of the three subscales mentioned above. The results of this analysis are reported on in Table 9.

Table 9

Stepwise Regression Results for Cohesion Equations

Standardized regression coefficient	R² change when variable added or removed	Did adaptability contribute enough to enter this equation?	Did cohesion contribute enough to enter this equation?
CMI Screener			
0.39	0.095	yes	yes
Decisiveness			
-	0.006	no	no
Involvement			
0.20	0.041	no	yes
Independence			
-	0.009	no	no
Orientation			
0.35	0.075	yes	yes
Compromise			
-	0.024	no	no

Question 3

What proportion of the variation in career maturity attitude (as measured by the CMI-AS) is accounted for by the selected demographic variables?

A wide array of data was collected to address the research questions and descriptive requirements of this study. The choice then had to be made as to which elements of the data would best represent the specified areas of interest, and therefore should be included in the statistical analysis. All areas considered for inclusion were either noted in the literature to potentially have a significant impact on career maturity or they were less explored family variables pertinent to the research questions. The complicating factor was that several areas of interest could be represented by more than one variable in the data. For example, while the literature depicted socio-economic status as an important dimension of the family which may impact on career maturity scores, a variety of SES related variables were collected and available for the analysis. Since the number of independent variables was limited by the sample size, the task became one of deciding which variables might best represent an area of interest and serve as the best choices for inclusion in the final equation. In the SES example, potential variables might include father's education level, mother's education level, employment status of family members, or free/reduced lunch participation. The NCSS Statistical Program (Hintze, 1990) has a subprogram specifically designed to address such issues in its Power Pack. This program is entitled the Regression Variables Selection Procedure. Here an algorithm is used to find the best single predictor variable, then it checks to see what variable adds the most to its predictive powers. The program drops and adds variables, trying a variety of combinations, and sequencing combinations by the amount of relative changes they make in the R-Squared or Wilk's Lambda value. Thus, the program output consists of combinations of the entered variables beginning with the single variable which has the greatest impact on the R-Squared value, going on to the pair of variables with the largest influence,

then to the trio of variables and so forth until all variables are entered. The NCSS manual suggests selecting for the regression equation the last subset of variables that still makes an appreciable gain in R-Squared (a gain of 1% or better).

To carry out this procedure the data were first clustered into five areas potentially influential on career maturity. This included data on family variables, vocational preparation, ability/achievement scores, learning disability characteristics, and personal attributes or demographics. A correlation matrix was done for each grouping to determine if excessive collinearity (.7 or above) existed within the variables chosen for the grouping (as collinearity would interfere with accurate statistical analysis of the data). In two situations this was the case. As one would expect, the full scale IQ was collinear with the verbal and performance IQ'S, hence, it was dropped from the analysis. In the area of personal demographics the variables of age and grade were collinear. Each variable was then tried separately in a regression equation to determine which contributed the most. That variable, age, was retained for use in the final analysis.

Each of the five clusters of variables was then entered into the Variable Selection Program. As per the program structure, variables were selected for inclusion in the equation based on the amount of variance they accounted for in the dependent variable. Once all five subsets of variables were analyzed a total of 11 potential variables remained as possibilities for the master equation. Those 11 variables were grouped in a correlation matrix and examined for collinearity, but no ratings above .7 were found. Hence all 11 were entered into the Variables Selection Program. After a combination of eight of those variables had entered the equation 32.4% of the variance in career maturity attitudes (the screening or composite scale) was accounted for. When a ninth variable was added the gain in the R-Squared value was .001, as now 32.5% of the variance was accounted for. With this minimal gain in R-Squared, the variable selection was stopped at the subset of eight variables.

For regression analysis NCSS recommends a ratio of five subjects per independent variable. Other sources suggested more conservative ratios such as 10 to 1. Hence, with a sample size of 88, using a total of 8 independent variables would fall within acceptable parameters. Thus, a final variable selection procedure was needed adding the FACES scores of adaptability and cohesion to the eight variables already selected from the clusters to determine if one or both FACES scores merited inclusion among the final eight variables selected for the regression analysis. First a final correlation matrix was done. It revealed no large inter-correlations between the eight selected variables and the FACES subscales. When the variable selection procedure was run on this pairing of 10 variables, cohesion entered the equation on the third pairing and remained in all of the following equations as all nine variables entered. Adaptability entered on the fifth pairing of variables and remained in for all other pairings. By the time eight variables were included 36.5% of the variance was accounted for in the CMI-AS screening score. Addition of the ninth variable resulted in less than a 1% gain, hence, the manual would suggest stopping with the eight variable set anyway. Figure 2 depicts the results of the variable selection program for each of the five cluster areas and on the two refinements of the master equation.

Variables Analyzed	Variables Selected for Inclusion	R ²
Personal demographics cluster	Retentions, Race	.179
Family cluster	Sibs in special ed., parent involvement in IEP, Intact/broken home, Birth order	.068
Vocational preparation cluster	College prep curriculum	.023
Ability/Achievement cluster	Verbal IQ, Performance IQ, Written language score	.186
LD characteristics cluster	Ability/Achievement discrepancy	.038
Composite of five clusters	Retentions, Race, Parent involvement in IEP, Intact/Broken home, Birth order, Verbal IQ, Written language score, Ability/Achievement discrepancy	.350
Master equation (composite variables with adaptability and cohesion)	Adaptability, Cohesion, Retentions, Race, Intact/Broken home, Birth order, Written language score, Ability/Achievement discrepancy	.365

Figure 2. Results of the Variable Selection Procedure

A multiple regression was run on the final 8 variables of the master equation to determine how much of the variance they accounted for in the Career Maturity Attitude Screener scores and which of these variables had the greater impact. The results are summarized in Table 10.

Table 10

Multiple Regression Report

Independent Variables	Regression coefficient	Standardized Beta weights	Standard error	Sequential R ²	Simple R ²
Intercept	13.71		5.61		
Adaptability	-0.88	-0.145	0.72	0.0006	0.0006
Cohesion	0.13	0.298	0.05	0.0954	0.0657
Retentions	-1.37	-0.196	0.68	0.1786	0.1207
Race	-3.84	-0.242	1.45	0.2509	0.0798
Intact/Broken home	1.37	0.127	0.98	0.2762	0.0161
Birth order	0.78	0.128	0.57	0.2800	0.0024
Written language score	0.14	0.344	0.05	0.3003	0.0432
IQ/Achievement discrepancy	0.13	0.316	0.04	0.3647	0.0376

To help conceptualize the relative importance of the eight selected variables to the individual's total CMI Screening score one needs to look at the magnitude of the absolute value of the beta weights. These standardized regression coefficients suggest that the written language score carries the greatest influence in the equation, with ability/achievement discrepancy, cohesion score, race, number of retentions, adaptability score, birth order, and family status following, in that order. Five of the eight showed a positive relationship with career maturity. This indicated that higher Career Maturity Screening scores were likely for students who were the later born siblings; came from single parent or blended homes; performed better on written language measures; exhibited larger gaps between ability and achievement scores; and perceived their home backgrounds to be more cohesive. The negative relationship between the CMI Screener score and the number of retentions, perceived family adaptability, and race, suggests higher career maturity for students who had fewer retentions, perceived their home as more rigid, and were Caucasian.

The reader is directed to the column in the table entitled "Simple R^2 " to examine the proportion of variance within the CMI Screener score that each of the variables would contribute if they were the only variable in the equation. In contrast, the "Sequential R^2 " column shows the incremental proportion of variance accounted for in career maturity as each independent variable is added to the equation. In contrasting the two columns, one will see (as noted earlier in this chapter) that some of the variables seem to interact, making a different contribution to the equation when entered together than when entered separately (e.g., cohesion with adaptability). Ultimately the combined effect of all eight variables in this regression equation yielded an R-Squared value of 0.3647. This suggests that the combination of these variables accounted for 36.5% of the variance in the Career Maturity Screener score of the students in this sample.

Chapter 5

CONCLUSIONS, DISCUSSION, AND RECOMMENDATIONS

This chapter includes major conclusions to be drawn from the research, a discussion of potential implications, and recommendations for future research. Since this was a purposive sample the statistical procedures used were to aid in understanding the descriptive characteristics of this sample, not as a basis of inference to a larger population. The preface to the Discussion section of this chapter contains information of particular importance in establishing the framework for interpreting these results.

The focus of this study has been on influential factors affecting the career maturity attitudes of rural high school students with learning disabilities. A variety of variables were studied in each of the following areas: personal demographics, learning disability characteristics, ability/achievement levels, vocational preparation, and family characteristics. Variables from each of the clusters were entered into a variables selection program designed to depict the best combination of variables for use in a multiple regression equation. The selected variables from all of the clusters were then jointly entered into a final variable selection procedure. The eight top contributors were included in a multiple regression equation to determine their relative importance to career maturity attitudes.

In light of the author's specific interest in the impact of family dynamics on the functioning of students with learning disabilities, six stepwise multiple regression equations were also run. These equations examined the impact of perceived adaptability and cohesion within the family on each of the six subscales of the CMI-AS.

Conclusions

The following conclusions were drawn for this rural sample of students with learning disabilities:

1) Research questions one and two examined the impact of adaptability and cohesion on the career maturity attitudes of high school students with learning disabilities, while question three examined the impact of these structural variables in comparison to a wide array of other variables. The findings indicate that these structural family variables were important elements in the career attitudes of this sample, and warrant further consideration from researchers in understanding the career development of individuals with learning disabilities. This conclusion was based on the fact that adaptability and cohesion were 2 of 8 variables selected for the final equation out of a potential pool of 27 variables, many of which have been more commonly chosen for such research. The other finding to support the importance of these family structure constructs was that slightly over 10% of the variance in career maturity attitudes was accounted for by adaptability and cohesion when entered into the equation together.

2) Adaptability and cohesion appear to interact and need to be considered together, not just independently in future research. By itself the findings show that adaptability accounted for very little of the variance in the students' career maturity attitudes (less than 1%). As such it was below the level recommended for continuation in a Variable Selection Procedure. When considered with cohesion, however, there was a gain of almost 3% in the R-squared value. This is 3% which would not have been accounted for had the variables been considered independently and adaptability dropped from the equation.

3) Some of the important contributors to career maturity attitudes of these students (e.g., adaptability and cohesion) are dynamic variables which are subject to counseling interventions. Gerber, Ginsberg and Reiff (1992) refer to such variables as "Alterable variables" and prize them

as research variables since they are susceptible to change. Many of the variables previously considered by such studies were static by nature. Hence, a career counselor might have known that socio-economic status, intelligence, or other such variables were important elements of a student's career maturity, but this would not have a significant bearing on the career counseling process. There would be nothing that a career counselor could do to effect a change in these areas. A career counselor could, however, utilize a family systems approach to counseling to help re-engage family members whose disengagement may be contributing to an impasse in the students career development. Hence, if structural variables such as adaptability and cohesion continue to garner support in future research, college preparatory programs training professionals to assist in career counseling and development may need to add family counseling and systems theory to their program of studies.

Discussion

The reader is encouraged to review the limitations, delimitations and working definition of terms supplied in Chapter I to understand the features of this study which provide the context in which this data should be interpreted. Issues such as the self-selection bias of a sample choosing to participate may be an important consideration. For example, a distinct difference in participation occurred in schools where the researcher was known to families in light of employment duties. The two schools where the researcher was known participated at a rate of 78 and 88%. The two remaining schools, however, had a participation rate of 33 and 43%. It would appear quite possible that the motivation for participation was different for at least a portion of these two groups. This could result in a variety of extraneous factor effecting the data in undetermined ways.

Another area of concern stems from compromises necessary to conduct such research in a public school setting. School officials are rightfully concerned about the intrusiveness and time demands of such research on their students. Hence, whenever possible, variables of interest had to

be defined using pre-existing file data. This placed constraints on some of the variables. For example, global measures of written language skills were not available on many of the students. To obtain a common sample of written language skills across counties this variable had to be defined in a restricted and very narrow manner, consisting of student scores on standardized measures of spelling skills. The instruments chosen to measure such skills also varied between the schools, so while the most comparable measures were selected for inclusion, differences in the validity of these instruments produced more limitations in the interpretation of the data. Within this framework the following section offers a review of the impact that the major variables within this study had on the career maturity attitudes of this sample.

Impact of Family Dynamics on Career Maturity Attitudes

Cohesion

The perceived level of cohesion in the family did contribute to the maturity of career attitudes in this rural sample of individuals with learning disabilities. Cohesion scores contributed to the variance in career maturity attitudes on three of the CMI-AS sub-scales. In theory, when the family is lower in cohesion, members are disengaged from one another. They tend to be very autonomous with little bonding between members. In the Circumplex Theory the more disengaged the family is rated, the more dysfunctional it is believed to be (Olson, 1989). The results of this research suggest that disengagement corresponded to less mature career attitudes in this sample. With the current linear interpretation of the FACES II (Olson & Tiesel, 1991), higher cohesion scores imply a more functional family, supportive of each other's needs. This state correlated with more mature career attitudes on the part of the students in this sample. This is not to suggest that extreme cohesion (enmeshment) should be considered conducive to career maturity. In the recommended linear interpretation of the current FACES scale the highest possible cohesion scores are believed to truly reflect a mid-range value on the cohesion continuum. This mid-range is

considered to be a healthy or functional state. When the FACES revision is complete and the instrument proves capable of assessing scores beyond the mid-range, toward the enmeshed end of the continuum, this too would be considered dysfunctional and may not prove conducive to enhanced career maturity attitudes.

This low cohesion - low career maturity relationship seems to be supported by the available research in this area. Studies show students with learning disabilities tend toward lower career maturity attitudes (Bingham, 1980; Kendall, 1981) while other studies suggest a tendency of families of students with learning disabilities to lean toward family disengagement (Amerikaner & Omizo, 1984; Michaels & Lewandowski, 1990; Perosa & Perosa, 1982). Hence, this proclivity toward disengagement may be an indicator of family conditions which are counter-productive for career maturity attitudes, at least in students with learning disabilities.

Adaptability

The theoretical interpretation of the adaptability scale is similar to that of the cohesion scale. Low values (rigidity) would be considered dysfunctional while high values would be considered mid-ranged (by linear interpretation) and functional. Interestingly, the negative relationship of adaptability and career maturity attitudes suggests that the less functional state of rigidity may in fact correspond to higher career maturity attitudes. However, in this study adaptability only made a significant contribution when it interacted with the level of cohesion in the family. The adaptability score never entered any of the equations by itself without cohesion entering as well. Often, by itself, adaptability contributed little to the known variability in career maturity attitudes. Hence, when family members were perceived to be more linked or supportive, some rigidity or inflexibility in their style seemed to be a positive indicator relating to stronger career maturity attitudes in these adolescents with learning disabilities. In contrast families who

were perceived to be rather disengaged but flexible tended to nurture less mature career attitudes in these students.

Cohesion/Adaptability Interaction

Beyond the general impact on the composite or screener score, both adaptability and cohesion entered the equation as important variables on the Orientation scale of the CMI-AS. This implies that students who perceived a cohesive and rather rigid family setting, tended to be more aware of what needs to be done to make a career choice. Those with a perception of less cohesion and more flexibility in their homes tended to be naive in knowing how to prepare for and explore career possibilities. Perhaps within a close family with a rigid (or perceived rigid) style the individual was given more direction and obtained a clearer perspective on what they needed to accomplish at this stage of career development than a similar individual would who came from a situation perceived as quite flexible with few links between family members. It seems disengaged individuals tend toward a perception of low control over the environment (Margalit, Raviv & Ankonina, 1992). Thus, they may provide little guidance on how to prepare for career choices as they perceive it to be a function outside of the child's control. This would also seem to be a rational explanation of another significant finding. The results indicated one other CMI-AS scale, Involvement, showed a significant impact from the perceived style of family interaction. When perceptions of cohesion were high, the students tended to be more active in making their career choices. Disengagement seemed to correspond to passivity in the process.

Of particular interest among these findings was the aforementioned interaction effect of the two FACES variables. It was noted throughout the equations where both adaptability and cohesion entered that a greater amount of variance was accounted for after both entered, rather than the variance accounted for through the isolated effects of each piece. This supports another basic premise of systems theory from which the Circumplex model and its theory of adaptability and

cohesion are derived. That premise being that the whole is greater than the sum of its parts. Forces working in concert with each other are capable of producing greater results than those same forces working in isolation (Bertalanffy, 1962; Nichols, 1984). Thus, while adaptability in and of itself contributed little to most of the equations, it was important to consider it as well because of the combined effect.

Variable Contributions to the Variance in Career Maturity Attitudes

Personal Attributes and Career Maturity

Age. Within the personal demographic data studied, age was chosen to replace grade since there was a strong correlation. While various sources (Crites, 1978; Frary, 1984; Zytowski, 1978) cite a strong relationship between age or grade and career maturity, age was the last of the four variables to enter the equation and it only increased the R-Squared value by .002. Hence age was not selected as an important contributor to the equation. In fact, examining the career maturity Screener scores by age level revealed minimal differences in the mean scores. Contrary to expectations the lowest score was in fact obtained by the oldest group (19 year olds), with a 29.5 average. The highest score was 33, obtained by the 17 year olds in the sample. Thus the different age groups all scored less than one standard deviation (5.27) from the group mean of 32.1.

Race. Statistically, one of the more noteworthy personal attributes entered into the equation was race. On first glance it appeared that Caucasian students with learning disabilities tended to have higher levels of career maturity attitudes than similar students of African-American descent. This confirmed findings noted by Crites (1978) in the CMI Manual. This may, however, be an artifact of the instrument utilized rather than a true ethnic or racial difference. Critics of the instrument such as Zytowski (1978) have portrayed the CMI as having a white, middle class bias. Hence, rather than less mature career attitudes, the African-American subjects may well have been responding to the cultural bias within the instrument, and therefore obtained lower scores. Such

findings should serve as a caution to those wishing to use the CMI. While it has been depicted as the instrument of choice for children with learning disabilities (Baranowski, et al., 1985; Parker et al., 1989) the use of the scale with some minorities appears to be thrown into question. Crites (1978), however, defends its use, saying that within the minority population there is still a developmental gradient evident, showing an increase in career maturity as the students ascend through the grades. He implies that the scores are useful if viewed as a measure of the minority student's own development relative to his own history or that of peers in that minority group. Apparently, however, the scores should not be used to compare minority students to the population as a whole.

Vocational Preparation and Career Maturity

Biller (1985) cited the lack of vocational preparation activities for students with learning disabilities as a major factor in their ultimate lack of career maturity. In keeping with this chain of thought the field has moved toward a focus on transition services to improve vocational outcomes with learning disabled students (Dowdy et al., 1990). A follow-up telephone survey of students with learning disabilities who exited Virginia schools in 1990-1991 indicated that these individuals perceived the most useful transition services to be vocational assessment, vocational classes and career counseling, in that order (Virginia Board of Education, 1993). The three facets of the transition process that were tapped in this study included assessment, vocational (work) experience, and vocational courses/curriculum. While the data herein did not support these three facets of transition as being significant contributors to maturity in career attitudes, the true picture may be confounded for these subjects due to a variety of factors reviewed in the following sections.

Assessment. While Crites (1978) cites examples of how assessment can serve as a catalyst to career development and maturity, prior vocational assessment did not appear to have a significant impact on the career maturity attitude scores of the students in this sample. Students

from the two school systems underwent a variety of forms of vocational assessment, both locally and by outside agencies. Still, those who participated in a vocational assessment did not attain remarkably different CMI-AS scores than those who had no prior vocational assessment. This finding may have been confounded by other factors such as career preparation activities and the type of assessment utilized. With the current emphasis on transition services most of the students (92%) had undergone some form of vocational assessment. The teachers indicated that those who had not had some form of vocational assessment tended to at least have had transition goals addressed in their special programs. These transition plans may have also served as a catalyst to career development, decreasing differences between the assessed and non-assessed groups.

The second and perhaps biggest confounding factor involved the match between the *type* of assessment and the *type* of outcome measure used in this study. The student assessments appeared to be *product* oriented (e.g., How much mechanical aptitude do they show?; What are their visual-spatial reasoning skills like?; etc.). Such assessments may have been less likely to influence their CMI Attitude score, which is a *process* oriented measure of career development.

Experience. Another of the less expected results in this study was the lack of influence of vocational experience (or work experience) on career maturity. Often vocational experience during high school is touted as an important element in vocational expectations and outcomes (Fourqurean et al., 1991; Zingaro, 1983). The lack of influence herein, is perhaps explained in the arguments set forth by Greenberger and Steinberg (1986). They expressed concerns that many of today's vocational experiences are low paying, minimal skill jobs, engaged in strictly to provide discretionary income. In this study all vocational or work experiences were grouped together. Perhaps if the planned vocational experiences of the school's curriculum were distinguished from the types of jobs Greenberger and Steinberg referenced, a difference would be noticed, showing a

trend toward the expected outcome (whereby the experience enhances the career maturity attitudes of the individual).

Curriculums. While vocational course work has been seen as a means by which the student is given practical skills to facilitate transition into the world of work (Chesler, 1982; Okolo & Sitlington, 1988) on the CMI-AS Screener scores students in this study did not demonstrate any significant gain in career maturity attitudes as a result of such course work. This paralleled findings noted by Fourqurean et al. (1991). In their study, the number of semester hours of vocational courses did not relate to employment success. In scrutinizing the current data to determine possible reasons for this outcome two potential elements of conflict did emerge. Among the students depicted as not having vocational course work were some students who had chosen a strict college preparatory curriculum. Hence the non-vocational but college preparatory subset may have off-set any enhancement in career maturity to be found in the hierarchy of students with vocational course work. This possibility was supported by data from the college preparatory variable in this research. Being a part of a college preparatory curriculum was the only form of vocational preparation to make a significant enough contribution to the known variance in the CMI Screener score to justify its use in other equations. However, even the college preparatory variable dropped out before the final equation, leaving none of the vocational preparation variables among the final eight selected for the master equation. The second area of potential conflict was the confounding of grade level with developmental level for this variable. The students in lower grade levels had less opportunity to take vocational courses, hence, had less chance for vocational course work to impact on their career maturity attitudes.

Ability/Achievement Data and Career Maturity

A number of authors have cited a relationship between a student's ability and achievement scores and their career maturity or vocational outcomes (Brown, 1982; Crites, 1978; Faas & D'Alonzo, 1990; Fourqurean et al., 1991; Zytowski, 1978). This research supported that premise.

IQ scores. Of the ability and achievement data entered into the variable selection equation, two of the three variables that were selected as significant contributors to the CMI Screener score involved IQ. When these IQ variables were entered into the equation with other selected variables from all other clusters studied, performance IQ dropped out of the equation but verbal IQ remained. It appears that verbal IQ has a positive relationship with mature career attitudes as it does with other measures of school achievement and success (Sattler, 1992). Specifically, higher verbal IQ corresponds to higher Career Maturity Attitude Screener scores.

Achievement scores. The one achievement factor to withstand the selection process was the student's written language skills (sampled through a spelling measure). This was also the most prevalent area of skill deficit observed in this sample of students with learning disabilities. Hence, the written language score was richer descriptively than the reading or math score was for this sample. Higher written language scores coincided with higher CMI Attitude scores while lower written language scores went along with a trend toward lower CMI Attitude scores.

Learning Disabilities Characteristics and Career Maturity

The presence of a learning disability has been referenced as a factor truncating the individual's career development (Brown, 1982). It has also been noted to exert an impact on the individual's ultimate vocational outcomes (Hoffman, et al., 1987). It appears to be not just the presence of a learning disability but mitigating factors as well which impact on career development. When the presence of a learning disability is accompanied by other disabilities the vocational prognosis is far less favorable (Rogan & Hartman, 1990). Also the intensity of the

disability seems to play a role as better career maturity and development has been observed in students who participated in less restrictive educational settings (Cobb & Crump, 1984; Kendall, 1981). In this study the educational variables which attempted to tap the intensity of the learning disability included the size of the ability achievement discrepancy, the level of service required (monitor through modified self-contained), the grade in which the child entered special education services, and the presence of additional disabilities. The only variable from that grouping to enter the equation was the ability/achievement discrepancy. The greater the split between ability and achievement scores, the greater the career maturity attitude scores of the student. Some of this may relate to an overlap between the discrepancy and IQ variables. As noted previously, higher IQ's relate to higher career maturity attitudes. In turn some of the greatest discrepancies tend to be noted for students with higher IQ scores. Extrapolating the results in the other direction implies that students with lower ability/achievement discrepancies generally exhibit lower career maturity attitudes. This too would make sense from a practitioner's point of view. When there is minimal discrepancy the eligibility committee tends to look toward terminating services unless the student is still much lower in academic functioning compared to his peer group. Hence, by the time students reach the high school level, those who remain in the LD program despite lesser discrepancies may well be those with lower scores in both IQ and achievement. The reasoning herein appeared to be supported by the data. Analyzing the ability/achievement discrepancy scores with the full scale IQ as the filter variable, a total of 28 subjects were found to have an IQ score of 100 or greater. Their mean discrepancy score was 32 points with a standard deviation of 10.96. However, the mean discrepancy score for students with a full scale IQ score under 100 ($n = 60$) was 18.5 with a standard deviation of 11.93. To further examine the discrepancy scores within this sample the reader is referred to Appendix H.

Family Variables and Career Maturity

The family variables considered for inclusion in this study included items that were descriptive, qualitative, and socio-economic as the importance of each of these areas has been illustrated in the literature (Lopez & Andrews, 1987; O'Connor & Spreen, 1988; Rogan & Hartman, 1990; Sitlington & Frank, 1990). Four family variables were selected out of the original nine through the NCSS Variable Selection Procedure (Hintze, 1990). They accounted for 6.8% of the variance in Career Maturity Screener scores. Those four variables included (a) if there were siblings in special education, (b) the percentage of IEP conferences the parents attended, (c) whether the home was intact or divorced, and (d) birth order of the student. The variables of "IEP's attended" and "Siblings in special education" dropped out of the equation when the FACES variables and all the clusters were merged into one equation. In this sample the two family variables that remained in the equation were birth order and intact homes. It seems that younger individuals in the family birth order had higher career maturity attitudes. Perhaps they benefitted from observing their older siblings work through career development issues. Probably more surprising was the finding that students from intact homes scored lower in career maturity attitudes. Wenk, et al. (1994) may have touched on this issue. They concluded "...childhood and ongoing relationships with parents are more telling for the well-being of adolescents than is father presence during childhood." (p. 229). This should be considered in the current context. Previously cited research suggests that the fathers of students with learning disabilities tend toward disengagement (Amerikaner & Omizo, 1984; Perosa & Perosa, 1982). In turn, this study found that disengagement correlated with lower career maturity attitudes. Perhaps in some cases the absence of a disengaged parent allows for more cohesion among the remaining family members, enhancing career maturity attitudes.

Interestingly one of the more common types of family variables used, socio-economic status, did not enter the final equation. What seems most important in this discussion of family variables is the fact that the variable selection procedure together with the beta weights of the independent variables in the regression equation suggested that previously neglected subjective family variables (e.g., adaptability and cohesion) accounted for a greater amount of variability in the maturation of career attitudes than socio-economic status and other objective variables studied. Thus, adaptability and cohesion appear to warrant greater consideration in the future.

Implications and Recommendations

This research supported the importance of the concepts of family adaptability and cohesion in the career development of the adolescents with learning disabilities who participated in this study. It also supported and refuted research on the relationship of selected other variables to career maturity attitudes. Inferentially, however, the results may have limited applicability to settings outside of the two participating counties in light of the non-random sampling procedure. Within the counties the results should also be treated with caution since subject participation depended on the willingness of the students and parents to consent. Thus, a self-selection bias could have contaminated the results. A rich variety of descriptive data was included within this document to help the reader establish the similarities and differences in comparison to his or her specific setting.

Implications and Recommendations for Practitioners

1) This study supported the premise that a family focus may be valuable in career counseling for adolescents with learning disabilities. Since family structures and the importance attributed to them may vary by geographic location, type of family (e.g., intact, broken, blended), ethnic makeup, etc., precise insight as to the impact of families on career development will require further research. In the meantime, however, the family structure should not be overlooked when a

student is at an impasse on their career development. Exploring the career development problem within a family counseling session could shed a great deal of light on what family interaction patterns exist. These patterns are important as they may be defeating the student's steps toward autonomy and career development. Such steps necessitate systemic change, thereby threatening to upset the homeostasis of the system. Thus the family session may reveal major blockades to career development which might not be evident or available for change through conventional one on one counseling practices. One has to be careful, however, that such family approaches are not misinterpreted as a chance to place blame and excuse the problem behavior. As Zingaro (1983) states, all individuals in the system play a role and the client colludes with the family in maintaining the situation. Once systemic patterns are discovered and altered there will be less of a chance for regression as the process has taken the client beyond cosmetic changes in the individual's behavior to a more far reaching systemic change. Now family members can see how familiar patterns of interaction and the inclinations that emerge from them may be subconsciously defeating change and blocking the student's goal attainment.

2) Professionals involved with transition planning for students should be alert to factors within a student's profile which tend to correlate with problems in career maturity. Some risk indicators noted in this sample include: retentions, poor written language skills, small ability/achievement discrepancies, only and eldest children, student perceptions of a less cohesive family environment, and student perceptions of a more adaptable family environment when coupled with perceptions of low family cohesion. As patterns such as these emerge in a student's profile, counselors should take heed and interpret them as a potential warning sign of problems in career maturity attitudes. The greater the number of indicators present, the more seriously the case should be considered for careful review and possible intervention. As such knowledge is refined through future research perhaps specific types of career problems will be linked to specific profiles

so counselors can use a great deal of the information currently available in the student's file to screen the large number of students they serve and determine which might be at greater risk and warrant more immediate attention. From such information they should have a better grasp of potential weaknesses which might need to be explored and intervention strategies which might best address those needs.

3) While adaptability and cohesion have proven to be useful concepts, practitioners must go beyond comprehension of such terms as isolated constructs. This research suggests that the interaction produces an effect in and of itself, which future studies should seek to understand. In the meantime practitioners should not attribute specific effects to one or the other construct. To direct treatment toward one aspect of the family dynamics without consideration of the other may yield unexpected results or at least a lesser impact on the final goal than considering the two in concert. For example on the FACES II both adaptability and cohesion are scaled the same, going from low scores representing dysfunction to the highest scores being mid-ranged or functional estimates. Through the interaction effect it appears that higher cohesion scores when paired with lower adaptability scores yield stronger career maturity attitudes. This is contrary to the traditional interpretation of the scale in isolation which suggests that higher scores on both scales is a more functional position.

4) These research results imply caution should be used if the CMI-AS is utilized with minorities. There is considerable support for the argument that the instrument has a white middle class bias. Those choosing to use it may want to forego norm group interpretation and use test/retest strategies to plot a student's progress relative to his previous scores. If a norm group is desired perhaps local and minority norms could be derived to provide the most relevant data. Even with non-minority groups one must consider the norms of the CMI as dated and of questionable use

in a society of high technology where the job market has changed dramatically and exposure to the world of work has been altered through job experiences and curriculum changes.

If the CMI is to be used by students with learning disabilities, practitioners should consider modifications as used in this study. Here, to avoid transfer errors common with op scan answering formats, peel off sheets were mounted on each page so students could respond on the same line as the question. The students appeared to have no difficulty with this format and this may be why the groups tended to complete the instrument faster than the time allotments specified in the CMI manual.

Research Recommendations

1) To clarify and expand upon the findings herein and to allow generalization of the results, this study should be replicated using a random sampling procedure. Variations on this study could be done to further examine specific points of interest, for example geographic sampling could help to determine if family influence does vary depending on location (rural, suburban, or urban setting). Such research could also be conducted using variations in design, for example a longitudinal versus a cross sectional design, employment of multiple measurement techniques (structured family observations, survey of other family member's perceptions), etc. .

2) When the FACES revision is complete and the curvilinear model can be tested, this study should be replicated to examine the impact of the higher extremes of family functioning (enmeshment and chaotic functioning) on the students career maturity attitudes.

3) The specific interaction effect of adaptability and cohesion should be studied to examine the influences it exerts in concert on areas such as career maturity attitudes.

4) This study placed emphasis on the student's perception of adaptability and cohesion in their family and how it was related to their career maturity attitudes. Similar studies contrasting the student's and parent's perceptions would be informative. Such research could examine how

these perceptions correlate and which of these perceptions seem to have a greater bearing on the student's career maturity attitudes.

5) Action should be taken to increase the reliability of the FACES and the CMI-AS scales.

Both instruments would also benefit from newer and more comprehensive norms.

6) It would seem that any norms developed for the FACES should incorporate several subsets of norms to allow scoring dependent on which family member is surveyed (parent or child). With the developmental drive toward autonomy, it may also be beneficial to have age norms (as a young adolescent may evidence less reluctance to acknowledge strong links into the family system than an older adolescent might).

7) At this point one can only hypothesize the reasons behind various relationships and outcomes noted in this chapter. Some of these hypotheses referenced in the discussion section of this chapter would appear to warrant further investigation. This might include:

- conducting a study which would break down types of vocational experiences to determine if some types (e.g., the school's co-op work experience programs) might have a greater impact on career maturity attitudes than an after-school employment experience for personal gain.
- eliminating college bound students from the non-vocationally trained group in future studies, and controlling for variables such as IQ and grade level, to determine if this might be interfering with attempts to determine the impact of vocational course work on the maturation of career attitudes.
- studying the impact of vocational assessment by using a measure of the *product* of career maturity rather than a measure of the *process*. This might be done using the CMI Competence Test instead of the CMI Attitude Scale.

8) If one were to compare the CMI-AS results of this sample to the norms from the CMI manual, the students in this study, despite their learning disabilities, would appear to compare quite

favorably. The mean grade level functioning estimates of this sample fell in the average range on the CMI norms (see Appendix I). This is, however, contrary to previous findings on the career maturity of students with learning disabilities. In replicating this study consider a matched comparison group of students without special needs to help establish whether the career maturity of students with learning disabilities has improved over the years (perhaps as a function of the recent emphasis on transitional planning) or if this could be related to other circumstances, such as the lack of more recent norms for the CMI.

9) With the diversity within a learning disabilities population, there is a need to consider research on the impact of the type of learning disability (e.g., area of academic deficit and type of processing problem) on the student's career maturity and/or the family's proclivity toward extremes in adaptability and cohesion. Such research should be carried out on other special needs populations as well. The information gained should help to build a strong fund of knowledge as to what factors might impinge on transition planning, and how they exert their influence.

10) Career counselors may wish to study parenting roles to examine differences between families in handling the stress of having a child with disabilities. They might also want to look at the impact of a systemic approach in creating change in these families.

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Appendix A

FACES Materials and Permission to Utilize

FACES II

by

David H. Olson, Joyce Portner, and Richard Bell

Key: 1 - Almost Never 2 - Once in a While 3 - Sometimes 4 - Frequently
5 - Almost Always

	Response
1. Family members are supportive of each other during difficult times.	1 2 3 4 5
2. In our family, it is easy for everyone to express his/her opinion	1 2 3 4 5
3. It is easier to discuss problems with people outside the family than with other family members	1 2 3 4 5
4. Each family member has input in major family decisions	1 2 3 4 5
5. Our family gathers together in the same room	1 2 3 4 5
6. Children have a say in their discipline	1 2 3 4 5
7. Our family does things together	1 2 3 4 5
8. Family members discuss problems and feel good about the solutions	1 2 3 4 5
9. In our family, everyone goes his/her own way	1 2 3 4 5
10. We shift household responsibilities from person to person	1 2 3 4 5
11. Family members know each other's close friends	1 2 3 4 5
12. It is hard to know what the rules are in our family	1 2 3 4 5
13. Family members consult other family members on their decisions	1 2 3 4 5
14. Family members say what they want	1 2 3 4 5
15. We have difficulty thinking of things to do as a family	1 2 3 4 5
16. In solving problems, the children's suggestions are followed	1 2 3 4 5
17. Family members feel very close to each other	1 2 3 4 5
18. Discipline is fair in our family	1 2 3 4 5
19. Family members feel closer to people outside the family than to other family members	1 2 3 4 5
20. Our family tries new ways of dealing with problems	1 2 3 4 5
21. Family members go along with what the family decides to do	1 2 3 4 5
22. In our family, everyone shares responsibilities	1 2 3 4 5
23. Family members like to spend their free time with each other	1 2 3 4 5
24. It is difficult to get a rule changed in our family	1 2 3 4 5
25. Family members avoid each other at home	1 2 3 4 5
26. When problems arise, we compromise	1 2 3 4 5
27. We approve of each other's friends	1 2 3 4 5
28. Family members are afraid to say what is on their minds	1 2 3 4 5
29. Family members pair up rather than do things as a total family	1 2 3 4 5
30. Family members share interests and hobbies with each other	1 2 3 4 5

Family Social Science
University of Minnesota
297 McNeal Hall
St. Paul, Minnesota 55108

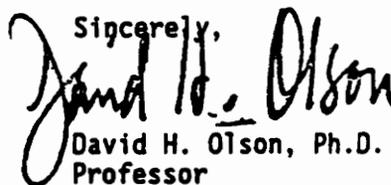
UNIVERSITY OF MINNESOTA

*Twin Cities Campus**Family Social Science
College of Human Ecology**290 McNeal Hall
1985 Buford Avenue
St. Paul, MN 55108
612-625-7250
Fax: 612-625-4227***PERMISSION TO USE FACES II**

I am pleased to give you permission to use FACES II in your research project, teaching or clinical work with couples or families. You may either duplicate the materials directly or have them retyped for use in a new format. If they are retyped, acknowledgement should be given regarding the name of the instrument, the developer's name and the University of Minnesota.

In exchange for providing this permission, we would appreciate a copy of any papers, theses or reports that you complete using FACES II. This will help us to stay abreast of the most recent developments and research regarding this scale. We thank you for your cooperation in this effort.

In closing, I hope you find FACES II of value in your work with couples and families. I would appreciate hearing from you as you make use of this inventory.

Sincerely,

David H. Olson, Ph.D.
Professor

Appendix B

From: County A's Public Schools:Handbook on Special Education Procedures

11. Specific learning disability means a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations which adversely affects the child's educational performance. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems which are primarily the result of visual, hearing, or motor handicaps, of mental retardation, or emotional disturbance, or of environmental, cultural, or economic disadvantage.

A multi-disciplinary team may determine that a child has a specific learning disability if:

1. the child does not achieve commensurate with his or her age and ability levels in one or more of the areas listed below when provided with learning experiences appropriate for the child's age and ability levels; and
2. the team finds that a child has a severe discrepancy between achievement and intellectual ability in one or more of the following areas:

oral expression;
 listening comprehension;
 written expression
 basic reading skills;
 reading comprehension;
 mathematics calculations; or
 mathematics reasoning.

The multidisciplinary team may not identify a child has having a specific learning disability if the severe discrepancy between ability and achievement is primarily the result of

1. a visual, hearing or motor handicap;
2. mental retardation;
3. emotional disturbance; or
4. environmental, cultural, or economic disadvantages.

Appendix C

From: County B's Public Schools:
Special Education Manual

LEARNING DISABILITIES**Federal Definitions**

"Specific learning disability" means a disorder in one or more of the basic psychological processes involved in understanding or in using spoken or written language that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or do mathematical calculations. The term includes such conditions as perceptual handicaps, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia. The term does not include children who have learning problems that are primarily the result of visual, hearing, or motor handicaps; mental retardation; or of environmental, cultural, or economic disadvantages.

Common Characteristics

Students with learning disabilities may have average or above-average intelligence but perform below tested intellectual ability levels. They may fail to master basic math and/or language skills—especially reading—and display irregular test performances. Learning disabilities are highly varied in their nature and effects. For example, a student may have normal hearing but be unable to perceive or discriminate between some sounds, follow oral directions, remember what is heard, or screen out nonmeaningful, distracting sounds; or pupil may have normal vision but be unable to perceive or discriminate between some objects or may perceive letters in a written word in scrambled order.

Such learning difficulties often lead to:

- *frustration and subsequent behavior problems such as poor self-image*
- *poor self-management*
- *disruptive behavior*
- *inability to think abstractly*
- *problems of attention, memory*
- *task avoidance*
- *excessive slowness or hyperactivity*
- *lack of motivation*
- *inability to categorize, classify, sequence*
- *motor dysfunctions*

No one student will exhibit all characteristics and some of the characteristics may show up in pupils with other handicapping conditions.

Identification

The common element in all children identified as learning disabled is discrepancy. This concept is defined in the federal regulations issued in December 1977:

A team may determine that a child has a specific learning disability if (1) The child does not achieve commensurate with his or her age and ability levels in one or more of the areas listed in [the federal definition] when provided with learning experiences appropriate for the child's age and ability levels; and (2) The team finds that a child has a severe discrepancy between achievement and intellectual ability in one or more of the following areas: oral expressions; listening comprehension; written expressions; basic reading skill; reading comprehension; mathematics calculation; or mathematics reasoning. The team may not identify a child as having specific learning disability if the severe discrepancy between ability and achievement is primarily the result of: A visual, hearing, or motor handicap; mental retardation; emotional disturbance; or environmental, cultural or economic disadvantage (Sec. 121a.541).

In addition to the requirements for evaluating all handicapped children, the identification of Learning Disabilities must:

1. include (a) the child's regular teacher or someone qualified to hold that position and (b) at least one person qualified to conduct individual diagnostic examinations of children, such as a school psychologist, speech-language pathologist, or remedial reading teacher on the evaluation team.
2. have a classroom observation from one member of the team other than the child's teacher.
3. the eligibility team must prepare a written report, and each team member must either concur with it or present a statement of differing opinions. The report must include statements of: Whether the child has a specific learning disability; the basis for making the determination; the relationship of that behavior to the child's academic functioning; the educationally relevant medical findings, if any; and if there is a severe discrepancy between achievement and ability which is not correctable without special education and related services; and the determination of the team concerning the effects of environmental, cultural, or economic disadvantage (Secs. 121a.540 and 121a.543).

Appendix D

Request/Permission of the Human Subjects Review Board

CERTIFICATION OF EXEMPTION OF PROJECTS INVOLVING HUMAN SUBJECTS

93-054

Principal Investigator(s): Randall L. Mideck

Department(s): EDSP

Project Title: Family Correlates of Career Maturity Attitudes in Rural High School Students with Learning Disabilities

Source of Support: Departmental Research Sponsored Research Proposal No. _____ Doctoral Dissertation

I. The criteria for "exemption" from review by the IRB for a project involving the use of human subjects and with no risk to the subject is listed below. Please initial all applicable conditions and provide the substantiating statement of protocol.

- a. The research will be conducted in established or commonly established educational settings, involving normal education practices. For example:
 - 1) Research on regular and special education instructional strategies;
 - 2) Research on effectiveness of instructional techniques, curricula or classroom management techniques.
- b. The research involves use of education tests (cognitive, diagnostic, aptitude, achievement), and the subject cannot be identified directly or through identifiers with the information. Career Maturity and Structural Family Internal Factor
- c. The research involves survey or interview procedures, in which:
 - 1) Subjects cannot be identified directly or through identifiers with the information;
 - 2) Subject's responses, if known, will not place the subject at risk of criminal or civil liability or be damaging to the subject's financial standing or employability;
 - 3) The research does not deal with sensitive aspects of subject's own behavior (illegal conduct, drug use, sexual behavior or alcohol use);
 - 4) The research involves survey or interview procedures with elected or appointed public officials, or candidates for public office.
- d. The research involves the observation of public behavior, in which:
 - 1) The subjects cannot be identified directly or through identifiers;
 - 2) The observations recorded about an individual could not put the subject at risk of criminal or civil liability or be damaging to the subject's financial standing or employability;
 - 3) The research does not deal with sensitive aspects of the subject's behavior (illegal conduct, drug use, sexual behavior or use of alcohol).
- e. The research involves collection or study of existing data, documents, recording pathological specimens or diagnostic specimens, of which:
 - RA 1) The sources are publicly available; or
 - RA 2) The information is recorded such that the subject cannot be identified directly or indirectly through identifiers.

I further certify that the project will not be changed to increase the risk or exceed exempt condition(s) without filing an additional certification or application for use by the Human Subjects Review Board.

etc: if children are in any way at risk while this project is underway, the chairman of IRB should be notified immediately in order to take corrective action.

Randall L. Mideck 3/3/93
Principal Investigator(s) (Date)

Janet M Johnson 3/25/93
Chair, Institutional Review Board (Date)

W. E. ... 3/14/93
Departmental Reviewer (Date)



Research Division
306 Burruss Hall
Blacksburg, Virginia 24061-0244
(703) 231-6077 FAX (703) 231-4384

MEMORANDUM

TO: Randall L. Midock

FROM: Janet M. Johnson
Acting Associate Provost for Research

DATE: March 30, 1993

SUBJECT: IRB EXEMPTION/"Family Correlates of Career Maturity
Attitudes in Rural High School Students with
Learning Disabilities"
Ref. 93-059

APR 1993
RECEIVED

I have reviewed your request to the IRB for exemption for the above referenced project. I concur with Dr. Alexander that the research fall within the exempt status.

However, on the informed consent form to assure that all essential elements are included, please add your name, your advisor's name and my name and phone numbers as a contact that parents may make if they have any questions about the research or the conduct of the research. This should be on a separate sheet that the parents may keep.

Best wishes.

JMJ/gsw

cc: Dr. Alexander

Appendix E

Request for School Participation

TO: _____, Assistant Supervisor
County Schools

FROM: Randall L. Midock, School Psychologist
County Schools

DATE: March 12, 1992

RE: Proposed Research

Rationale:

With the Carl Perkins Act mandating vocational evaluations for students with handicaps and the recent state requirements for IEPs depicting the school to work transition of youngsters, there is a demand for more information in this area. As a doctoral candidate at Virginia Tech, I have developed my dissertation research to address this area of need. Most of the currently collected student data address career development "content" - the basic skills and aptitudes which the student possesses. This ignores the other major facet of career development - the "process". This includes the psychological variables which enhance or block the student's ability to make career decisions.

Method:

This study involves measurement of the career maturity attitude of students with learning disabilities in the 9th to 12th grades. With parent consent students will be seen in small groups during their school day. The Career Maturity Inventory-Attitude Scale and the FACES (Family Adaptability and Cohesion Scale) will be completed by each student. This should take 45 to 55 minutes of their time. Each student's data will be given a code to maintain the confidentiality of the information. The rest of the coded data (e.g., ability and achievement scores, type of learning disability, parent education level) will be gathered from their school files.

Benefits:

For students and school: This research will provide data relevant to the participating counties, not to urban or private school populations where such studies are typically conducted. The individual data will be made available to the school staff to facilitate the career guidance of the participating students. It provides a profile of strengths and weaknesses for each student in five areas of career maturity. This would allow the guidance counselors together with the L.D. teachers to identify potential target areas to facilitate the process of career development for each participating student. The overall results of the data analysis will also be shared with the school system personnel. It will explore which factors have the greatest bearing on the student's career maturity attitudes. This will give the staff specific information on variables which could facilitate or hinder the student's career development, thereby providing insight on how to tackle each deficit area. This should translate into meaningful transitional IEP objectives.

For the researcher: The composite data from this research will be analyzed and submitted as a partial requirement for my doctorate.

For the field: Research suggests that the process of career development is delayed for students with learning disabilities. This research will explore what factors are related to that delay. This should provide insight for career counselors and other professionals regarding techniques to consider to facilitate the school to work transition of students with learning disabilities. When contrasted with existing literature it should also help uncover differences in the career development process of students based on geographic locality.

Post Script:

I hope this is useful to you in clarifying the intent of my research. County Schools have endorsed this research, and I will begin data collection as soon as possible after my sample is complete. Since your County was in our last Educational Performance Recognition Band, and a homogeneous sample is crucial to this study, I hope you will see fit to participate. I look forward to the opportunity to meet with you to discuss this project further. I can be reached at 703- - (work) or 703- - (home).

Appendix F

Request for Student Participation

PLEASE READ AND RETURN BY MAY __, 1993

Dear _____:

In a few weeks I will be working with our school psychologist, Randy Midock (who is also a Virginia Tech graduate student), to gather information on the readiness of our students to make career decisions. Specifically, this will involve having students from our learning disabilities program fill out two questionnaires (on career attitudes and family structure). It will take about one class period of student time. We are asking your permission for _____ to participate.

The students' information will be used in a study to help us find out what factors are important influences on career development. This should help us to better prepare students with learning disabilities to enter the world of work. We will also have this information on hand for our school staff to help your son or daughter with his or her career plans.

None of the information for the study will have names or personally identifiable information with it. The study has been approved by our school board as well as Virginia Tech's Institutional Review Board and Student Personnel Administration Department. I do hope you will allow _____ to join us. Enclosed you will find two copies of this letter. On both copies, please check a line to indicate your choice and sign your name. Send one copy back to me and keep one in case you have any questions. Parents or students can choose not to participate at any time.

If you would like a summary of the results of this study, just let me know and it will be sent home in a few months when all is finished. If you have any questions about this study you may contact: Mr. R. Midock (703-465-8281); Dr. T. Hohenshil (703-231-9706); Dr. M. Asche (703-231-8194); or Dr. J. Johnson (703-231-6077). Thank you for your time and help.

Sincerely yours,

Teacher

_____ I do give permission for my child to participate.

_____ I do not give permission for my child to participate.

Parent Signature

Appendix G
Directions given Students

Administration Directions and Procedures:

To the facilitator: Anything on this sheet in mixed print (caps and lower case) is for your information. Material in all capital letters should be read aloud to the students.

Instructions: I'D LIKE YOU TO MEET MR. MIDOCK WHO IS HERE TO HELP US WITH OUR CAREER RELATED QUESTIONNAIRES. HE WILL BE WALKING AROUND WHILE YOU FILL OUT YOUR ANSWERS TO SEE IF YOU NEED ANY HELP, TO ANSWER QUESTIONS, AND TO MAKE SURE YOU ARE NOT HAVING ANY TROUBLE KEEPING UP.

TODAY WE WILL BE TAKING A LOOK AT YOUR CAREER ATTITUDES AND FACTORS THAT MIGHT AFFECT THEM. MR. MIDOCK WILL BE PASSING OUT TWO QUESTIONNAIRES, ONE THAT IS FOUR PAGES AND ONE THAT IS ONE PAGE. AS I READ THE ITEMS I WOULD LIKE YOU TO FOLLOW ALONG ON YOUR COPY. REMEMBER, THERE ARE NO RIGHT OR WRONG ANSWERS. JUST RESPOND IN A WAY THAT BEST DESCRIBES YOU, YOUR FEELINGS, OR YOUR SITUATION. IF WE ARE GOING TOO FAST OR IF YOU HAVE A QUESTION JUST RAISE YOUR HAND.

DOES EVERYONE HAVE A PENCIL?

Distribute pencils as necessary.

First Questionnaire:

WE WILL BEGIN WITH THE.....

Go to the directions in section A or B (on the following pages) as appropriate. Your first group of students will begin with questionnaire A then take B. Alternate the sequence of administration between each group of students.

Second Questionnaire:

THE SECOND AND LAST QUESTIONNAIRE IS THE...

Go to section A or B as appropriate.

End of testing:

WE WOULD LIKE TO THANK YOU FOR YOU HELP TODAY. DO YOU HAVE ANY QUESTIONS RELATED TO WHAT WE DID? THANKS AGAIN.

Collect pencils.

Provide snack.

Section A:

...CAREER MATURITY ATTITUDE SCALE. MR.MIDOCK IS GOING TO GIVE YOU A COPY OF THE ATTITUDE SCALE BOOKLET. PLEASE DO NOT OPEN THE BOOKLET UNTIL I TELL YOU TO.

Distribute one booklet to each student.,

PLEASE PUT YOUR NAME ON THE YELLOW TAG IN THE TOP CORNER OF YOUR BOOKLET. (point to the tag on the sample copy)

THE CAREER MATURITY INVENTORY HAS BEEN DESIGNED TO LOOK AT THE VARIOUS ATTITUDES AND COMPETENCIES WHICH ARE IMPORTANT IN MAKING DECISIONS ABOUT YOUR CAREER; IT IS NOT A PERSONALITY, INTEREST, ACHIEVEMENT OR APTITUDE TEST. THE ATTITUDE SCALE ASKS ABOUT YOUR FEELINGS TOWARD MAKING A CAREER CHOICE AND ENTERING THE WORLD OF WORK. THE INFORMATION YOU GET FROM TAKING IT CAN BE USED IN CHOOSING AND PLANNING FOR YOUR CAREER AND CAN CONTRIBUTE TO YOUR CAREER MATURITY. COMPLETE THIS INVENTORY CAREFULLY AND THOUGHTFULLY; IT MAY HELP YOU CHOOSE A MORE SATISFYING AND SUCCESSFUL CAREER.

Take time to answer any questions which may be asked about the introductory statement.

Directions:

THERE ARE A NUMBER OF STATEMENTS ABOUT CAREER CHOICE IN THIS BOOKLET. 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. TOGETHER WE WILL READ EACH QUESTION. PLEASE MARK YOUR ANSWER NEXT TO THE QUESTION ON THE PAGE. IF YOU AGREE OR MOSTLY AGREE WITH THE STATEMENT CIRCLE THE "T", WHICH STANDS FOR TRUE. IF YOU DISAGREE OR MOSTLY DISAGREE WITH THE STATEMENT CIRCLE THE "F" FOR FALSE. PLEASE DO NOT PUT ANY OTHER MARKS IN YOUR ANSWER BOOKS.

DO YOU UNDERSTAND THE DIRECTIONS? (Pause for questions)

TURN TO PAGE FOUR OF YOUR BOOKLETS. (Pause and make sure all are with you)

LET'S BEGIN.

Turn on the overhead. Cover all questions except the one being read. Read the item number, the question, and then say:

TRUE OR FALSE? PLEASE CIRCLE ONE.

Repeat this procedure for each item omitting "Please circle one" once it appears to no longer be needed.

During the administration, the facilitator and assistants may help in the marking of answers, clarifying procedures, and finding the right place in the booklet, but care should be taken to avoid indicating a specific answer or pointing out the rationale for any item.

After the last item is read, pause briefly then say: IS THERE ANYONE WHO IS NOT FINISHED YET? (Allow necessary time)

Collect the booklets.

*Please note, these directions are a close but brief rendition of the directions given in the CMI-AS manual.

Section B:

...FACES II SCALE, WHICH MR. MIDOCK IS GIVING YOU A COPY OF NOW. PLEASE LEAVE IT TURNED OVER UNTIL I TELL YOU. (*Hand out the FACES sheets*)

THE PURPOSE OF THIS QUESTIONNAIRE IS TO LOOK AT HOW YOU AND YOUR FAMILY WORK TOGETHER TO DO THINGS, SUCH AS MAKING DECISIONS. AS I READ EACH ITEM, YOU SHOULD THINK OF HOW IT APPLIES TO YOUR FAMILY AS IT IS NOW. YOU WILL BE ASKED TO CIRCLE A NUMBER NEXT TO THE QUESTION TO RESPOND. IF YOU CIRCLE NUMBER ONE YOU ARE SAYING THAT THIS ALMOST NEVER HAPPENS IN YOUR FAMILY; A TWO SUGGESTS IT HAPPENS ONCE IN A WHILE; A THREE SOMETIMES; A FOUR FREQUENTLY; AND A FIVE SUGGESTS IT ALMOST ALWAYS HAPPENS.

TURN YOUR PAPER OVER. DO YOU SEE THE KEY WHICH EXPLAINS THE ANSWERS ONE THROUGH FIVE? IT IS AT THE TOP OF YOUR PAGE. BE SURE TO USE THIS AS WE GO THROUGH THE QUESTIONS. DO YOU HAVE ANY QUESTIONS?
(Pause to answer any questions)

PLEASE PUT YOUR NAME ON THE YELLOW TAG IN THE TOP RIGHT HAND CORNER OF YOUR PAPER. (Point to the tag on your sample copy)

Turn on the overhead, showing only one question at a time. Read each statement beginning with item one. If a student asks for an interpretation of a question you may re-read it, but do not interpret the question for them. After item twenty is read, pause, then ask:
DOES ANYONE NEED MORE TIME? (Provide appropriate time, then *collect the FACES sheets*)

Appendix H
Individual Student Data

Student	Verbal IQ	Performance IQ	Reading Standard Score	Math Standard Score	Written Language Score	Ability/Achievement Discrepancy	Deficit Area*	Service Level**
001	108	112	98	114	84	28	WL	1
002	87	106	85	70	75	36	WL	1
003	100	104	81	102	80	24	WL	1
004	115	110	89	78	71	44	WL	1
005	110	107	89	92	77	33	WL	1
006	112	118	88	106	95	30	RS	1
007	94	98	84	97	65	33	WL	1
008	96	91	83	77	73	23	WL	1
009	94	86	76	91	70	24	WL	1
010	101	106	65	107	61	45	WL	1
011	103	128	91	110	74	54	WL	1
012	84	72	71	86	72	13	RS	1
013	79	98	67	70	72	31	RS	1
014	69	84	55	67	70	29	RS	1
015	111	80	96	84	77	34	WL	1
016	82	96	75	70	72	26	WL	1
017	92	88	79	85	90	13	RC	1
018	108	92	95	88	84	24	WL	1
019	95	121	89	91	87	34	WL	1
020	86	73	74	85	69	17	WL	1
021	90	102	82	86	93	20	RS	1
022	78	82	55	40	61	42	MC	2
023	58	75	62	68	67	13	RS	1
024	72	88	63	82	70	25	RS	1
025	57	87	62	75	68	25	RS	1
026	102	71	91	118	118	11	RC	1
027	94	123	90	105	91	33	RS	1
028	74	75	75	72	78	3	MR	1
029	87	92	87	83	76	16	WL	1
030	84	72	90	81	101	3	MC	1
031	94	91	90	96	94	4	MC	1
032	79	68	72	68	94	11	MR	0
033	105	118	89	95	67	51	WL	1
034	98	82	91	82	90	16	MC	1
035	101	118	90	99	88	30	RS	1
036	105	81	93	85	89	20	WL	0
037	101	128	79	100	74	54	WL	0
038	101	91	101	77	73	28	WL	2
039	125	78	127	115	113	12	MR	1
040	95	100	83	91	71	29	WL	1
041	106	114	108	100	81	33	WL	1
042	101	98	84	92	70	31	WL	1
046	86	81	84	124	93	2	RC	1
048	82	58	67	69	95	15	RC	1
049	87	78	84	85	98	3	MR	0

Student	Verbal IQ	Performance IQ	Reading Standard Score	Math Standard Score	Written Language Score	Ability/Achievement Discrepancy	Deficit Area*	Service Level**
050	73	91	79	80	78	13	WL	1
051	86	105	95	98	87	18	WL	0
052	103	119	107	93	112	26	WL	0
100	86	93	74	86	72	21	WL	1
101	77	95	74	93	75	21	RS	0
102	68	80	70	63	75	17	RS	1
104	92	92	86	80	75	17	WL	1
105	100	84	88	77	66	34	RS	1
106	81	91	63	78	72	28	RS	1
107	69	81	92	68	84	13	MR	0
108	82	71	77	60	75	22	RS	1
109	97	96	82	81	69	28	WL	2
110	77	74	74	97	84	3	RS	1
111	94	90	60	82	73	34	RC	1
112	74	77	105	88	95	-11	RC	0
113	103	101	70	64	64	39	MR	0
114	119	111	106	102	96	23	WL	1
115	97	86	95	84	100	13	MC	1
116	80	81	82	89	78	3	RC	0
117	91	106	74	78	64	42	WL	1
118	99	104	88	94	89	16	RS	1
119	111	82	115	106	102	9	WL	1
120	101	88	91	79	83	22	MC	1
121	102	108	94	107	98	14	RS	1
122	104	97	79	100	84	25	RC	1
123	111	100	114	78	105	33	MC	1
125	95	85	66	76	70	29	WL	0
126	79	89	70	73	75	19	WL	1
127	114	93	91	93	89	25	MC	1
128	109	105	101	86	83	26	MR	1
129	90	91	94	104	97	-3	WL	1
130	87	105	89	86	81	24	MR	1
131	92	111	64	77	69	47	RC	1
132	101	101	81	82	85	20	RC	0
133	103	91	85	80	83	23	RC	1
134	87	98	71	88	64	34	WL	1
135	107	102	100	74	79	33	MC	1
136	65	87	62	63	66	25	WL	1
137	88	68	89	94	86	2	MR	0
138	68	85	101	106	97	-12	WL	1
139	90	98	70	76	80	28	RS	1
140	97	111	91	99	86	25	WL	0
141	107	74	92	100	103	15	RC	0

***Type of skill deficit**

RS = reading skills

MR = math reasoning

RC = reading comprehension

WL = written language

MC = math calculation

****Level of Services**

0 = monitor

1 = 1 to 10 hours

2 = 10 to 15 hours

Appendix I

Mean Grade Level Scores of Sample Based on CMI Norms

<u>Grade</u>	<u>Mean Screener Score</u>	<u>CMI Standard Score</u>	<u>CMI Percentile</u>
9	32	49	46%
10	32	48	42%
11	34	49	46%
12	30	41	18%

VITA

RANDALL L. MIDOCK

Home Address:
122 Fair Lawn Court
Stephens City, VA 22655

Date of Birth: 09/25/54
Marital Status: Married
Languages: German and Spanish

EDUCATIONAL BACKGROUND

Ph.D.	Virginia Tech/James Madison Universities	1994	Major: Counseling/Vocational School Psychology
Ed.S.	Indiana University of Pennsylvania	1982	Major: School Psychology
M.Ed.	Indiana University of Pennsylvania	1978	Major: Exceptional Children
B.A.	Indiana University of Pennsylvania	1976	Major: Psychology Minor: Chemistry/Biology

PROFESSIONAL EXPERIENCE

Licensed Therapist (School Psychologist), Psychological Health Associates (Winchester, VA)

Responsibilities include counseling of children (preschool through young adult), family intervention, parent training, school consultation, psychological assessment, and interagency coordination of casework.

School Psychologist, Shenandoah County Board of Education (Woodstock , VA)

Responsibilities include psychological assessment, counseling, consultation with parents and staff, interagency case coordination, crisis intervention, systems consultations, participation on the eligibility and placement committee, intern and practicum student supervision, and development/presentation of workshops.

Field Supervisor, Psychology Department, James Madison University (Harrisonburg, VA)

Responsibilities include supervision and evaluation of practicum students in the areas of school psychology training, case management, consultation style, psychological assessment, counseling techniques, and systems work.

Psychological Consultant, "Home-School Connection" Publication (Strasburg, VA)

Responsibilities included assisting with topic selection, reviewing content, editing, writing articles, and consulting on marketing strategies.

Counselor/School Psychologist Resident, Family Life Center (Winchester, VA)

Responsibilities included individual and systems therapy with a special focus on children, adolescent and young adults; interagency casework and consultation; cognitive and emotional evaluations of functioning; pre- and post-assessment of treatment effects; and workshop development/presentations.

Program Coordinator/School Psychologist, Parent-Infant Education Program, Prevention Unit North-western Community Services Board (Winchester, VA)

Responsibilities included assessment of infant development, design of individual therapeutic programs for infants, provision of special education and psychological services, coordination of agencies' services, chairing of medical team meetings, supervision of staff, administration, and data collection.

College Instructor-Psychology Department, Shepherd College (Shepherdstown, WV)

Responsibilities included teaching the Psychology of Adjustment and General Psychology to undergraduate students, evaluating student progress, grading, record keeping, and consulting with students.

School Psychologist, Monroe County Board of Education (Union, WV)

Responsibilities included psycho-educational child study, individual and group counseling, individual appraisal, chairmanship of the Committee for Career and Vocational Education of the Handicapped, inservice education for teachers, parent counseling, intern supervision, and preschool consultation.

Emotional Disturbance Specialist/Intern School Psychologist, Barbour County Board of Education (Philippi, WV)

Responsibilities included design and implementation of individualized educational programs, providing instruction and affective education in the least restrictive setting (including short-term self-contained, resource, or regular class team teaching), consultation with parents and teachers, behavioral contracting, counseling, values clarification, social skills training and role rehearsal. The supervised school psychology experiences included psycho-educational child study, individual counseling, individual appraisal, parent consultation, inservice for teachers and parents, and handling a stress hot line for professionals.

Early Childhood Consultant/Instructor, ARIN Intermediate Unit (Schelocta, PA)

Responsibilities included child find activities, preschool screenings, parent training, consultation (with parents, teachers, and agencies), participation in multidisciplinary assessment teams, coordinating the development and implementation of the instructional plans, providing cognitive/developmental instruction as well as follow up on speech, physical therapy and occupational therapy programs.

Project Consultant, National Learning Resource Center (Harrisburg, PA)

Responsibilities included development of training packages for the implementation of Public Law 94-142 (the Right to Education Bill for all individuals with handicaps), creating professional development materials, editing materials, and providing state-wide inservice for school district inservice personnel.

Special Education Consultant/Graduate Course Instructor, Tuscarora Intermediate Unit (McVeytown, PA)

The special education consultant responsibilities included consultation with nine school districts on individual and class problems, assessing inservice needs, inservicing staff, identifying and contracting with individuals to provide inservice, grant writing, program development, and design /implementation of policy statements. The graduate course instructor responsibilities included designing graduate level courses as per the specification of the U.S. Bureau of Education for the Handicapped, submitting them for funding, and delivering the courses to educators in rural regions of Pennsylvania.

Psychopharmacological Researcher, Carnegie Mellon University (Pittsburgh, PA)

Responsibilities included teaching psychology lab classes for undergraduates, conducting experiments to determine the effects of narcotics and neurotransmitters on behavior, drug preparation ,behavioral observation, collection of data, analysis of data, preparation of material for publication, and surgical procedures to prepare specimens for biochemical analysis.

PROFESSIONAL SERVICES**Publication**

Multidisciplinary Teams: A Training Package for Effective Functioning

Published by: National Learning Resource Center of Pennsylvania, 1150 First Avenue, King of Prussia, PA 19406

Graduate Courses Developed and Taught

The following courses were approved by the Bureau of Education for the Handicapped and taught through funding by the State Department of Education, Pennsylvania:

Overview of Mainstreaming
Individualizing Education

Team Decision Making in Education

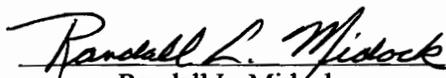
PROFESSIONAL AFFILIATIONS

National Association of School Psychologists

National Education Association

HONORS

Phi Kappa Phi Academic Honors Society


Randall L. Midock