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Career Aspirations: Similarities and Differences between Adolescence with Learning Disabilities
and Adolescence Not Receiving Special Education Services

Graduate Thesis

Submitted to the Faculty

of the School Psychology Program

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ROCHESTER INSTITUTE OF TECHNOLOGY

By

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Running head: CAREER ASPIRATIONS: SIMILARITIES AND DIFFERENCES

Career Aspirations: Similarities and Differences between Adolescence with Learning Disabilities
and Adolescence Not Receiving Special Education Services

Cara A. Stromberg

Rochester Institute of Technology

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Abstract

The Self-Directed Search (SDS) and Career Advisement Questionnaire: Adolescent Form were administered to a group of high school students who were either classified with a learning disability (LD) or who were not receiving special education services. The SDS and Career Advisement Questionnaire: Parent Form were administered to a subset of parents of students with LD. Results indicate that students with LD differed in their work personalities compared to students not receiving special education services and compared to their parents' estimates of their work personalities; specifically, students with LD held lower self-estimates about their own abilities compared to peers. Students with and without LD received similar career advisement from their parents. These findings have significant implications for parents and school personnel who work with students with LD, as more focus needs to be placed on developing self-efficacy in students with LD.

CHAPTER ONE

Introduction

Overview: Purpose and Significance of the Study

Several career theorists have influenced the field of career development, including Donald Super, Ann Roe, and John Holland. Each theorist was influential to the field by calling attention to the different influences on children's career aspirations. Career aspirations develop at a young age, and remain relatively stable throughout life. Common influences include gender, self-efficacy, and parental expectations and input. Further, the literature reveals that career aspirations of children with learning disabilities (LD) differ from career aspirations of children without learning disabilities. The purpose of the present study was to examine if the work personalities of adolescence with learning disabilities are similar to the work personalities of adolescence not receiving special education services and if the groups differ in self-efficacy beliefs related to how well they can perform activities compared to their peers. In addition, this study sought to determine if differences in career aspirations between adolescence with LD and those adolescence not receiving special education services are related to difference in career advisement received from parents. The final purpose of this study was to determine if parents of adolescence with learning disabilities evaluate their child's work personality in the same way their child does.

As children with LD become adults and enter the work field, they usually work in less skilled occupations, have a higher unemployment rate, and earn lower wages than individuals without LD (Plata & Bone, 1989; Rojewski, 1996, 1999). One hypothesis for these findings is that parental influence and lower expectations influence the career aspirations of these children. Parents may be inadvertently influencing their children to have lower expectations for their

children's future career choices. This is a significant issue, because parent support groups may be able to educate parents that parental influence does make a difference in a child's future career choice. Parents need to be educated that they should actually hold higher expectations for their children with LD.

Further, adolescence with learning disabilities may hold lower beliefs about their ability to perform certain tasks compared to their peers. If this is the case, then adolescence with LD may have less prestigious career aspirations. Training in a specific area of strength during secondary school may foster higher aspirations in adolescence with learning disabilities.

Delimitations of the Study

A delimitation of this study is that participants were taken from a sample of convenience. Participants were those that agreed to participate in this study and there was no control for socioeconomic status, gender, or geographical location.

Definition of Terms

1. calculus-John Holland's concept that provides support for his hexagonal structure of personality types; "the distances between the personality types are inversely proportional to the supposed relationship among the types" (Erwin, 1988, p. 158)
2. career aspiration-a desire or ambition to obtain a job in an occupational field of interest
3. congruence-John Holland's concept; similarity between personality and work environment
4. consistency-John Holland's concept; primary and secondary personality interest types that are found next to each other on the hexagon; interests types found next to each other also share similar characteristics

5. differentiation-John Holland's concept; the numerical difference in raw score points on the Self-Directed Search (SDS; Holland, 1994) between an individual's highest and lowest career interest scores
6. self-efficacy-an individual's belief about his or her capabilities in a certain area
7. vocational identity-John Holland's concept; individuals with a strong sense of identity are able to readily identify their interest and abilities, and are more likely to choose a career environment that maximizes their personality characteristics and their abilities

CHAPTER TWO

Review of the Literature

Super, Roe, and Holland are three prominent theorists who have helped shape the field of career development. Each set forth their own theory on how an individual determines his or her future career path, whether the theory was largely based in a developmental framework, like Super's, or based on personality and need theories, like Roe and Holland's. Super, Roe, and Holland tried to define which facets of an individual's life influence his or her career aspirations. Since each theory was proposed, numerous studies have explored career aspirations in their own right, including when career aspirations typically develop, common influences on an individual's career aspirations, as well as the stability of the aspirations over time. One of the major determinants of a child's career aspirations is his or her parent's expectations. There also seems to be differences in career aspirations depending on if the child has a learning disability (LD) or not.

Influential Career Theorists

Donald Super. Donald Super's theory of career development was largely based in a developmental framework (Super, 1983). In 1951, Super began a longitudinal Career Pattern Study (CPS), in which he followed a group of approximately 100 men from the time they were 14 or 15-years-old, until they were 36-years-old (Super, 1985). Super sought to determine the developmental course that young men follow in their career attainment. He believed that career development occurred in stages, in which people cycled between career growth, exploration, establishment, maintenance, and decline (Super, 1985). Super's stages extended from birth to retirement age, in which individuals progressed from fantasy to reality in their career aspirations, and often sought to explore different career options before they settled into a stable career

(Seligman, 1994). Super's stages also coincided with normal development, in which personal developmental milestones influenced career development (Seligman). A central component of Super's theory is his belief that self-concept played a vital role in an individual's developmental career trajectory (Super, 1985). Super believed that an individual's self-appraisal of his or her own abilities, interests, and values gave the individual confidence to explore numerous career paths, and ultimately to attain career satisfaction in one field (Seligman).

Because Super neglected to study women and minority groups in his CPS, it is questionable whether his work can generalize to those who are not white, middle class men; however, Super attempted to apply his work to women as well. His research from the CPS led to four types of career patterns for male career development and seven career patterns for female career development (Seligman, 1994). For men, Super believed that they fit into either a stable, conventional (several different trial careers are tried, until stable employment was attained), or unstable, multi-trial career pattern (frequent career changes, without stable employment) (Seligman). Super's original career patterns for women are outdated, given the enormous strides that women have made in the workforce and toward equality with men. Super's theory led to the development of several career inventory measures, most of which specifically examined career maturity. These inventories include the Career Maturity Inventory (CMI; Crites, 1978) and the Career Development Inventory (CDI; Super, Thomson, Lindeman, Jordaan, & Myers, 1981), among others. Although Super believed that individuals should maximize their interests and abilities through their careers, he did not place as strong an emphasis on individual interests, personality types, and personal needs as subsequently did Roe and Holland.

Ann Roe. Ann Roe based her theory of career development on Maslow's hierarchy of needs (Roe, 1957). She believed that occupational choice was directly related to early

development and the type of parent-child relationship that was formed. If the child had all of his or her needs met at a young age, then the child as an adult would not seek to meet those basic needs through his or her career; however, any unmet needs were to be fulfilled through career choice (Roe; Seligman, 1994). Roe conceptualized that the way parents related to their children influenced the children as adults to enter into a career field with an orientation toward others or a field where interaction with others was minimal (See Figure 1, pg. 11; Hagen, 1960). Factors that influenced future career choice stemmed from the parent's emotional concentration on the child (i.e., overprotecting or overdemanding), their avoidance of the child (i.e., rejection or neglect), and/or their acceptance of the child (i.e., casual acceptance or loving acceptance; Roe). For example, Roe believed that those individuals who came from homes that were overprotective, overdemanding, or loving were more likely to enter into career fields that placed a strong emphasis on interacting with others (e.g., Service, Business Contact, Organizations, General Culture, or Arts and Entertainment fields), whereas those individuals who came from homes that were rejecting, neglecting, or casually accepting tended to prefer to work alone, or with things, rather than with people (e.g., Technology, Outdoor, or Science fields; Hagen; Seligman, 1994). Little empirical support has been found to validate Roe's theory, including a study by Hagen, in which he reviewed data from the Study of Adult Development at Harvard College. Data from the study failed to demonstrate that specific family climates and later career choice were linked in any way. However, Roe has been influential to the field of career development, in that her work drew attention to early development and the role that family plays in future career choice, as well to the importance of classifying occupations by level and field (Seligman).

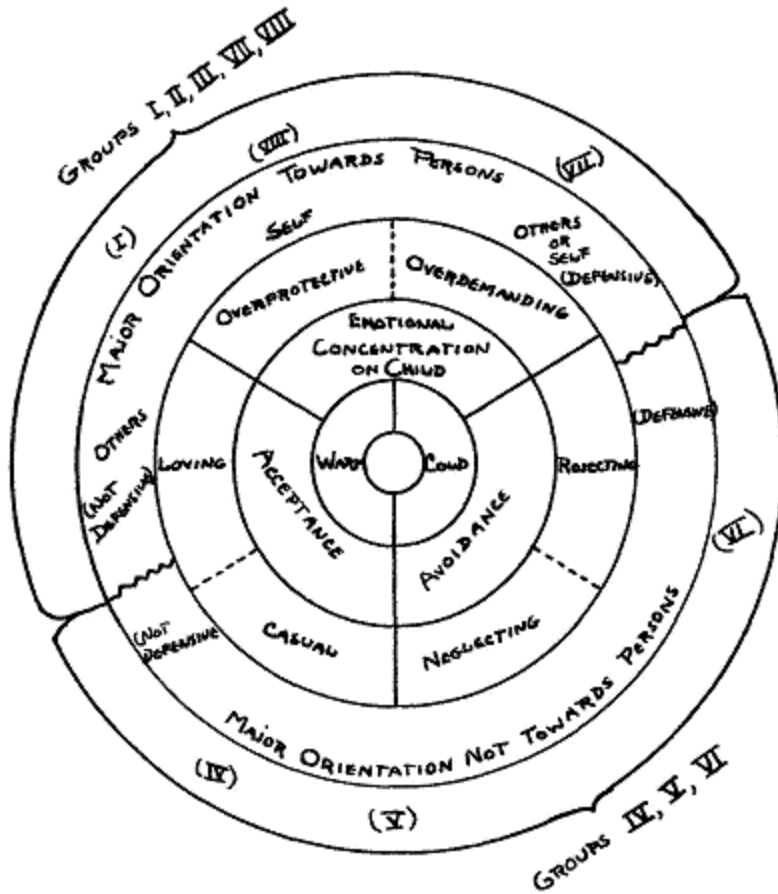


Figure 1. Anne Roe's vocational diagram.

Reprinted from "Early Determinants of Vocational Choice," by Anne Roe (*Journal of Consulting Psychology*, 1957, 4, 216). Copyright © 1957 by the American Psychological Association.

John Holland. Roe's career theory is based on the relationship between family environment and future career choice, whereas John Holland's theory is based on the relationship between personality and career choice (Seligman, 1994). Holland's Model of Congruence is based on a congruence or similarity between an individual's personality characteristics and his or her work environment, also described as environment fit. Holland believed that when personality and environment align, the individual experiences greater career satisfaction (Arnold, 2004). Holland defined six interest types that describe each career environment, as well as the

personality characteristics of the individual labeled. These six interest types are organized into a hexagonal model (See Figure 2, pg. 13), and include the Realistic, Investigative, Artistic, Social, Enterprising, and Conventional types (RIASEC; Holland, 1997). Individuals who fit into the Realistic type prefer to work in a systematic way, in which they are able to manipulate objects or machines. These individuals also tend to lack social and educational skills. Realistic individuals prefer to solve problems within a concrete and structured framework. They are described as conforming, inflexible, reserved, and practical (Holland, 1997). Individuals who are Investigative seek to understand and control the environment around them. Investigative individuals generally value scientific and scholarly activities and solve problems analytically. These individuals are described as critical, curious, intellectual, and rational (Holland, 1997). Artistic individuals prefer unstructured activities, in which they can manipulate materials to create art. They value self-expression and aesthetic experiences and are described as emotional, expressive, imaginative, and original (Holland, 1997). Individuals who fit into the Social type enjoy working with others, value human relationships, and often work in helping or therapeutic professions. Social individuals are most gratified when they are helping or teaching others and are described as cooperative, empathic, patient, warm, and understanding (Holland, 1997). Enterprising individuals are more business oriented and tend to prefer a leadership position. These individuals are highly self-confident and ambitious and are described as assertive, enthusiastic, sociable, forceful, and adventurous (Holland, 1997). Conventional individuals are organized and prefer to manipulate data and materials in a systematic and explicit way. They are business oriented and find value in hard work. Conventional individuals are practical, orderly, conforming, efficient, and inflexible (Holland, 1997). Holland created the Self-Directed Search (SDS; Holland, 1994), an inventory designed to assess an individual's interests and competencies

in each of the six interest areas. Raw scores in each of the six interest areas are obtained to determine an individual's primary, secondary, and tertiary interest types (Seligman).

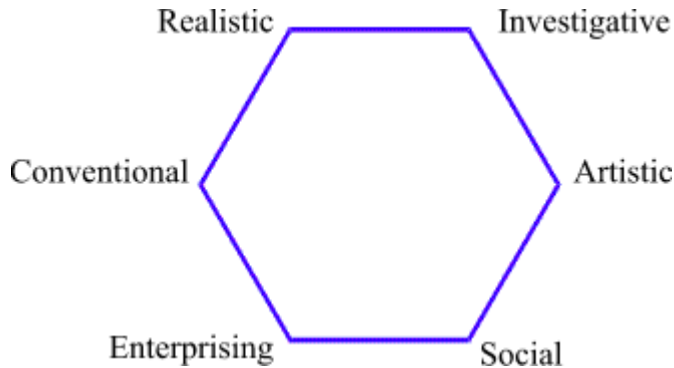


Figure 2. John Holland's vocational personality types.

Reproduced from the *You and Your Career* booklet by John L. Holland, Ph.D. Copyright © 1977, 1985, 1991, by Psychological Assessment Resources, Inc.

Holland defined five key concepts to his theory, one of which is *congruence* (or the similarity between personality and work environment). Another concept, *calculus*, provided support for the hexagonal model, in that “the distances between the personality types are inversely proportional to the supposed relationships among the types” (Erwin, 1988, p. 158). Calculus supports the idea that interest types are more similar the closer they are found near one another on the hexagon. A third concept, *consistency*, is demonstrated by primary and secondary interest types found next to each other on the hexagon. When career interest types are closer together in the hexagon, the individual should experience greater career satisfaction and stability (Seligman, 1994). The fourth concept, *differentiation*, refers to the numerical difference in raw score points on the SDS between an individual's highest and lowest career interest scores. Individuals with highly differentiated scores are thought to have greater career satisfaction (Seligman). The fifth key concept is *vocational identity*. Holland (1996) believed that

individuals with a strong sense of identity are able to readily identify their interests and abilities, and are more likely to search for a career environment that maximizes their personality characteristics and their abilities. John Holland's career development theory is one of the most well-known and well-research theories in the field, namely because Holland designed several inventories, such as the SDS, to help promote the use of his theory in career counseling (Seligman).

Super, Roe, and Holland are three of the more prominent career theorists to shape the study of career development in the past century and all three theorists brought greater attention to the study of influences on career aspirations. Subsequent studies have focused on the age that career aspirations develop, as well as the differences in career aspirations as children get older. Gender differences in career aspirations, the role of self-efficacy or self-concept in the development of career aspirations, parental influence on career aspirations, and the stability of career aspirations over time have also been examined.

Career Aspirations: When they Develop

Early studies of career aspirations neglected to study children, and focused almost exclusively on adults. Currently, however, there seems to be a greater number of studies that examine the career aspirations of young children (Auger, Blackhurst, & Wahl, 2005; Trice & Hughes, 1995). In a study examining the development of career aspirations in first, third, and fifth grade children, it was found through structured interviews that at all ages, the children provided the researchers with specific, as opposed to more generalized, careers or occupations that they were interested in (Auger et al., 2005). Furthermore, there was no statistical difference between grade levels in the number of realistic careers that the children provided, as opposed to fantasy careers. What was most surprising was that first graders listed proportionally more

realistic and specific careers than either the third or fifth graders (Auger et al.). The researchers also found that older children were significantly less likely to provide sex-typed career aspirations (especially when the children were female), but were more likely to provide more prestigious career aspirations than younger children in the sample (Auger et al.). The results of this study indicate that by fifth grade, and sometimes as early as first grade, children are able to rationally examine how realistic their career aspirations are.

In another study examining the career aspirations of children, Trice and Hughes (1995) asked kindergarteners, second, fourth, and sixth graders to provide their first and second choices for future occupations and why they chose those occupations, as well as to identify the occupations of all adults living in their home. In addition, the children were asked if they knew an adult who held a job in one of 13 different occupations. It was found that children were more likely to list first and second occupational choices within the same Holland interest type (Trice & Hughes). This suggests that children recognize where their abilities and interests lie, and can choose several different careers that best suit their personalities. Results also showed that in young children, the maternal occupation played a stronger role in a child's career aspirations than did the paternal occupation. However, as children aged, girls had a stronger preference for their mother's occupation, whereas boys had a stronger preference for their father's occupation (Trice & Hughes). It was also found that children from disruptive homes (i.e. those living in foster care) were least likely to have career aspirations toward a specific career, indicating that the familial environment does play a role in career aspirations. By fourth grade, children were able to state reasons why they chose their first occupational choice, and often made reference to their individual abilities and interests (Trice & Hughes). Family influence remained a constant influence on career aspirations as children aged; however, boys mentioned money and status as

reasons why they were interested in a particular occupation increasingly more as they got older, whereas girls were more likely to mention individual abilities, as well as family influences, and helping others as reasons why they chose a particular occupation of interest (Trice & Hughes). This study indicates that children are capable of aspiring to careers of interest, and that gender and parental influence do play a role in future career choice.

Career Aspirations: Gender Differences

Several studies have specifically studied gender differences in career aspirations. Although women have made great strides toward equality with men in the work field, the research shows that children and adolescent career aspirations still reflect the traditional gender dichotomy. In a study of the career aspirations of 14 to 15-year-old students in London, the adolescents were interviewed about their perceptions of gender and their future career aspirations (Francis, 2002). It was found that girls were more likely to show interest in jobs traditionally performed by men than had previously been the case; however, overall, girls still chose traditionally feminine occupations, including being a nurse, a hairdresser, or a clerical worker (Francis). It was also found that girl's occupational aspirations were more ambitious than they had been in previous decades, in that many of the occupations that the girls in the study aspired to be required at least an undergraduate, in not an advanced, degree. Only a few of the boys in the study aspired to traditionally feminine occupations, and most of the boys chose ambitious occupations that required a college degree (Francis). Overall, girls aspired to traditionally feminine occupations, involving a strong caring or creative component, whereas boys aspired to traditionally masculine occupations, involving a scientific, technical, or business component (Francis). These findings indicate that, although the career aspirations of adolescent

girls have become more ambitious and less gender stereotyped, overall, there is still a gender dichotomy in the career aspirations of both male and female adolescence.

In a study examining gender differences in seventh and tenth graders, Lupart, Cannon, and Telfer (2004) found results consistent with Francis (2002). When students were asked which characteristics, or work values, of future career choice were most important to them, males rated “earn a great deal of money” and “high status in society” as significantly more important than females did (Lupart et al.). In addition, females rated the opportunity to make the world a better place as an important characteristic of a future career, whereas boys did not feel this was an important characteristic (Lupart et al.). Females were also more confident in their future career choice, believing that they could “do it all,” including earning a university degree and having a family (Lupart et al.). In terms of actual career aspirations, a gender dichotomy existed, with females rating artistic and health professions as their top career choices, whereas males rated information technology, and business-related professions at the top (Lupart et al.). Results of this study indicate that a clear gender dichotomy still exists; although, females are beginning to aspire to more traditionally male occupations and are becoming more ambitious in their future career choices.

Career Aspirations: Self-Efficacy

Career aspirations may continue to reflect a traditional gender dichotomy due to perceived self-efficacy, or a belief in one’s ability to succeed within a given field. Because certain personality traits and abilities are more closely associated with one gender or another, it may be that an individual’s own self-appraisal of his or her abilities leads that individual to aspire to a certain career. In a study examining the occupational self-efficacy of 11 to 15-year-olds, it was found that boys had higher self-efficacy for traditionally male-dominated fields,

including careers in science and technology, whereas girls had higher self-efficacy for traditionally female-dominated fields, including careers in social, educational, or health services (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001). The researchers also found that those individuals with higher self-efficacy also aspired to a higher level within their desired occupation, and also were surer of the type of occupations they disliked and had no interest in pursuing (Bandura et al.). These results indicate that when individuals believe in their ability to succeed within a given occupation, they are more likely to aspire to that occupation.

Similar findings on self-efficacy have also been found with high school student who have a learning disability (LD). A relationship was found between perceived self-efficacy in a certain occupational area and interest in pursuing a career in that same occupational area (Panagos & DuBois, 1999). It was also found that adolescent's who had high self-efficacy in a particular occupational or interest area also had higher expectations for success in that same area (Panagos & DuBois). These results indicate that individuals with LD are likely to believe they will succeed in a certain occupational area when they have a strong interest in that area, and when they have a high perception of their abilities in that area. The findings on the self-efficacy of adolescence with LD are similar to the findings on self-efficacy with adolescence who do not have LD.

Not only does self-efficacy of the child or adolescent effect career aspirations and beliefs about one's ability to succeed in a chosen career field, but parental self-efficacy also plays a role in a child's career aspirations. Bandura et al. (2001) found that parental beliefs about their self-efficacy and their child's occupational aspirations were mediated by their child's own self-efficacy and academic achievement. However, it was also found that parental self-efficacy did

influence their child's academic aspirations directly, thereby indirectly influencing their children's occupational aspirations as well (Bandura et al.).

Career Aspirations: Parental Influence

Parental self-efficacy is only one way that parent's influence career aspirations in their child or adolescent. In one study examining career self-efficacy and perceived parental support in seventh and eighth graders, it was found that young adolescence who held a perception that their parents supported them had higher career self-efficacy (Turner & Lapan, 2002). This finding indicates that parents who are supportive of their children to the extent that their children perceive their support, will foster a higher sense of efficacy in their children for a certain career of interest.

In a review of literature on the extent to which parents influence their children's career aspirations, Otto and Call (1985) found several themes, including that adolescents are more likely to turn to their parents and other adults, as opposed to their siblings or peers for career advice. Furthermore, self-reports of freshman in college indicated that their parents had a moderate to major influence on their career choice (Otto & Call). Although the research does not indicate exactly how parents influence their children's career aspirations and future career choice, the research is clear that parents do have a strong influence.

Researchers have found that parental occupations influence their children's career aspirations. Trice and Knapp (1992) found that fifth and eighth graders had occupational aspirations that were more similar to their mother's current occupation, as opposed to their father's occupation. They also found that status of the maternal occupation influenced gender differences in career aspirations, due to the finding that girls aspired to their mother's occupation no matter what status the occupation was placed in, but boys aspired to their mother's

occupations more when the occupation was of higher status than their father's, or when the maternal and paternal occupational status was equal (Trice & Knapp). These results indicate that parents have the ability to influence their child's interests and career aspirations, even through something as simple as their own occupations.

Researchers have also examined how adolescent career choice differs from other decisions that teenagers make. Adolescence usually try to assert their independence, and often try to make important decisions on their own. Bregman and Killen (1999) wanted to examine if an adolescent decision about future career choice was an independent decision, or if parents had a role in the decision as well. They found that parental influence was more acceptable when changes in career choice were based on hedonistic reasons, such as when adolescence wanted to change career paths in order to "take it easy" and when the adolescent was going to make a poor career choice (Bregman & Killen). In addition, parental influence was acceptable when adolescent career choice was based on short term-goals, such as spending more time with a significant other (Bregman & Killen). This indicates that adolescents do value parental opinion and influence in their own career decisions, at least when they are uncertain about the choice and fear it may be a poor choice.

Career Aspirations: Stability

Another factor that needs to be examined in terms of career aspirations is the stability of children's career aspirations over time. Trice (1991b) found that when 8 and 11-year-olds in either rural or urban school districts were asked what they wanted to be when they grew up and then what they really thought they would be, the answers remained relatively the same. The children were also asked these same question 8 months later, and it was found that their career aspirations had remained relatively stable (Trice). This indicates that children choose relatively

realistic career aspirations that they truly believe they are capable of pursuing. Furthermore, it was found that the children from the rural school district expressed more stable career aspirations, due to the fact that they were exposed to fewer careers, whereas the children in the urban district had the opportunity to see a greater variety of careers (Trice). These results indicate that children do choose realistic career aspirations that they feel they can actually aspire to, and that rural children may have more stable career aspirations than urban children, due to the fact that they are exposed to fewer careers.

Trice (1991a) also examined adult's (aged 40 to 55 years) retrospective career aspirations to determine if their current occupations were similar to their past career aspirations. Data suggested that career aspirations in childhood and adolescence were equally likely to result in a mature career choice similar to a first career aspiration when the individual became an adult (Trice). Results also showed that the more similar the career aspiration was to the adult's paternal occupation when he or she was a child, the more likely the adult was to actually have a career within that field (Trice). This research suggests that children's career aspirations remain relatively stable over time, and that there is a strong likelihood that adult career choice will be similar to early career aspirations.

Career Aspirations: Children with LD Compared to Children Not Receiving Special Education Services

Research in the field of career development has focused a great deal on the differences in career development and aspirations between children with LD and children who do not receive special education services. Plata and Bone (1989) explored how important 15 to 18-year-olds students with and without LD believed 23 different occupations to be. It was found that students with LD do perceive occupations differently than their peers who do not have LD; specifically,

students with LD ranked skilled, semi-skilled, or unskilled occupations as more important than professional or managerial occupations, whereas the students who did not receive special education services ranked the professional or managerial occupations as more important (Plata & Bone). This indicates that adolescents with LD find less skilled, and generally lower paying occupations as more important than more skilled, and generally higher paying occupations.

In a study examining the career aspirations of early to mid-adolescence with LD compared to adolescence not receive special education services, it was found that the adolescence not receiving special education services had more stable career aspirations (Rojewski, 1996). The adolescence with LD expressed more unstable career aspirations between grades 8 and 10, with a greater number of adolescence remaining indecisive about their career aspirations over time (Rojewski). However, from early to mid-adolescence, those individuals with LD were more likely that their peers not receiving special education services to raise their occupational aspirations from a low-prestige to a higher-prestige aspiration over time (Rojewski). Compared to their peers who do not receive special education services, adolescence with LD hold less stable career aspirations and are more indecisive about their aspirations throughout their teen years.

In a study examining individuals with LD 2-years after they completed high school, Rojewski (1999) found that individuals with LD were significantly less likely to graduate, and had higher unemployment rates compared to individuals who did not have a learning disability. It was found that individuals with LD were more likely to have a job, as opposed to being enrolled in some type of postsecondary education (Rojewski). Results also showed that men with LD were more likely to aspire to moderately-prestigious occupations, whereas men who did not have LD were more likely to aspire to high-prestige careers (Rojewski). Similarly, women

with LD were more likely to aspire to low-prestige careers, whereas women without LD were more likely to aspire to high-prestige careers (Rojewski). One reason why individuals with LD aspire to lower-prestige careers compared to their peers without LD may be because they have lower self-efficacy for the abilities that the higher-prestige careers require. These findings have profound implications for individuals with LD, and professionals within the school system should be working with students with LD to raise their self-efficacy in these areas.

Research has shown that parents do influence their children's career aspirations (Otto & Call, 1985; Bregman & Killen, 1992; Trice & Knapp, 1992; Bandura et al., 2001; Turner & Lapan, 2002). It has been found with a group of moderately mentally retarded individuals that the parents of these individuals held low expectations for their children in terms of job or independent living success (Retish, 1988). This finding is extremely important, and indicates that mental health providers, as well as professionals within schools need to educate parents that children with disabilities can hold realistic, but high aspirations. If children with LD perceive that their parents have low expectations for their future success within a given career field, then it seems more likely that they will not hold high aspirations for themselves.

Research has also shown that the career aspirations of children with LD differ from those children who do not have LD, and often in negative ways (Plata & Bone, 1989; Rojewski, 1996; Rojewski, 1999). If parents do not hold high expectations for their children with LD, then it seems possible that parents may actually be influencing their child's low-prestige, less skilled, and more unstable career aspirations. If this assumption were true, it would have a significant negative impact on the future careers of children with LD.

Purpose of the Present Study

The purpose of the present study was to examine if the work personalities between adolescence with learning disabilities are similar to the work personalities of adolescence not receiving special education services and if the groups differ in self-efficacy beliefs related to how well they can perform activities compared to their peers. In addition, this study sought to determine if differences in career aspirations between adolescence with LD and those adolescence not receiving special education services are related to difference in career advisement received from parents. The final purpose of this study was to determine if parents of adolescence with learning disabilities evaluate their child's work personality in the same way their child does.

It was hypothesized that the work personalities between students with LD and students not receiving special education services would differ, and that students with LD would evaluate their abilities compared to their peers lower than students not receiving special education services. It was further hypothesized that there would be differences in career advisement between students with LD and students not receiving special education services, and that these differences would negatively impact the career aspirations of students with learning disabilities. It was also believed that parents of students with learning disabilities would differ in their evaluation of their child's work personality compared to their own child's evaluation of his or her work personality.

CHAPTER THREE

Methodology

Participants

In order to investigate the extent to which students with learning disabilities differ compared to students not receiving special education services in relation to career aspirations, work personalities, and self-efficacy, a group of high school age students was selected from a public suburban high school in upstate New York. A total of 20 high school students, ranging in age from 14 to 17 participated in this study. Out of the 20 high school age participants, 12 students were classified with an educational learning disability, whereas eight students were not receiving special education services. Out of the students with learning disabilities, five were male (three 9th graders and two 10th graders) and seven were female (three 9th graders, two 10th graders, and two 11th graders). Out of the students not receiving special education services, five students were male (three 10th graders and two 11th graders) and three students were female (one 9th grader, one 10th grader, and one 11th grader). All students volunteered to participate and parental consent and student assent was obtained.

Parents of the student participants were asked to participate as well. Of the 20 student participants, six parents elected to complete the measures, all of which were mothers of students with learning disabilities. Only 30 percent of parents sampled returned measures to the investigator.

Measures

Self-Directed Search (SDS) Form R: 4th Ed. The Self-Directed Search (SDS; Holland, 1994) is a self-administered career interest inventory, which can be completed in a group or individual format. Internal consistency coefficients (KR-20) from the 1994 edition, for a sample

of 575 female and 344 male high school students, ranged from .73 to .92 for the different career interest sections and .91 to .93 for the summary scales (Holland, Fritzsche, & Powel, 1994).

Raw scores are provided for the six personality scales, which include Realistic, Investigative, Artistic, Social, Enterprising, and Conventional (RIASEC) scales. Each personality factor is comprised of subscales, including Activities, Competencies, Occupations, and two different Self-Estimate subscales. A three letter summary code results from the rank order of factor raw scores, which can be referenced in the Self-Directed Search Career Finder booklet. This booklet yields a list of possible career choices based on the rank order of personality factors. The raw scores for the subscales and the RIASEC factors on the SDS can also be converted to standardized t-scores ($M = 50$, $SD = 10$) based on the percentile ratings listed in the manual (S. Merydith, personal communication, June 2008). T- scores and raw scores were used for analysis in the present study.

The SDS Form R raw scores were used for data analysis in order to obtain indexes for the congruency, consistency, and differentiation for both groups on the SDS. The congruence index refers to the similarity between an individual's personality and their work environment (Seligman, 1994). To establish the congruence index, student dream jobs were compared to summary occupational codes that were produced using the SDS. The highest level of congruence is found when the first and second letters of the summary code and dream job code are shared. The congruence index was measured using the Zener-Schnuelle Index of Agreement (Prince & Heisar, 2000). The consistency index was established by examining the position of the first and second letter of each participant's summary code along Holland's hexagon (Holland et al., 1994). If the two letters were adjacent, or next to each other on the hexagon, they were scored as a 3, or high. If the letters were neither adjacent nor opposite from each other on the

hexagon, they were given a score of 2, or moderate. Finally, if the letters were opposite each other on the hexagon they were scored a 1, or low. Differentiation refers to the numerical difference in raw score points on the SDS between an individual's highest and lowest career interest score. The differentiation index was calculated using the following formula: $L = \frac{1}{2} (\text{highest score} - ((2^{\text{nd}} + 4^{\text{th}})/2))$. The higher the level of differentiation, the more interested an individual is in one specific career area and the greater amount of career satisfaction that individuals will have (Seligman; Prince & Heisar).

Career Advisement Questionnaire: Adolescent and Parent Forms. The Career Advisement Questionnaire (adapted from Pastorelli et al., 2000) is a Likert-type measure designed to assess how confident an individual is about his or her own abilities in the academic, social, and self-regulatory domains. Reliability coefficients were .87 for academic self-efficacy, .75 for social efficacy, and .80 for self-regulatory efficacy (Pastorelli et al.). Participants responded to questions pertaining to how similar parent and child views are in regard to occupational preparation and how often children spoke with their parents on a number of career-related topics. The Adolescent Form contains two questions in which respondents indicate how far in school both their mother and father expect them to go, whereas on the Parent Form, respondents indicate how far in school they expect their child to go. Adolescent respondents check mark whether they think their parents expect them to achieve a high school diploma, 2-year college degree, 4-year college degree, or a graduate/professional degree. Parent respondents check mark how far in school they expect their child to go using the same four degree types. The Confidence scale contains 15 items, the Similar scale contains four items, and the Discuss scale contains six items. Respondents record their answers directly on the questionnaire by circling one of five answer choices. Within the Confidence scale, respondents

indicated how confident they are using a 5-point Likert-type scale ranging from 1 (Not Confident) to 5 (Very Confident). Within the Similar scale, respondents indicated how similar their views are to either their parents' or their child's views using a 5-point Likert-type scale ranging from 1 (Very Different) to 5 (Very Similar). Within the Discuss scale, respondents indicated how often they talk with either their parents or their child using a 5-point Likert-type scale ranging from 1 (Never) to 5 (Often). A response of 3 on any scale indicated that the respondent was Unsure of how best to respond to a particular item.

Procedures

To obtain a sample of student participants with learning disabilities, the investigator recruited participants from nine different Structured Academic Study Halls (SAS). These SAS classes were designed specifically for students with an educational disability and each class was comprised of approximately 8 to 15 students. The investigator took approximately five minutes at the beginning of each of the nine classes to inform students about this study. As an incentive for their participation, students were told that they would receive either a pizza and refreshment social or a breakfast of bagels, juice, and donuts for participating. All students were given an informed consent form to be signed by a parent if they wished to participate. The informed consent sought consent for both their child to participate, as well for one parent of each child to participate. From this pool of potential participants, 12 students (or approximately 11 percent) returned parental consent and six parents of students with learning disabilities participated by returning all measures to the investigator.

To obtain a sample of students not receiving special education services, the investigator recruited participants from general art classes. Art is a required class for all students in grades nine through twelve. The investigator recruited participants in six art classes, each consisting of

approximately 15 students. The same procedure that was used to recruit participants with learning disabilities was used to recruit students not receiving special education services. From this pool of potential participants, 8 students (or 8 percent) returned parental consent.

Student participants were required to complete the Self-Directed Search (SDS) and the Career Advisement Questionnaire: Adolescent Form. Students completed both measures within a group format during a structured study hall or during their art class at the end of the school year after all coursework was completed. Prior to the administration of the measures, the investigator handed out an assent form to each student and read aloud from the assent form. Students were required to sign and date the assent form before they could complete the measures. The investigator read aloud directions for both measures and students completed the measures at their own pace, which took approximately 30 to 45 minutes. The investigator was available to answer questions while students were completing the measures and was responsible for scoring and evaluating each student measure. Once the whole group of students had completed both measures, the investigator held a pizza and refreshment social or a breakfast, to thank the students for their participation.

Parent participants were required to complete the SDS and Career Advisement Questionnaire: Parent Form. Parent measures were mailed home, along with explicit directions on how to complete each measure, and with a self-addressed, stamped envelope so that measures could be returned to the investigator in a timely manner. Parent participants were directed to contact the investigator by phone or email if they had any questions, but none of the parent participants contacted the investigator while completing the measures. Parent measures were returned within a week of when they were originally mailed home. The investigator was responsible for scoring and evaluating each parent measure.

Data Collection and Analyses

After both measures were completed, the protocols were retained with permission of the participants for later use. The data was then compiled and analyzed through the use of SPSS version 14.0. Mean comparisons between students with learning disabilities and students not receiving special education services, as well as mean comparisons between a subset of students with learning disabilities and parents of students with learning disabilities were conducted to determine if group differences existed. Descriptive statistics were also described.

CHAPTER FOUR

Results

Shown in Table 1 are the t-score means and standard deviations for each of the six SDS scales by group, as well as the means and standard deviations for each of the three SDS indexes. Significant mean differences were obtained for the Realistic and Investigative scales ($t(18) = -2.13, p \leq .05, t(18) = -2.41, p \leq .05$, respectively; corresponding effect sizes are $d = -1.04$ and $d = -1.12$, respectively). Students with Learning Disabilities scored lower on both the Realistic and Investigative scales compared to Students Not Receiving Special Education Services. Overall, both groups scored within the average range on all six SDS scales. Students with Learning Disabilities scored lower, yet still within the average range, across the six scales. Both groups scored in the lower range of the Congruence index, and in the moderate or average range on the Consistency and Differentiation indexes.

Subscale differences for the Realistic and Investigative scales for each group were also observed. Displayed in Table 2 are the means and standard deviations for the subscales for both the Realistic and Investigative scales. A significant mean difference between Students with Learning Disabilities and Students Not Receiving Special Education Services was observed for the Realistic Self-Estimates 2 subscale ($t(18) = -4.14, p \leq .05$; corresponding effect size is $d = -1.88$). On all Realistic subscales, Students with Learning Disabilities scored lower than Students Not Receiving Special Education Services, yet they still scored within the average range. Students Not Receiving Special Education Services scored in the average range across the Realistic subscales of Competencies and Occupations, and in the above average range on the Activities, Self-Estimates 1, and Self-Estimates 2 subscales. Significant mean differences between groups were also observed for the Investigative Competency and Self-Estimates 1

subscales ($t(18) = -3.12, p \leq .05, t(18) = -2.84, p \leq .05$, respectively; corresponding effect sizes are $d = -1.40$ and $d = -1.27$, respectively). Students with Learning Disabilities scored lower than Students Not Receiving Special Education Services on all Investigative subscales, yet still scored within the Average range. Students Not Receiving Special Education Services scored in the average range across Investigative subscales, except on the Self-Estimates 1 subscale, in which they scored within the above average range.

Figure 3 illustrates the mean raw scores obtained by Students with Learning Disabilities and Students Not Receiving Special Education Services on the six SDS scales. Students with Learning Disabilities obtained a Holland Code of Artistic (raw score = 25), Social (raw score = 23), Realistic/Enterprising (raw scores = 17). In contrast, Students Not Receiving Special Education Services obtained a Holland code of Artistic (raw score = 30), Realistic (raw score = 28), Investigative (raw score = 25). Overall, Students with Learning Disabilities had a tendency to score lower on all scales, besides the Social scale, in which both groups scored relatively equally (raw scores = 23 and 24, respectively). Highest mean differences were observed on the Realistic and Investigative scales (raw score mean differences = 11 and 10, respectively), with Students with Learning Disabilities scoring lower on both scales.

Displayed in Figure 4 are the mean t-scores for Students with Learning Disabilities and Students Not Receiving Special Education Services on the six SDS scales. As illustrated, Students with Learning Disabilities obtained a Holland Code of Artistic ($t = 52.50$), Realistic ($t = 47.75$), Social ($t = 46.42$). Students Not Receiving Special Education Services obtained a Holland Code of Artistic ($t = 59.13$), Realistic ($t = 55.88$), Investigative ($t = 54.00$). In accord with that seen in Figure 1 with raw scores, the same pattern is observed with t-scores. Students with Learning Disabilities scored lower across all six SDS scales, with statistically significant

mean differences between the Realistic and Investigative scales ($t(18) = -2.13, p \leq .05, t(18) = -2.41, p \leq .05$, respectively; corresponding effect sizes are $d = -1.04$ and $d = -1.12$, respectively).

Shown in Table 3 are the means and standard deviations for each Career Advisement Variable for Students with Learning Disabilities and Students Not Receiving Special Education Services. Within items comprising the Confidence scale, Students with Learning Disabilities felt they were Confident on only two items, including their ability to learn regular physical education activities and their ability to make and keep male friends. In contrast, Students Not Receiving Special Education Services were Confident on six items, including their ability to learn sports, stand firm to peers, make and keep female and male friends, their conversational skills, and their ability to stand up for themselves. Within the Similar scale, both Students with Learning Disabilities and Students Not Receiving Special Education Services shared Mostly Similar views to their parents on the value of a college education. Neither group discussed occupational plans with their parents a significant amount. Students with Learning Disabilities did discuss vocational or trade school and career preparation possibilities other than college with their parents more than Students Not Receiving Special Education Services. A significant mean difference was obtained for the Far in School: Dad variable ($t(17) = -2.34, p \leq .05$; corresponding effect size is $d = -1.09$), whereas there was not a significant difference between groups with how far in school their mothers expected them to go.

Displayed in Table 4 are the t-score means and standard deviations for a Subset of Students with Learning Disabilities and their parents, each of whom completed the SDS. Data analyses were conducted to determine if a Subset of Students with Learning Disabilities and their parents differed on their estimates on the six SDS subscales and three indexes. A significant mean difference was obtained on the Realistic scale ($t(5) = -2.12, p \leq .10$; corresponding effect

size is $d = -0.64$). The Subset of Students with Learning Disabilities scored lower on the Realistic scale than did Parents of Students with Learning Disabilities. The Subset of Students with Learning Disabilities and their parents scored within the average range on the Realistic and Artistic scales and in the below average range on the Investigative, Social, Enterprising, and Conventional scales. Parents of Students with Learning Disabilities estimated their child's Artistic and Social skills lower than the estimates found by the Students with Learning Disabilities themselves. A Subset of Students with Learning Disabilities scored within the average range on the Congruence index, whereas their parents scored within the lower range. Both the Subset of Students with Learning Disabilities and their parents scored within the moderate to average range on the Consistency and Differentiation indexes.

Figure 5 illustrates the mean t-scores for the Subset of Students with Learning Disabilities compared to Parents of Students with Learning Disabilities. Students with Learning Disabilities obtained a Holland Code of Artistic ($t = 52.50$), Realistic ($t = 47.75$), Social ($t = 46.42$), whereas Parents of Students with Learning Disabilities obtained a Holland Code of Artistic ($t = 52.67$), Realistic ($t = 51.67$), Enterprising ($t = 43.17$). As displayed in Table 4, Figure 5 illustrates that Parents of Students with Learning Disabilities estimated their child's abilities within each scale higher than did the Subset of Students with Learning Disabilities, except for on the Artistic and Social scales.

Shown in Table 5 are the t-score means and standard deviations for the subscales comprising the Realistic scale for the Subset of Students with Learning Disabilities and Parents of Students with Learning Disabilities. Significant mean differences were observed for the Self-Estimates 1 and Self-Estimates 2 subscales ($t(5) = -3.15, p \leq .05$, $t(5) = -2.97, p \leq .05$, respectively; corresponding effect sizes are $d = -0.65$ and $d = -1.45$, respectively). The Subset of

Students with Learning Disabilities scored lower on both scales compared to Parents of Students with Learning Disabilities. For the Subset of Students with Learning Disabilities, scores on all subscales fell within the average range. Parents of Students with Learning Disabilities had scores that fell within the average range on the Activities, Competencies, and Occupations subscales. Their scores were above average on both Self-Estimates scales.

Displayed in Table 6 are the means and standard deviations for each Career Advisement Variable for the Subset of Students with Learning Disabilities and Parents of Students with Learning Disabilities. Significant mean differences were not observed on items comprising the Confidence and Discuss scales. However, both the Subset of Students with Learning Disabilities and their parents felt Confident on their own personal ability or their child's ability to learn sports skills, learn regular physical education activities, and their child's ability to express their opinions. Furthermore, a Subset of Students with Learning Disabilities felt Confident in their ability to make and keep female friends, whereas their parents felt Confident in their child's ability to stand up for him or herself. Within the Discuss scale, a Subset of Students with Learning Disabilities felt that they Sometimes discuss occupational career plans with their parents and that they talk seriously with their mothers about occupations that would like to enter. Parents of Students with Learning Disabilities were Unsure how often these discussions took place. A significant mean difference was observed on one item in the Similar scale, Similar: Future Occupation ($t(5) = 3.16, p \leq .05$; corresponding effect size is $d = 0.68$), indicating that Students with Learning Disabilities scored higher on this variable than did Parents of Students with Learning Disabilities. Although not significant, the Subset of Students with Learning Disabilities felt that they held Mostly Similar views to their parents on the value of a college education, whereas their parents were Unsure about if their child's view matched their own. A

significant mean difference was also observed on the Far in School: Mom variable ($t(6) = -1.58$, $p \leq .05$; corresponding effect size is $d = -0.27$), indicating that Parents of Students with Learning Disabilities believed their child would go less far in school than Students with Learning Disabilities felt they would go in school.

CHAPTER FIVE

Discussion

The career aspirations of adolescence with learning disabilities differ in significant ways compared to the aspirations of their peers without a disability. Specifically, students with LD ranked skilled, semi-skilled, or unskilled occupations as more important than professional or managerial occupations, whereas students without a disability ranked these latter occupations as more important (Plata & Bone, 1989). In addition, research has shown that individuals with LD are significantly less likely to graduate from high school and have higher unemployment rates compared to individuals without a disability (Rojewski, 1999). The present study lends further evidence in agreement with past literature.

Results of the present study indicate that there are differences in work personalities between adolescence with LD and adolescence not receiving special education services. Adolescence with LD obtained a Holland Code of Artistic, Realistic, Social, whereas adolescence not receiving special education services obtained a Holland Code of Artistic, Realistic, Investigative. Students with LD endorsed fewer items across all scales, which led to lower elevations in their Holland Code profile. Specifically, students with LD endorsed fewer items across the Activities, Competencies, and Self-Estimates subscales. This indicates that students with LD were not as differentiated in their work personalities as were students not receiving special education services.

Although students with LD and students not receiving special education services shared Artistic and Realistic work personalities, the profile of students with LD was not as elevated as was the profile of students not receiving special education services. In addition, students not receiving special education services endorsed significantly more items on the Investigative scale.

When the scales were examined further, it was determined that differences between groups on the Realistic and Investigative scales were attributed to the fact that students with LD did not endorse as many items on the Competency scale and rated their skills and abilities compared to peers lower on the Self-Estimates subscales. Students with learning disabilities rated their manual skills and scientific abilities lower than students not receiving special education services, indicating that they hold lower beliefs, or self-efficacy, in their abilities in these areas compared to their peers. Super (1985) believed that self-concept played a vital role in an individual's developmental career trajectory and that higher self-concept gave the individual confidence to ultimately gain career satisfaction. If adolescence with LD have lower self-concept in certain domains, than they are not as likely to engage in activities that are out of their comfort zone. Because they are not as confident in their abilities, adolescence with LD may not be as satisfied with their career choices.

Differences in self-efficacy between groups were also noted on the Career Advisement Questionnaire: Adolescent Form. Adolescence with LD endorsed only two areas in which they felt confident, in comparison to adolescence not receiving special education services, who endorsed six areas in which they felt confident. Adolescence with LD felt confident in their ability to learn regular physical education activities, as well as with their ability to make and keep male friend. Adolescence not receiving special education services felt confident in their ability to learn sports, stand firm to peers, make and keep female and male friends, their conversational skills, and their ability to stand up for themselves. These adolescence felt more confident than their peers with LD in social and self-regulatory domains. Because individuals with LD have limited self-confidence, they may not be as likely to self-advocate for their needs and they may not be as likely participate in activities in which they do not already feel confident.

Research has shown that individuals with higher self-efficacy aspire to a higher level within their desired occupation and that they are also surer of occupations they have no interest in pursuing (Bandura et al., 2001). Further, a relationship has been found between perceived self-efficacy in a specific occupational area and interest in pursuing a career in that same occupational area (Panagos & DuBois, 1999). Those individuals who are more confident in their own abilities are more successful in choosing a career that fits their personality and achieve at a higher level within their given field. Individuals with learning disabilities seem to be at a disadvantage if they hold lower self-efficacy beliefs in a number of domains compared to their peers without disabilities.

Although results did not indicate statistically significant differences in career advisement received from parents between groups, students with LD felt they discussed vocational or trade school and career preparation possibilities other than college with their parents more often than students not receiving special education services. This finding is important because from their child's point of view, parents of students with LD do not seem to place as great an emphasis on obtaining a four-year college degree. Parents of students with LD seem more willing to openly discuss a variety of post-secondary options and this may be because they think their child cannot succeed in a traditional four-year college. Findings suggest that students not receiving special education services do not discuss options other than college with their parents, because attending college is the expected norm for these students.

Half of the students with LD had parents that also completed the SDS and Career Advisement Questionnaire. For this group of students with LD, parents produced a Holland Code of Artistic, Realistic, Enterprising. Parents viewed their children with LD as more Enterprising than the adolescence themselves felt they were. Enterprising Individuals are

described as being highly self-confident and ambitious (Holland, 1997). It seems that parents of students with LD view their children as more self-confident than their children themselves feel. Although both the subset of students with LD and their parents endorsed items on the Realistic scale, the subset of students with LD rated their beliefs compared to peers about their Realistic traits, namely their mechanical abilities and manual skills, lower than their parents did. Parents hold higher self-efficacy beliefs for their children than their children hold for themselves.

The present study lends further evidence to support previous findings that the career aspirations of adolescence with learning disabilities differ from the aspirations of adolescence not receiving special education services (Plata & Bone, 1989; Rojewski, 1999). The most significant implication of the present study is that adolescence with learning disabilities hold lower self-efficacy about their abilities in a number of domains compared to their peers. Because adolescence with LD do not feel as confident in their abilities, they may be less likely to perform certain work related activities. It was expected that career aspirations would differ between adolescence with LD and adolescence not receiving special education services based on parental messages. An unexpected finding of this study was that differences in career aspirations can really be attributed to differences in self-efficacy. This study lends further support for Bandura et al.'s (2001) and Super's (1985) theories that engagement in activities and behaviors is dependent upon an individual's self-confidence. School professionals working with students with learning disabilities need to find a way raise their students' self-confidence in work-related activities.

Limitations of the Study

There are a number of limitations to the current study. The sample of individuals who volunteered for this study was taken from a sample of convenience. There was no control for

socioeconomic status, gender, or geographical location. In addition, a small number of participants volunteered to take part in this study. A larger sample size may have produced results with greater statistical significance. Further, parent participants completed both measures independently and away from the investigator. The investigator had no way to control for parental interpretation of the measures. In addition, only 30 percent of parents elected to return their measures to the investigator. Perhaps the most significant limitation of the present study is that it was a cohort study, and thus, a cause and effect relationship between a classification of LD and differing career aspirations could not be established.

Future Research

The present study had a small sample size. Replicating the present study with a much larger sample size may produce greater statistically significant results. In addition, this research could be expanded to look at varying age levels to determine if middle school age or twelfth grade students respond to the measures in similar ways. Future research could also look at different populations of students, such as adolescence diagnosed with Attention Deficit Hyperactivity Disorder or students receiving special education services under a different educational classification category. A longitudinal study could also be conducted to determine if adolescence with learning disabilities enter into a career that matches their dream job and/or work personality determined by their SDS summary code. Future research may also explore transition planning and what is done to foster self-efficacy in adolescence with learning disabilities. To establish a cause and effect relationship between a classification of LD, career aspirations, and work personality, future research may focus on a longitudinal study where participants are enrolled at a young age, prior to a classification of LD, and followed throughout their educational career.

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Appendix A

Parent Consent Form

Dear Parent/Legal Guardian,

My name is Cara Stromberg and I am a graduate student in the School Psychology program at Rochester Institute of Technology. I am conducting a study that looks at the extent to which parents can help their child choose a career. I need your input in this important project. This study is important for adolescents, as it will tell us how they are guided to enter the world of work or continue their education. If you agree to participate, I will send you a short survey form and a brief career interest inventory for you to complete about your child. Your child will receive the adolescent forms of these same measures to complete. All results will be kept confidential and only group results will be reported.

The completion of all forms will take approximately 10-15 minutes. Your child will complete these forms at school in a group setting, but will not miss any educational activities. Again, all results will be kept confidential. You and your child's participation in this research is voluntary and either of you may revoke permission at any time, without repercussion.

We really feel that this is a worthy project. A possible benefit of you and your son/daughter's participation is that both of you will experience how the scientific method is applied to solve "real world" issues. This research will also generate new knowledge on helping adolescence think about life after high school and the world of work. I will share general group results in the fall through the PTSA newsletter.

This project has been approved by both the East Irondequoit Central School District and Rochester Institute of Technology. Your child has already expressed an interest and willingness to participate in this project by bringing this letter home to you.

If you have any questions, please feel free to contact me at 339-1555 voicemail box #4412 or my faculty advisor, Dr. Scott Merydith, Chair of the School Psychology Department, at 475-7980.

Appreciatively,

Cara Stromberg
School Psychologist Intern
East Irondequoit Central School District
Cara_Stromberg@eastiron.monroe.edu

(Please sign and return the following)

I, _____, the parent/legal guardian of, _____ agree to participate in the Career Aspirations Study, as well as agree to let my child participate. I understand that my child's participation and my participation is voluntary and that research results will be kept confidential.

Parent/Legal Guardian Signature

Date

Appendix B

Adolescent Assent Form

I am conducting a study that looks at the extent to which your parents help you choose a career. This study is important, because it helps you think about life after high school, including the world of work and how you plan to enter into the workforce or post-secondary school.

As part of this study, you will be asked to complete a short questionnaire, as well as a career interest inventory. The completion of all forms will take approximately 10-15 minutes. All results of this research will be kept confidential, which means that your name will not appear on any of the measures that you complete and that only I will see those measures once they are completed. Your individual results will not be reported; only group results will be reported. Participation is voluntary and if you decide that you no longer wish to participate in the study, you can withdraw your permission at any time, and there will not be any consequences.

For taking the time to complete these measures, I will hold an after school pizza and refreshment social or a breakfast before school. I will alert you to the day and time once all students have completed these measures.

You can ask me questions at any time during the administration of these questionnaires. If you do have questions at a later time, please feel free to see Mr. Kurdziel, school psychologist, in the counseling office, who will be able to relay your concerns to me.

I, _____, agree to participate in the Career Aspirations Study. I understand that my participation is voluntary and that I can withdraw from this study at any time, without consequence.

Student Signature

Date

Appendix C

Career Advisement Questionnaire: Adolescent Form

Age: _____

Grade: _____

Gender: M F

I. Use the scale below to indicate HOW CONFIDENT you are to do the following activities:

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Not Confident	A Bit Confident	Unsure	Confident	Very Confident

1. Finish homework assignments by deadlines?	1	2	3	4	5
2. Concentrate on school subjects?	1	2	3	4	5
3. Take class notes of class instruction?	1	2	3	4	5
4. Organize your school work?	1	2	3	4	5
5. Remember information presented in class and textbooks?	1	2	3	4	5
6. Motivate yourself to do school work?	1	2	3	4	5
7. Learn sport skills?	1	2	3	4	5
8. Learn regular physical education activities?	1	2	3	4	5
9. Stand firm to your peers who are asking you to do something unreasonable or inconvenient?	1	2	3	4	5
10. Live up to what your parents expect of you?	1	2	3	4	5
11. Make and keep female friends?	1	2	3	4	5
12. Make and keep male friends?	1	2	3	4	5
13. Carry on conversation with others?	1	2	3	4	5
14. Express your opinions when other classmates disagree with you?	1	2	3	4	5
15. Stand up for yourself when others are annoying you or hurting your feelings?	1	2	3	4	5

II. How SIMILAR are your views to your parent's views about the following areas:

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Very Different	Mostly Different	Unsure	Mostly Similar	Very Similar

1. What you should do with your life?	1	2	3	4	5
2. What kind of occupation you should enter?	1	2	3	4	5
3. How you should prepare for a career?	1	2	3	4	5
4. The value of a college education?	1	2	3	4	5

III. During the past year, how often did you talk with your parents about the following:

1
2
3
4
5
 Never Rarely Unsure Sometimes Often

	1	2	3	4	5
1. Discuss occupational career plans with your parent or guardian?	1	2	3	4	5
2. Talk seriously with your mother about what occupation you want to enter?	1	2	3	4	5
3. Talk seriously with your father about what occupation you want to enter?	1	2	3	4	5
4. Discuss plans for vocational or trade school with your parent or guardian?	1	2	3	4	5
5. Discuss plans for college with your parents or guardian?	1	2	3	4	5
6. Discuss career preparation possibilities other than college with your parent or guardian?	1	2	3	4	5

IV. Please place an X on the line next to the response that best indicates your answer to the following questions:

1. How far in school do you think your mother expects you to go?

- _____ high school diploma
- _____ 2-year college degree
- _____ 4-year college degree
- _____ graduate/professional degree

2. How far in school do you think your father expects you to go?

- _____ high school diploma
- _____ 2-year college degree
- _____ 4-year college degree
- _____ graduate/professional degree

Appendix D

Career Advisement Questionnaire: Parent Form

Relationship to Student: _____

Please Indicate the Number of Children Living in Your Household: _____

Types of parents in household: mother father stepmother stepfather

I. Use the scale below to indicate HOW CONFIDENT you are in your child's ability to do the following activities:

1
2
3
4
5
Not
A Bit
Unsure
Confident
Very
Confident
Confident

Confident

	1	2	3	4	5
1. Finish homework assignments by deadlines?	1	2	3	4	5
2. Concentrate on school subjects?	1	2	3	4	5
3. Take class notes of class instruction?	1	2	3	4	5
4. Organize his/her school work?	1	2	3	4	5
5. Remember information presented in class and textbooks?	1	2	3	4	5
6. Motivate him/herself to do school work?	1	2	3	4	5
7. Learn sport skills?	1	2	3	4	5
8. Learn regular physical education activities?	1	2	3	4	5
9. Stand firm to his/her peers who are asking your child to do something unreasonable or inconvenient?	1	2	3	4	5
10. Live up to what you expect of your child?	1	2	3	4	5
11. Make and keep female friends?	1	2	3	4	5
12. Make and keep male friends?	1	2	3	4	5
13. Carry on conversation with others?	1	2	3	4	5
14. Express his/her opinions when other classmates disagree with your child?	1	2	3	4	5
15. Stand up for him/herself when others are annoying your child or hurting his/her feelings?	1	2	3	4	5

II. How SIMILAR are your views to your child's views about the following areas:

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Very Different	Mostly Different	Unsure	Mostly Similar	Very Similar

1. What your child should do with his/her life?	1	2	3	4	5
2. What kind of occupation your child should enter?	1	2	3	4	5
3. How your child should prepare for a career?	1	2	3	4	5
4. The value of a college education?	1	2	3	4	5

III. During the past year, how OFTEN did your child do the following:

<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
Never	Rarely	Unsure	Sometimes	Often

1. Discuss occupational career plans with you?	1	2	3	4	5
2. Talk seriously with his/her mother about what occupation he/she wants to enter?	1	2	3	4	5
3. Talk seriously with his/her father about what occupation he/she wants to enter?	1	2	3	4	5
4. Discuss plans for vocational or trade school with you?	1	2	3	4	5
5. Discuss plans for college with you?	1	2	3	4	5
6. Discuss career preparation possibilities other than college with you?	1	2	3	4	5

IV. Please place an X on the line next to the response that best indicates your answer to the following question:

1. How far in school do you expect your child to go?

- _____ high school diploma
- _____ 2-year college degree
- _____ 4-year college degree
- _____ graduate/professional degree

Tables

Table 1

Mean Differences between Students with Learning Disabilities and Students Not Receiving Special Education Services on the Self-Directed Search (SDS)

SDS Occupational Codes	Group				
	Students with Learning Disabilities (n = 12)		Students Not Receiving Special Education Services (n = 8)		M Diff.
	M	SD	M	SD	
Types					
Realistic	47.75	9.49	55.88	6.20	-8.13*
Investigative	44.83	8.80	54.00	7.54	-9.17*
Artistic	52.50	10.54	59.13	6.40	-6.63
Social	46.42	8.21	48.88	7.79	-2.46
Enterprising	43.08	9.96	48.00	9.40	-4.92
Conventional	44.25	11.51	48.00	8.96	-3.75
Indexes					
Congruence	2.83	1.80	2.88	1.73	-0.04
Consistency	2.50	0.80	2.63	0.52	-0.13
Differentiation	41.75	33.71	38.75	25.21	3.00

*p<.05

Note: SDS raw scores have been converted to t-scores (M = 50, SD = 10). Congruence and consistency are based on raw scores. For congruence, the scale ranges from 0 (low) to 6 (high). For consistency, the scale ranges from 1 (low) to 3 (high). Differentiation is based on percentiles, with lower percentiles indicating an undifferentiated or flat profile and higher percentile indicating greater differentiation.

Table 2

Mean Differences between Students with Learning Disabilities and Students Not Receiving Special Education Services on the Self-Directed Search Realistic and Investigative Subscales

SDS Subscales	Group				
	Students with Learning Disabilities (n = 12)		Students Not Receiving Special Education Services (n = 8)		M Diff.
	M	SD	M	SD	
Realistic					
Activities	54.25	9.53	59.63	6.91	-5.38
Competencies	47.92	11.63	53.75	10.48	-5.83
Occupations	55.67	5.63	56.38	4.69	-0.71
Self-Estimates 1	54.50	12.67	59.25	10.18	-4.75
Self-Estimates 2	46.92	8.93	64.25	9.53	-17.33*
Investigative					
Activities	49.42	7.08	55.50	8.72	-6.08
Competencies	45.33	5.48	53.75	6.52	-8.42*
Occupations	49.00	8.76	53.00	7.62	-4.00
Self-Estimates 1	47.67	7.00	57.63	8.63	-9.96*
Self-Estimates 2	49.67	13.26	56.00	9.99	-6.33

*p<.05

Note: SDS subscale raw scores have been converted to t-scores (M=50, SD=10).

Table 3

Mean Differences between Students with Learning Disabilities and Students Not Receiving Special Education Services on the Career Advisement Questionnaire: Adolescent Form

Career Advisement Variables	Students with Learning Disabilities (n = 12)		Students Not Receiving Special Education Services (n = 8)		M Diff.
	M	SD	M	SD	
Confidence: Finish Homework	3.50	1.24	3.75	1.28	-0.25
Confidence: Concentrate	3.33	0.98	3.63	0.92	-0.29
Confidence: Take Notes	3.75	1.22	3.25	1.16	0.50
Confidence: Organize	3.09	1.30	3.88	1.25	-0.78
Confidence: Remember	3.17	1.03	3.38	1.30	-0.21
Confidence: Motivate	3.42	1.31	3.50	1.07	-0.08
Confidence: Learn Sports	3.83	1.34	4.00	1.20	-0.17
Confidence: Learn PE Activities	4.08	1.16	3.88	1.13	0.21
Confidence: Stand Firm to Peers	3.58	1.16	4.25	1.16	-0.67
Confidence: Live Up to Parental Expectations	3.67	1.44	3.50	1.07	0.17
Confidence: Make/Keep Female Friends	4.25	0.75	4.25	1.49	0.00
Confidence: Make/Keep Male Friends	3.42	1.51	4.00	0.76	-0.58
Confidence: Conversational Skills	3.58	1.16	4.25	0.71	-0.67
Confidence: Express Opinions	3.83	1.27	3.75	1.04	0.08
Confidence: Stand Up for yourself	3.75	1.60	4.13	1.13	-0.38
Similar: Life	3.55	1.04	3.38	1.06	0.17
Similar: Future Occupation	3.64	0.92	3.88	0.99	-0.24
Similar: Career Preparation	3.55	1.13	3.75	1.16	-0.20
Similar: Value of College	4.09	1.22	4.38	0.92	-0.28
Discuss: Career Plans	3.92	1.16	3.63	1.51	0.29
Discuss: Mother	3.67	1.07	3.75	0.89	-0.08
Discuss: Father	2.83	1.27	3.00	1.60	-0.17
Discuss: Vocational/Trade School	3.42	1.24	2.63	1.85	0.79
Discuss: College	3.83	1.11	3.88	1.81	-0.42
Discuss: Career Preparation Other than College	4.00	1.35	3.63	1.51	0.38
Far in School: Mom	2.58	1.08	3.14	0.90	-0.56
Far in School: Dad	2.27	0.90	3.25	0.89	-0.98*

*p<.05

Note: Career Advisement Questionnaire scores are based on a 1 through 5 Likert-type scale. Items responses within the Confidence scale range from 1 (Not Confident) to 5 (Very Confident). Item responses within the Similar subscale, range from 1 (Very Different) to 5 (Very Similar). Item responses within the Discuss subscale, range from 1 (Never) to 5 (Often). For items within the Far in School Subscale, 1 is high school diploma, 2 is 2-year college degree, 3 is 4-year college degree, and 4 is graduate/professional degree.

Table 4

Mean Differences between a Subset of Students with Learning Disabilities and Parents of Student with Learning Disabilities on the Self-Directed Search (SDS)

SDS Occupational Codes	Group				
	Subset of Students with Learning Disabilities (n = 6)		Parents of Students with Learning Disabilities (n = 6)		M Diff.
	M	SD	M	SD	
Realistic	45.33	11.94	51.67	7.84	-6.33 [†]
Investigative	40.00	4.10	42.83	9.75	-2.83
Artistic	55.50	12.50	52.67	11.27	2.83
Social	41.33	4.18	39.17	6.94	2.17
Enterprising	39.67	9.46	43.17	9.58	-3.50
Conventional	37.83	9.95	42.67	10.97	-4.83
Congruence	3.00	2.16	2.75	1.26	0.25
Consistency	2.50	0.84	2.83	0.41	-0.33
Differentiation	67.67	27.72	51.00	43.33	16.67

[†]p<.10

Note: SDS raw scores have been converted to t-scores (M = 50, SD = 10). Congruence and consistency are based on raw scores. For congruence, the scale ranges from 0 (low) to 6 (high). For consistency, the scale ranges from 1 (low) to 3 (high). Differentiation is based on percentiles, with lower percentiles indicating an undifferentiated or flat profile and higher percentile indicating greater differentiation.

Table 5

Mean Differences between a Subset of Students with Learning Disabilities and Parents of Students with Learning Disabilities on the Self-Directed Search Realistic Subscales

	Group				M Diff.
	Subset of Students with Learning Disabilities (n = 6)		Parents of Student with Learning Disabilities (n = 6)		
Realistic Subscales	M	SD	M	SD	
Activities	52.33	10.00	47.83	8.50	4.50
Competencies	47.67	9.89	46.50	5.13	1.17
Occupations	54.50	3.99	54.17	6.52	0.33
Self-Estimates 1	53.00	10.58	59.50	9.40	-6.50*
Self-Estimates 2	45.00	8.20	61.83	15.05	-16.83*

*p<.05

Note: SDS subscale raw scores have been converted to t-scores (M=50, SD=10).

Table 6

Mean Differences between a Subset of Students with Learning Disabilities and Parents of Students with Learning Disabilities on the Career Advisement Questionnaire: Adolescent and Parent Forms

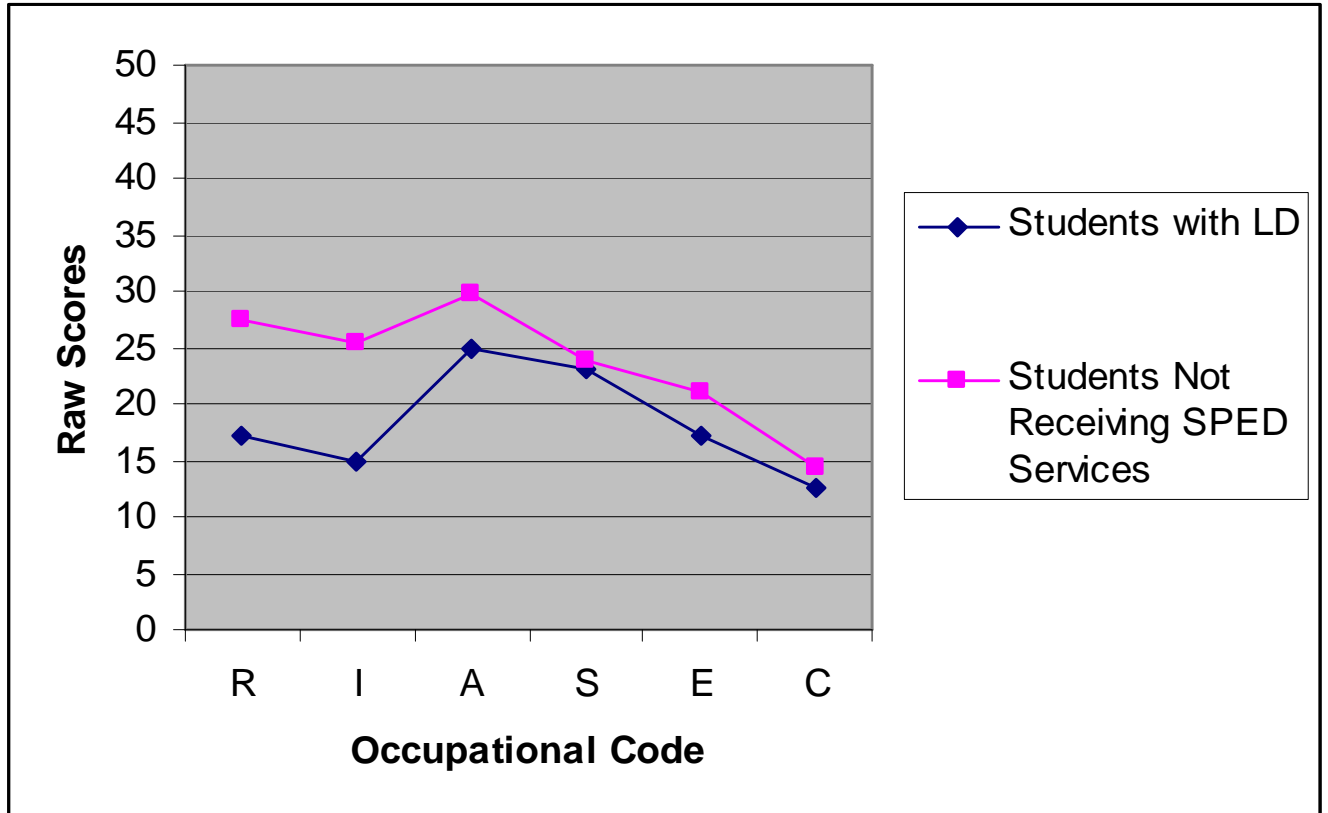
Career Advisement Variables	Subset of Students with Learning Disabilities (n = 6)		Parents of Students with Learning Disabilities (n = 6)		M Diff.
	M	SD	M	SD	
Confidence: Finish Homework	3.20	1.30	3.00	1.58	0.20
Confidence: Concentrate	3.40	1.14	3.00	1.87	0.40
Confidence: Take Notes	3.60	1.14	3.40	1.82	0.20
Confidence: Organize	3.00	1.22	3.00	1.87	0.00
Confidence: Remember	3.00	1.22	2.80	1.64	0.20
Confidence: Motivate	3.40	1.14	3.00	1.87	0.40
Confidence: Learn Sports	4.00	1.41	4.80	0.45	-0.80
Confidence: Learn PE Activities	4.00	1.41	4.80	0.45	-0.80
Confidence: Stand Firm to Peers	3.00	1.41	3.60	1.67	-0.60
Confidence: Live Up to Parental Expectations	3.40	1.52	3.40	1.82	0.00
Confidence: Make/Keep Female Friends	4.00	0.71	3.40	1.52	0.60
Confidence: Make/Keep Male Friends	3.20	1.48	3.40	1.14	-0.20
Confidence: Conversational Skills	3.40	1.14	3.80	1.64	-0.40
Confidence: Express Opinions	4.00	1.41	4.40	1.34	-0.40
Confidence: Stand Up for yourself	3.60	1.95	4.40	1.34	-0.80
Similar: Life	3.00	1.22	3.80	1.64	-0.80
Similar: Future Occupation	3.80	1.30	2.80	1.64	1.00*
Similar: Career Preparation	3.40	1.52	3.20	2.05	0.20
Similar: Value of College	4.20	0.84	3.00	1.87	1.20
Discuss: Career Plans	4.17	0.98	3.50	1.97	0.67
Discuss: Mother	4.00	0.63	3.17	1.72	0.83
Discuss: Father	2.83	1.17	2.33	1.37	0.50
Discuss: Vocational/Trade School	4.00	0.89	2.17	1.47	1.83
Discuss: College	4.00	0.89	3.17	1.72	0.83
Discuss: Career Preparation Other than College	4.33	0.82	3.33	1.86	1.00
Far in School: Mom	2.33	1.21	2.67	1.21	-0.33*

* p<.05

Note: Career Advisement Questionnaire scores are based on a 1 through 5 Likert-type scale. Items responses within the Confidence scale range from 1 (Not Confident) to 5 (Very Confident). Item responses within the Similar subscale, range from 1 (Very Different) to 5 (Very Similar). Item responses within the Discuss subscale, range from 1 (Never) to 5 (Often). For items within the Far in School Subscale, 1 is high school diploma, 2 is 2-year college degree, 3 is 4-year college degree, and 4 is graduate/professional degree.

Figures

Figure 3. Raw score mean differences between students with learning disabilities and students not receiving special education services on the Self-Directed Search (SDS).



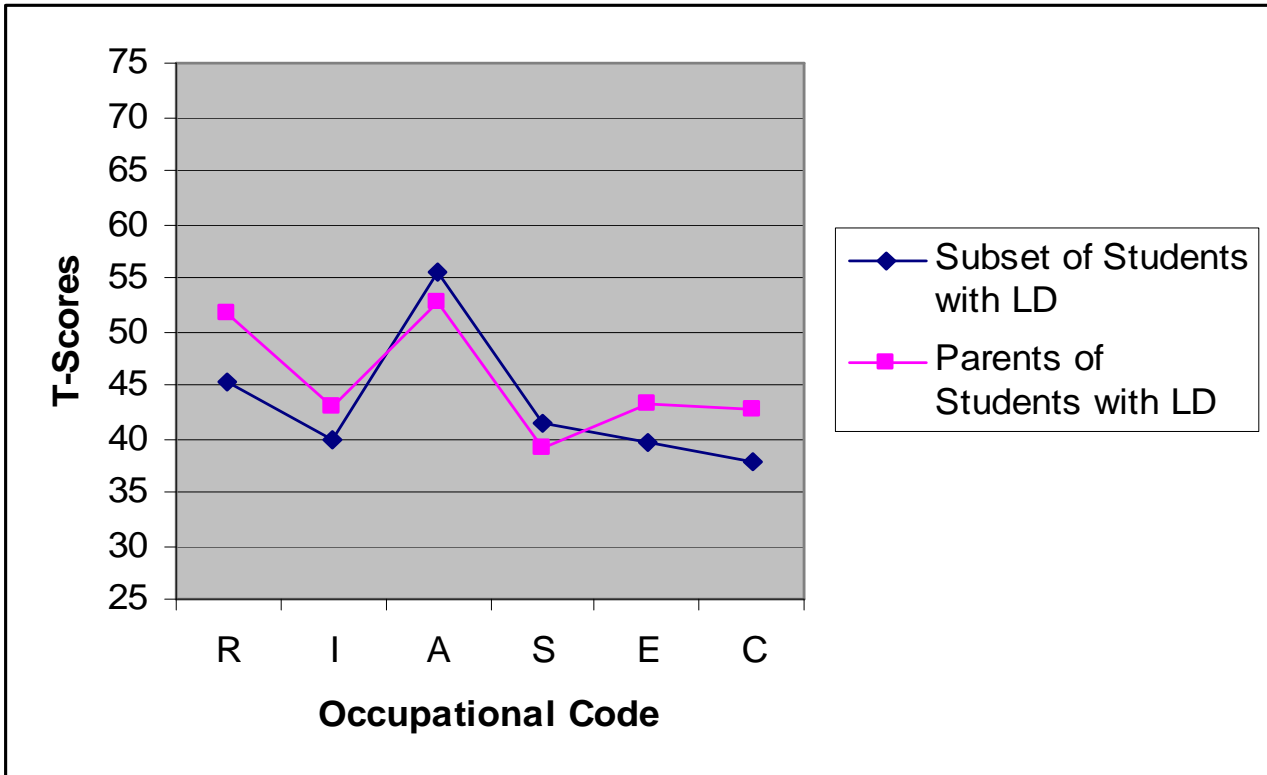
Note: The SDS Occupational Code abbreviation RIASEC stands for Realistic, Investigative, Artistic, Social, Enterprising, and Conventional work personality types.

Figure 4. Mean differences between students with learning disabilities and students not receiving special education services on the Self-Directed Search (SDS).



Note: The SDS Occupational Code abbreviation RIASEC stands for Realistic, Investigative, Artistic, Social, Enterprising, and Conventional work personality types. SDS subscale raw scores have been converted to t-scores (M=50, SD=10).

Figure 5. Mean differences between a subset of students with learning disabilities and parents of students with learning disabilities on the Self-Directed Search (SDS).



Note: The SDS Occupational Code abbreviation RIASEC stands for Realistic, Investigative, Artistic, Social, Enterprising, and Conventional work personality types. SDS subscale raw scores have been converted to t-scores (M=50, SD).