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The Effects of Transition Planning and Postsecondary Outcomes for Students with Disabilities in an Urban School Division

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**The Effects of Transition Planning and Postsecondary Outcomes for Students with
Disabilities in an Urban School Division**

by

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Old Dominion University in Partial Fulfillment of the
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Approved by;

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ABSTRACT

THE EFFECTS OF TRANSITION PLANNING AND POSTSECONDARY OUTCOMES FOR STUDENTS WITH DISABILITIES IN AN URBAN SCHOOL DIVISION

Janice James-Mitchell
Old Dominion University, 2015
Director: Dr. Steve Myran

According to The National Center on Secondary Education and Transition (2004), young adults with disabilities continue to face significant difficulties in securing jobs, accessing postsecondary education, living independently, fully participating in their communities, and accessing necessary community services. Furthermore, studies have indicated that IEPs generally do not always contain transition related information. In this dissertation study, the postsecondary outcome data from Indicator 13 and Indicator 14 and student attendance at IEP meetings for students with disabilities were examined.

There were two levels of research to this study. In level one, there was an overall picture of the data by completing various descriptive analyses. In level two, differences were investigated as well as relationships analyzed. Logistic regression was used to analyze the data in level two. Logistic regression was used to predict the presence of an outcome based on values of a set of predictor variables. From the collection of IEP student attendance data, the researcher examined the different effects of participation. The IEP attendance data were also included in the regression model to show the strength of student attendance.

In conclusion, students with disabilities were working after high school (50%-69% of variance), enrolled in a two or four year college or university (50% chance), or enrolled in some type of postsecondary school or training program (50% chance). Moreover, adding gender was significant in being employed and not being employed (71.3% chance), enrolling in a two or four year college or university (72.1% chance), or enrollment in some type of postsecondary school or

training program (75.9% chance). Ethnicity was non-significant, suggesting that ethnicity had no real measured influence on postsecondary employment, enrollment in a two or four year college or university, or enrollment in some type of postsecondary school or training program. Finally, students with disabilities attended their IEP meeting at a high rate (92%).

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Chapter One: Introduction

Background

Federal and state regulations mandate transition planning and transition services to assist students with disabilities reach identified postsecondary outcomes. However, many students with disabilities continue to struggle with obtaining positive postsecondary outcomes. According to the National Center on Secondary Education and Transition, the U. S. Department of Education, Office of Special Education and Rehabilitative Services (OSERS), has stressed the importance of improving transition services nationally since the mid-1980s. Moreover, specific language on transition was included in the Individuals with Disabilities Education Act (IDEA) of 1990 and 1997 amendments; the underlying principle for establishing these new provisions was based on the acknowledgment that many students with disabilities were exiting high school unprepared for adult life.

The Virginia Department of Education (VDOE) completes an Annual Performance Report (APR) that provides information specific to measuring the state's progress on indicators defined by the Office of Special Education Programs (OSEP) of the United States Department of Education. Two specific indicators address transition: Indicator 13 and Indicator 14. Indicator 13 measures the percent of youth aged 16 and above with an Individualized Education Program (IEP) that includes coordinated, measurable, annual IEP goals and transition services that will reasonably enable the student to meet the postsecondary goals (Commonwealth of Virginia, Part B State Performance Plan for 2005-2010). In collecting the data for Indicator 13, school division staff complete record reviews on students with disabilities. The record reviews focus on coordinated, measurable, annual IEP goals and transition services. Seven effective transition practices statements are identified on a spreadsheet to be checked with either an answer of yes,

no, or at times NA. The focus of Indicator 14 is the percent of youth who had IEPs, are no longer in secondary school and who have been competitively employed, enrolled in some type of postsecondary school, or both, within one year of leaving high school (Commonwealth of Virginia, Part B State Performance Plan for 2005-2010). A survey was developed by VDOE for the purpose of collecting postsecondary outcome data on youth who are no longer in secondary school, and who have been competitively employed, enrolled in some type of postsecondary school, or both, within one year of leaving high school. Telephone interviews are conducted by special education school division staff; twenty-seven questions were asked of the student/participant. The data collected from Indicator 13 and Indicator 14 are used to determine if transition planning and transition services are working for students with disabilities. With this data collection underway, school divisions are now being held accountable for students with disabilities transition outcomes.

In order to maximize achievement among students with disabilities, it is important to provide students with disabilities effective transition services. Having supervised three transition specialists to assist with facilitating transition planning and transition services in IEP meetings, we developed a more comprehensive understanding of Indicator 13 and Indicator 14. Indicator 13 addressed youth aged 16 and above with an IEP that includes coordinated, measurable, annual IEP goals, and Indicator 14 addressed postsecondary outcomes for students with disabilities. From the data collected from Indicator 13 and Indicator 14, it was evident that we could do a better job in preparing our students with disabilities for postsecondary outcomes. From what was learned from the data, the transition specialists began attending most if not all of the students IEP meetings to make sure transition planning and transition services were discussed during the meeting. Also, there was an increase in the number of students attending

their IEP meetings. Finally, we partnered with the community to provide students with employability skills. More of the students began to benefit from the changes that were initiated.

The President's Commission on Excellence in Special Education (2002) found that a higher percentage of students with disabilities are unemployed upon leaving school compared to their nondisabled peers. Moreover, many students with disabilities leave school without successfully earning any type of diploma, and they attend postsecondary programs at rates lower than their nondisabled peers. The President's Commission on Excellence in Special Education made four recommendations after reviewing the post-secondary results for students with disabilities and effective transition services. The following recommendations were included. First, simplify federal transition requirements in the Individuals with Disabilities Education Act (IDEA); the provisions should provide clear steps for integrating school and non-school transition services, and closely link transition services to the goals in each student's IEP. Second, mandate federal interagency coordination of resources; multiple federal policies and programs must be required to work together to improve competitive employment outcomes and increase access to higher education for students with disabilities. Third, create an advisory committee to examine the reauthorization of the Rehabilitation Act. Forth, support higher education faculty, administrators and auxiliary service providers to more effectively provide and help students with disabilities to complete a high quality post-secondary education. Finally, the commission stressed the need for continued data collection and related research to develop transition related practices; Indicator 13 and Indicator 14 data collection will assist in this endeavor.

According to the President's Commission on Excellence in Special Education, transition planning and transition services are not being implemented to the fullest extent

possible When transition planning and transition services are not part of the students IEP, it will be difficult to assist students with disabilities in meeting their goals after high school. It is evident that transition is an issue that is at the forefront of special education; research has supported this. As parents, students, educators, and outside/community agencies, the goal must be to make sure student transition needs will be met.

Statement of the Problem

Federal and state regulations identify transition planning and transition services as an important part of students with disabilities life. It is identified as important because students with disabilities must have transition planning and transition services to assist them with achieving their postsecondary goals once the graduate from high school. Accordingly, preparation for the transition from high school to employment, postsecondary education, or even independent living is of great significance for students with disabilities.

According to The National Center on Secondary Education and Transition (2004), young adults with disabilities continue to face significant difficulties in securing jobs, accessing postsecondary education, living independently, fully participating in their communities, and accessing necessary community services. Furthermore, studies have indicated that IEPs generally do not always contain transition related information. In this dissertation study, the researcher will examine the postsecondary outcomes for student with disabilities by collecting data from Indicator 13 and Indicator 14, as well as collecting data on student attendance at IEP meetings. The data collected were used to determine if transition planning and transition services are effective in postsecondary outcomes for students with disabilities.

Purpose and Significance of the Study

The main purpose of this study is to determine the effects of transition planning and transition services on postsecondary outcomes for students with disabilities. The secondary purpose is to examine the attendance of students with disabilities at their IEP meetings. There is a continued need to examine transition planning and transition services for students with disabilities to see if it is effective.

This topic has particular significance because it examines the outcomes of students with disabilities after high school. If a student with a disability is not able to obtain and keep employment, obtain higher level academic skills, or just being able to take care of their daily independent needs once they exit high school, what will be the consequences for society and that student? Moreover, this study is important because currently little is known about post-secondary career planning for students with disabilities and what impacts such planning has on student outcomes. Currently, policy mandates the planning and collection of outcome data, but little is known about impacts of such planning. This study fills gaps between policy, practice, and theory.

The findings of this study will determine if transition planning and transition services are effective, and will also examine the potential impacts of students with disabilities attendance at IEP meetings on post-secondary outcomes. Special education administrators and special education transition staff will be able to see if transition is working, and will be able to modify existing programs or provide staff development to school special education staff.

Research Questions

The data collected and analyzed will answer the following research questions:

- 1) Is there a significant relationship between transition planning as measured by Virginia's Indicator 13 Checklist and
 - a) students who have been competitively employed as measured by Indicator 14 survey results?
 - i) Does gender further differentiate this relationship?
 - ii) Does ethnicity further differentiate this relationship?
 - iii) Does student attendance in IEP meetings further differentiate this relationship?
 - b) enrolled in some type of post-secondary school, or both, within one year of leaving high school as measured by Indicator 14 survey results?
 - c) Does gender further differentiate this relationship?
 - d) Does ethnicity further differentiate this relationship?
 - e) Does student attendance in IEP meetings further differentiate this relationship?

Overview of Methodology

The setting of the study was a large urban school division in Virginia. A non-experimental design was used, that utilized a type of regression analysis to analyze the data from Indicator 13 and 14, as well as the data collected from the IEP student attendance document. The data in this study were derived from preexisting data collected from the Indicator 13 records review checklist, and from the results of Indicator 14 survey. Data were collected from the IEP checklist to record the student's attendance at the IEP meeting. A sample of state data collected from Indicator 13 and Indicator 14 was used. From Indicator 13, data were collected on students with disabilities age 14 and up; however, all students were not

used because the focus was on seniors age 18 and above during the 2006-2007 and 2007-2008 school year. From Indicator 14, postsecondary outcome data were taken from survey results of students with disabilities within one year of leaving high school; specific questions were analyzed to show the postsecondary outcome.

There were two levels of research to this study. In level one, there is an overall picture of the data by completing various descriptive analyses. In level two, differences were investigated as well as relationships analyzed. Logistic regression was used to analyze the data in level two. Logistic regression was used to predict the presence of an outcome based on values of a set of predictor variables. The independent or predictor variable (Indicator 13) was used to determine the dependent or outcome variable (Indicator 14). From the collection of IEP student attendance data, the researcher examined the different effects of participation. The IEP attendance data were also included in the regression model to show the strength of student attendance.

Limitations and Delimitations

Limitations

The major limitation of this study may be attrition. Indicator 14 uses a telephone survey to contact students with disabilities that graduated from high school for over a year. There is a chance that students have moved, or the telephone number has changed. Using preexisting data may be of concern as well; the data collected at that time were not collected by the researcher. The researcher was the only person collecting student IEP attendance data; given that these are data not collected electronically, there is an inherent risk of data entry error.

Delimitation

The major delimitation of this study may be that the study is only limited to one state and one school division. The data will only show what the effects of transition planning and transition services are on postsecondary outcomes for students with disabilities. Even though two years of data are sufficient for this study, it would be beneficial to have data for three to five years because change may be seen.

Definition of Terms

The following definitions are provided to describe major terms used in the study. The definitions are intended to present a better understanding of how the researcher intended for the term to be understood.

1. Individualized Education Program (IEP) - a written summary of students with disabilities current level of functioning, goals and objectives/benchmarks, and special education and related service.
2. Indicator 13 - measures the percent of youth aged 16 and above with an IEP that includes coordinated, measurable, annual IEP goals and transition services that will reasonably enable the student to meet the postsecondary goals (Commonwealth of Virginia, Part B State Performance Plan for 2005-2010).
3. Indicator 14 - the percent of youth who had IEPs, are no longer in secondary school and who have been competitively employed, enrolled in some type of postsecondary school, or both, within one year of leaving high school (Commonwealth of Virginia, Part B State Performance Plan for 2005-2010).
4. postsecondary outcomes – the period after high school to employment and/or postsecondary education

5. students with disabilities – a student that has met the criteria from a disability category recognized by the state definition
6. transition – the change from secondary education to postsecondary programs, work, and independent living
7. transition planning - a process designed to plan for life after graduation, through identifying student interests, preferences, instructional needs and supports
8. transition services - a coordinated set of activities for youth with disabilities that promote movement from school to post-high school activities, including postsecondary education, vocational education, integrated employment (including supported employment), continuing and adult education, adult services, independent living, or community participation (IDEA, 1990).

Summary

Due to the number of students with disabilities not meeting their goals after high school, it is imperative that school divisions monitor students with disabilities transition planning and transition services while in school. Research has identified transition as a national concern that must be examined. In order to improve students with disabilities chances in obtaining and keeping a job, enrolling in some type of postsecondary education, or just being able to live independently, the role of transition must be at the forefront of special education.

Chapter Two: Review of the Literature

Introduction

For many students, the goal after graduation is to obtain a job or attend an institution of higher learning, yet this may not be the case for some. According to Everson, Zhang, & Guillory (2001), the transition from school to adulthood is often more difficult for high school students with disabilities. Students with disabilities face an uncertain future when it comes to meeting postsecondary goals. Therefore, special education teachers and leaders are responsible for adequately and appropriately preparing students with disabilities with a successful transition from high school to institutions of higher learning or the workforce. With federal and state regulations in place, transition services are mandated for every student with a disability; specific language on transition and transition requirements were mandated in IDEA 1990, 1997, and 2004 amendments. Several states, including the state of Virginia, have enlisted the help of special education consultants such as Dr. Ed O'Leary who has been working in schools as a special education professional for over thirty years. Dr. O'Leary developed the Transition Outcomes Project to assist school divisions in meeting IDEA transition services requirements, evaluate the effectiveness of providing transition services through the IEP process, and use results to identify strategies to improve graduation rates and postsecondary outcomes for students with disabilities (Sitlington & Clark, 2006). Sitlington and Clark have acknowledged the Transition Outcomes Project as a recommended practice in transition.

For this chapter, transition and the law, the IEP and transition, transition planning, and transition services are examined. A summary of the integration of these topics will provide an overall picture of transition as it relates to special education high school students and graduates

with disabilities. It is evident that transition is a topic of interest and concern that is at the forefront of special education; this literature review will support this.

Background to the Problem

Before federal law was enacted, students with disabilities received minimal services or none at all. As federal regulations governing special education were enacted, free and appropriate public educational services were provided to students with disabilities. The Education for All Handicapped Children Act of 1975, commonly known as P.L 94-142, placed the first mandate to make transition services part of a high school student's IEP. School divisions were to prepare students with disabilities to leave school and enter the adult world. Even though several more regulations were enacted, students with disabilities continued to have difficulty with achieving postsecondary outcomes.

The National Council on Disability (NCD) published its first study on education in 1989, *The Education of Students with Disabilities: Where Do We Stand?* According to NCD (2000) it was found that students with disabilities and their families often have a difficult time accessing appropriate adult services and/or postsecondary education and training programs upon leaving high school; effective transition planning for high school students with disabilities can facilitate their successes in adult lives; graduates with disabilities are more likely to be employed following school if (1) comprehensive vocational training is a primary component of their high school program and (2) they have a job secured at the time of graduation; there are insufficient partnerships between business community and schools for the purpose of enhancing employment opportunities for students with disabilities; parent participation during high school facilitates the successful transition of students with disabilities from school to adult life. Some of the same findings continue to be true today in the area of transition. The

unemployment, under education, and continued substantial dependence on parents, social isolation, and lack of involvement in community-oriented activities characteristic of many individuals with disabilities are factors that foster continued dependence among youth in transition (NCD, p. 16).

In 1993, the Office of Special Education Programs (OSEP) began monitoring the implementation of the transition services provisions of IDEA. The monitoring activities included the following:

1. review and approval of transition services provisions of IDEA – Part B State Plan submitted by each state,
2. review and approval of state and territorial legislation, policy guidance, and monitoring procedures relative to transition services, and
3. on site monitoring of the states policies and procedures (Williams & O’Leary, 2001).

On March 3, 1995, OSEP issued Memorandum 95-13, Monitoring Procedures of the Office of Special Education Programs, which stated that monitoring efforts would be directed toward four requirements that were identified as having the greatest impact on student results (Williams & O’Leary). One of the four requirements identified in this memorandum was the development of a statement of needed transition services no later than the age of 16. Two transition performance indicators were established by OSEP to measure and monitor individual states progress: 1) examine educational and transitional services and results for children with disabilities who are 3 to 17 years of age and are receiving special education and related services, and 2) examine educational results, transition services, postsecondary placement and employment status for individuals with disabilities, 18-21 years of age who are receiving or who have received special education and related services (IDEA, 2004).

Every year, the Virginia Department of Education (VDOE) completes an *Annual Performance Report* (APR) that provides information specific to measuring the state's progress on indicators defined by the Office of Special Education Programs (OSEP) of the United States Department of Education. In the APR, there are four transition indicators from which data are taken. Indicator one and two addresses the graduation and dropout rate, and 13 addresses youth aged 16 and above with an IEP that includes coordinated, measurable, annual IEP goals, and 14 addresses postsecondary outcomes for students with disabilities. As we live in the age of accountability, school divisions must take notice of students with disabilities school and postsecondary performance.

Transition and the Law: A Historical Look

Before Federal Law

Students with disabilities were educated in state operated schools or large state institutions before federal regulations governing special education were enacted. Students with physical and mental disabilities were isolated and excluded from public schools and their nondisabled peers for decades. Students with disabilities received minimal services that were provided at the discretion of the school, if they were allowed to attend. According to Martin, Martin, and Terman (1996), prior to 1970, millions of children with disabilities were either refused enrollment or were inadequately served in the public schools. Prior to 1950, there were few federal laws authorizing services to students with disabilities. The following acts provided financial and educational services to students with disabilities:

- National Defense Education Act of 1958 (P. L. 85-926) provided financial support to colleges and universities for training leadership personnel in teaching children with mental retardation;

- National Defense Education Act of 1963 (P. L. 85-926) provided grants to train college teachers and researchers in a broader array of disabilities;
- The Elementary and Secondary Education Act (ESEA) of 1965 (P.L 89-313) provided subsidized direct services to selected populations in public elementary and secondary schools (Title I funds);
- The Elementary and Secondary Education Act (ESEA) of 1965 (P.L 89-313) –Title VI of ESEA provided grants to states to initiate, expand, and improve programs for educating children with disabilities; and
- The Rehabilitation Act of 1973, Section 504 (P. L. 93-112) provided that any recipient of federal assistance must end discrimination in the offering of its services to persons with disabilities, which included state and local education agencies.

Despite supplementary funds and mandatory laws, many children with disabilities remained unserved or underserved in the public schools (Martin, Martin, and Terman, 2006).

Education for All Handicapped Children Act of 1975

In 1975, Congress passed one of the most comprehensive education laws in the history of the United States, the Education for All Handicapped Children Act of 1975, commonly known as P.L 94-142. This law placed the first mandate to make transition services part of a high school student's IEP. According to P.L 94-142, transition services can be defined as the preparation of students with disabilities to leave school and enter the adult world.

IDEA

In 1990, the Individuals with Disabilities Education Act (IDEA: P.L. 101-476) amended P.L. 94-142. Under this law, transition services were to begin at age 16. Moreover, a statement of transition services needed to prepare the student for post-school outcomes and, when

appropriate, must be included in the IEPs of younger students (Atonis, deFur, & Conderman, 1998). IDEA 1997, (P.L. 105-17) was more detailed and several major transition requirements were mandated:

- By age 14, a student's IEP must include a statement of transition service needs and a course of study.
- By age 16, a student's IEP must include a statement of needed transition services.
- The IEP must describe how the school will provide instruction, related services, community experiences, and employment.
- The plan must identify interagency responsibilities or linkage to be in place before the student leaves school.
- Families, young adults with disabilities, school staff, adult service agencies, and other community members must be involved in developing the transition plan.
- The transition plan must focus on postsecondary outcomes that are based on the needs, preferences, and interests of the young adult with disabilities and his or her family.
- Parents must be notified one year prior to a student reaches age of majority that she/he will reach age of majority and what that change may mean for the IEP process (Morningstar, Lattin, & Sarkesian, 1995).

Finally, IDEA 2004 (P.L. 108-466) moved transition more significantly toward a curricular focus by defining transition services as a coordinated set of activities focused on improving the academic and functional achievement of the child with disability to facilitate the child's movement from school to post-school activities (Baer, Flexer, & Dennis, 2007). IDEA 2004 also included several other transition requirements that were mandated:

- Beginning not later than the first IEP to be in effect when the child turns 16, or younger if determined appropriate by the IEP Team, and updated annually thereafter, the IEP must include:
 - Appropriate measurable postsecondary goals based upon age-appropriate transition assessments related to training, education, employment and, where appropriate, independent living skills;
 - The transition services (including courses of study) needed to assist the child in reaching those goals; and
 - Beginning not later than one year before the child reaches the age of majority under State law, a statement that the child has been informed of the child's rights under Part B, if any, that will transfer to the child on reaching the age of majority,
- Added the requirement to invite the child to the IEP Team meeting when purposes includes consideration of postsecondary goals,
- Deleted the requirement that an LEA take other steps if an invited agency does not attend an IEP meeting during which transition services will be discussed, and

- Added the requirement for consent prior to inviting a representative of any participating agency likely to be responsible for providing or paying for transition services to attend a child's IEP Team meeting.

Students are required to have documentation of their disability to access services in post high school settings. The required age for transition planning is no longer age 14 and many educators are concerned about this change; age 16 may be too late in requiring the transition planning process (Kosine, 2007). With federal law in place, transition services should assist in promoting successful postsecondary outcomes.

Career and Technical Education and Students with Disabilities

According to Stodden, Conway, and Chang (2003), completion of some type of postsecondary education that includes vocational-technical training, significantly improves students with disabilities chances of securing meaningful employment. Outcomes for students with disabilities are shown to be better for employment, earnings, and economic success if their secondary education includes career and technical education (Harvey, 2002). The following vocational education acts provided workforce education for students with disabilities:

- The Vocational Education Act of 1963 (P.L. 88-210) provided funds for individuals that were considered mentally retarded, deaf, or otherwise disabled (amended in 1968, and 1976);
- Carl D. Perkins Vocational Education Act of 1984 (P.L. 98-524) provided access to all students including special populations while addressing the needs of the economy (amended the Vocational Act of 1963, replaced amendments of 1968 and 1976); and
- Carl D. Perkins Vocational and Technology Education Act of 1998 (P.L. 105-332)

established guidelines to increase state accountability to make certain of equal access for special populations.

Another noteworthy piece of legislation that provided students with the knowledge and skills to transition from school to career oriented work or further education was the *School to Work Opportunities Act of 1994*. The main components of this legislation included: integration of academics and occupational learning, work experience, structured training, career guidance, and a variety of work based learning activities (Threeton, 2007). Unfortunately, funding ceased for this act in October of 2001.

What Does the Research Say About Transition?

There have been studies completed on effective transition practices that address postsecondary outcomes and methods to improve student outcomes. In general, studies indicated that vocational education, paid work experience, parent involvement, and interagency collaboration had a positive impact on student outcomes. The National Longitudinal Transition Study (NLTS) offered a way to examine post-school outcomes from a longitudinal perspective with a nationally representative sample of youth with disabilities; this study was completed in two cycles of interviews – NLTS (Wave One) and NLTS2 (Wave Two) It also allowed the examination of diverse post-school outcomes. The results of two key postsecondary outcomes of youth with disabilities will be reviewed: employment and postsecondary education.

In the first NLTS study, Blackorby and Wagner (1996) analyzed data regarding trends in the employment, wages, postsecondary education, and postsecondary independence of youth with disabilities in their first five years after high school. According to Blackorby & Wagner, competitive employment rose 11 percentage points for youth with disabilities; it lagged significantly behind the employment rate of youth without disabilities. When education data

were analyzed, youth with disabilities had been out of school up to two years; only 14% were reported to have attended some type of postsecondary school during the preceding year, compared with 53% for youth without disabilities who had been out of school about the same length of time. (Blackorby & Wagner).

The employment of youth with disabilities has been a primary concern of educators. According to the NLTS2 (NLTS2, 2005) study, at some time since leaving high school, almost eight of ten out of school youth with disabilities have been engaged in postsecondary education, paid employment, or training to prepare them for employment. About seven of ten out of school youth with disabilities have worked for pay at some time since leaving high school, and four and ten were employed during the time of the study; this rate is significantly below the 63% employment rate among same age out of school youth without disabilities (2005).

A good education plays an important part in getting and keeping a job. Postsecondary education has become increasingly important for youth with disabilities, who often leave high school poorly prepared for work. According to the NLTS2 (NLTS2, 2005) about three of ten out of school youth with disabilities have taken postsecondary education classes since leaving high school, with one of five currently attending a postsecondary school at the time of the study. Moreover, this current rate of attending postsecondary school is less than half that of their peers without disabilities.

Other studies have found that practices with an emphasis on vocational training and interagency collaboration have resulted in significant outcomes for students with disabilities. Harvey (2002) found that youth with disabilities who participated in vocational education while

in high school earned more wages than their peers with disabilities who did not participate in vocational education.

There are obstacles to program effectiveness in secondary special education programs. A study completed by Washburn-Moses (2006) examined the effectiveness of secondary education as it relates to transition planning for students with disabilities; this was one of the four focuses of the study. A survey was mailed to a stratified random sample of 378 high school teachers of students with learning disabilities in the state of Michigan. Participants rated transition planning for their students the lowest, 31.5% responded that it needs improvement. On the quality of transition planning for students, they were working on improving this area; teachers stressed collaboration with other special education teachers or county and district-wide officials, the need for training and coordination were needed to improve transition planning, the need for more options for students, more involvement, and more time to implement transition planning. They suggested more involvement on the part of parents, students, and community agencies. Results suggest problems in lack of program coherence and lack of options for students, which lead to recommendations for reform (Washburn-Moses).

Individualized Education Program (IEP) and Transition

It is mandated that the IEP must include a statement of appropriate measurable postsecondary goals based upon age appropriate transition assessments related to training, education, employment, and, where appropriate, independent living skills, and the transition services (including courses of study) needed to assist the student in reaching those goals. Transition planning assists the student with planning his/her course of study (classes the student will take), and the classes the student will take should lead to postsecondary goals. This decision regarding course of study should be based on the student's strengths, preferences, and

interests. However, deFur (2003) reported that few IEP's actually reflect best practice as it relates to transition.

Age appropriate assessments are conducted to assist students with disabilities in determining postsecondary outcomes that are of interest to them. The information gathered from the assessments becomes an integral component of the student's transition plan. The NCD (2000) identified assessing student needs before developing a student centered transition plan.

According to Neubert (2003), transition assessment is an ongoing process that assists students with disabilities comprehend their strengths, interests and needs in relation to educational, vocational, and postsecondary environments. Examples of transition assessment methods include analysis of background information, interviews and questionnaires, psychometric instruments (standardized tests and inventories), work samples, curriculum based assessment techniques, and situational assessment (Sitlington & Clark, 2006). Transition assessment methods assist IEP teams in developing appropriate postsecondary goals and objectives, to learn about the student and the student's career goals, to provide information relevant to the student's preferences, interests, needs, and strengths, and to assist in developing a meaningful summary of performance. Assessment data should be collected on an ongoing basis, and reviewed annually for progress using a variety of assessment methods.

The students' IEP must include appropriate measurable postsecondary goals based upon age-appropriate transition assessments related to training, education, employment and, where appropriate, independent living skills. Moreover, the IEP must include the transition services (including courses of study) needed to assist the child in reaching those goals (IDEA 2004). Education will assist the student with planning for postsecondary education. Employment will assist the student in obtaining an immediate job, as well as assisting the student with a career choice. Finally, independent living will assist the student with functioning in an adult

environment.

Transition Planning

Transition planning is a process designed to plan for life after graduation, through identifying student interests, preferences, instructional needs and supports. It is important to initiate transition planning early to allow time for planning and accessing support services needed for the future. A transition plan is developed for the student as part of the IEP process, and it involves a team of people who have worked with the student during high school. The transition plan provides a framework for identifying, planning, and carrying out activities that will help the student make a successful transition to adult life. It includes long range postsecondary outcomes, a course of study, and the transition services that the student will need. The specific needs of the student for postsecondary services should determine who is invited to the IEP meeting; it is imperative that community agencies be included in the IEP meeting when appropriate. NLTS2 (2004) findings suggest that transition planning requirements are being addressed for the large majority of students with disabilities. According to school staff, planning for the transition to adult life occurs for almost 90% of students with disabilities in secondary school.

Parents play a major role in identifying the appropriate transition needs of the student as well. They assist in identifying employment, post-school education and training, independent living, social, recreational, and transportation options prior to the student's exit from school. The parent should support the student, and be actively engaged with transition planning and decision making. Among the 85% of parents participating in the transition planning process, two-thirds report being satisfied with their level of participation and about one-third of participating parents report that the IEP and transition planning processes for their children do

not provide as much opportunity for their involvement in decisions as they would like (NLTS2, 2004).

The National Transition Network, Institute on Community Integration (1996) developed a Transition Checklist for the IEP planning process. The checklist helps guide members of the IEP transition team. In addition, this tool includes transition activities for parents and students to consider when preparing transition plans with the IEP team. The student's skills and interests are used to determine which activities on the checklist are applicable in assessing the student's transition into adulthood. Nonetheless, the checklist reinforces the responsibility for carrying out the specific transition activities which are determined at the IEP transition meeting. Below is a modified version of the Transition Checklist, which demonstrates its significance in the planning process of the IEP.

Four to Five Years Before Leaving the School District

- Identify personal learning styles and the necessary accommodations to be a successful learner and worker.
- Identify career interests and skills, complete interest and career inventories, and identify additional education or training requirements.
- Explore options for post- secondary education and admission criteria.
- Identify interests and options for future living arrangements, including supports.
- Learn to communicate effectively your interests, preferences, and needs.
- Be able to explain your disability and the accommodations you need.
- Learn and practice informed decision making skills.
- Investigate assistive technology tools that can increase community involvement and employment opportunities.

- Broaden your experiences with community activities and expand your friendships.
- Pursue and use local transportation options outside of family.
- Investigate money management and identify necessary skills.
- Acquire identification card and the ability to communicate personal information.
- Identify and begin learning skills necessary for independent living.
- Learn and practice personal health care.

Two to Three Years Before Leaving the School District

- Identify community support services and programs (Vocational Rehabilitation, County Services, Centers for Independent Living, etc.)
- Invite adult service providers, peers, and others to the IEP transition meeting.
- Match career interests and skills with vocational course work and community work experiences.
- Gather more information on post secondary programs and the support services offered; and make arrangements for accommodations to take college entrance exams.
- Identify health care providers and become informed about sexuality and family planning issues.
- Determine the need for financial support (Supplemental Security Income, state financial supplemental programs, Medicare).
- Learn and practice appropriate interpersonal, communication, and social skills for different settings (employment, school, recreation, with peers, etc.).
- Explore legal status with regards to decision making prior to age of majority.
- Begin a resume and update it as needed.
- Practice independent living skills, e.g., budgeting, shopping, cooking, and housekeeping.

- Identify needed personal assistant services, and if appropriate, learn to direct and manage these services.

One Year Before Leaving the School District

- Apply for financial support programs. (Supplemental Security Income, Independent Living Services, Vocational Rehabilitation, and Personal Assistant Services).
- Identify the post-secondary school you plan to attend and arrange for accommodations.
- Practice effective communication by developing interview skills, asking for help, and identifying necessary accommodations at post secondary and work environments.
- Specify desired job and obtain paid employment with supports as needed.
- Take responsibility for arriving on time to work, appointments, and social activities.
- Assume responsibility for health care needs (making appointments, filling and taking prescriptions etc.).
- Register to vote and for selective service (if a male).

As discussed earlier, transition planning is a process designed to plan for life after graduation by identifying student interests, preferences, instructional needs, and supports. The transition plan provides a framework for the students' successful transition to adult life.

Moreover, the Transition Checklist is a list of transition activities that students, parents, and school personnel may wish to consider when preparing transition plans with the IEP team.

Although transition planning is clearly defined, and there are tools for use with transition planning, nearly 20% of secondary school students with disabilities have programs that are only somewhat well suited or not at all well suited to meet their transition postsecondary outcomes (NLTS2, 2004). In the next section, seven statements of effective transition planning practices

have been identified by the VDOE in Indicator 13. The following section will provide a picture of transition planning as it relates to Indicator 13.

Indicator 13

Previously stated, the VDOE completes an *Annual Performance Report* (APR) that provides information specific to measuring the state's progress on indicators defined by the Office of Special Education Programs (OSEP) of the United States Department of Education every year. In looking at effective transition, the 13th Indicator requires school divisions to collect data on secondary transition IEP requirements. Indicator 13 measures the percent of youth aged 16 and above with an IEP that includes coordinated, measurable, annual IEP goals and transition services that will reasonably enable the student to meet the postsecondary goals (Commonwealth of Virginia, Part B State Performance Plan for 2005-2010). In collecting the data for Indicator 13, school division staff will complete record reviews on students with disabilities. The record reviews focus on coordinated, measurable, annual IEP goals and transition services. Seven effective transition practices statements were identified on a spreadsheet to be checked with an answer of yes, no, or at times NA. The Indicator 13 records review checklist includes the following seven statements:

- Measurable postsecondary goals were identified for employment, education, training, and as needed, independent living.
- Annual IEP goals were developed to reasonably enable the child to meet postsecondary goals.
- The IEP included a coordinated set of transitions services.
- Transition services were identified that focused on improving the academic and functional achievement to facilitate the child's movement from school to post school

activities. The reviewers will focus on instruction, related services, community experiences, employment and/or functional vocational evaluations, daily living skills and/or post-school adult living objectives/activities.

- To the extent appropriate, with the consent of the parent or youth who has reached the age of majority, a representative from any participating agency(ies) likely to provide or pay for services were invited to the IEP meeting.
- Transition services were included in courses of study focusing on improving academic and functional achievement of the child to facilitate their movement from school to post-school.
- Age appropriate assessments were considered in the development of postsecondary goals.

Student Attendance in IEP Meetings

In 1990, legislation established a requirement to invite students with disabilities to participate in their IEP meetings whenever transition services were being discussed, starting at age 14 (Defur, 2003). Not all students have attended their IEP meeting, and when they did attend, their active involvement appears to be limited. According to Williams and O'Leary (2001) schools do not invite students to their own IEP meetings. If students are not invited to attend their IEP meeting, how effective will transition planning and transition services be?

Effective transition planning must include the student. The Local Education Agency (LEA) must invite a child with a disability to attend the child's IEP meeting if a purpose of the meeting will be the consideration of the postsecondary goals for the child and the transition services needed to assist the child in reaching those goals (IDEA 2004). Moreover, the most significant reason for including students in their IEP meetings is to aid the student in developing his/her

self-determination skills. During the IEP meeting, the focus should be on the student's interests, preferences, instructional needs, and supports; therefore, the student must be there to communicate them. The student should be an active participant in all discussions and decisions, and the student should be at the IEP meeting to assist in developing his/her IEP. In a three year study conducted by Martin, Marshall, and Sale (2004), the perceptions of 1,638 secondary IEP meeting participants from 393 IEP meetings was examined. Students attended seventy percent of the IEP meetings (277 out of 393). There were significant differences between the responses of the IEP team members when the students did or did not attend their meetings. The results indicated significantly higher scores when students attended their IEP meeting. Statements from the survey such as "I knew the reason for the meeting," "I felt comfortable in saying what I thought," (parents, general educators, and related service personnel), produced significantly high scores. When students attended the IEP meeting, they talked significantly more about the student's strengths and needs, parents indicated that they did understand what was said at the meetings significantly more, and general educators felt better about the meetings. The "other" category reported helping to make decisions less when students did not attend. According to Arndt, Konrad, and Test (2006),

When students participate in choosing their IEP and transition goals based on their preferences and interests, they feel invested in the process. As a result, they may be more likely to pursue and attain their goals (p. 194).

Transition Services

Transition services means a coordinated set of activities for a child with a disability that is designed to be within a results-oriented process that is focused on improving the academic and functional achievement of the child with a disability to facilitate the child's movement from

school to post-school activities, including postsecondary education, vocational education, integrated employment (including supported employment), continuing and adult education, adult services, independent living or community participation (IDEA 2004). Transition services is based on the child's individual needs, taking into account the child's strengths, preferences, and interests; moreover, transition services includes instruction, related services, community experiences, the development of employment and other post-school adult living objectives, and if appropriate, acquisition of daily living skills and provision of a functional vocational evaluation (IDEA 2004). Transition services should be coordinated in a timely fashion while the student is still in high school, if not earlier (Kosine, 2007).

Transition services should be based on current assessments of the student's academic, vocational, and daily living skills. Transition services should and can be delivered through curricular and extracurricular activities in many different settings. The more the adult students practice their skills in real life situations, the more the student will become more comfortable in the way they feel. Transition services are identified by having a conversation with the student, the student's parent, and school personnel about the student's career goals and interests. Needed services and supports are then determined to meet those career goals, interests, and preferences.

Indicator 14

As the VDOE continues to measure the states progress on transition indicators as defined by OSEP, Indicator 14 addresses postsecondary outcomes for students with disabilities. The focus of Indicator 14 is the percent of youth who had IEPs, who are no longer in secondary school and who have been competitively employed, enrolled in some type of postsecondary school, or both, within one year of leaving high school (Commonwealth of Virginia, Part B

State Performance Plan for 2005-2010). Youth who are no longer in school were given the term “school leaver.” A survey was developed by VDOE for the purpose of collecting postsecondary outcome data on youth who are no longer in secondary school, and who have been competitively employed, enrolled in some type of postsecondary school, or both, within one year of leaving high school. Telephone interviews were conducted by school division staff; twenty-seven questions were asked of the student/participant. Completed surveys for Indicator 14 were surveys that obtained information about the student or some contact was made. Measurable targets have been set by the VDOE through 2007-2010; the percent of youth who had IEPs, who are no longer in secondary school and who have been competitively employed, enrolled in some type of postsecondary school, or both, within one year leaving high school will be 60% in 2007, 65% in 2008, 70% in 2009, and 85% in 2010.

Summary of Performance

The summary of performance requires that prior to the student graduating or exceeding the age of eligibility, the school division must provide the student with a summary of the student’s academic achievement and functional performance, including recommendations on how to assist the student in meeting postsecondary goals. Academic achievement addresses what the student knows, functional performance addresses the student’s behavior across different environments, and recommendations for attaining postsecondary goals are addressed. Someone who knows the student should complete the summary of performance.

Summary of Literature Review

Federal law is vital in assisting students with disabilities prepare for life after high school. In 1975, Congress passed one of the most comprehensive education laws in the history of the United States, the Education for All Handicapped Children Act of 1975 known as P.L.

94-142. Transition services were mandated to be a part of a high school student's IEP.

Transition services virtually went from none, to some, to mandated by federal legislation.

Transition studies have indicated that effective transition planning and services lead to postsecondary outcomes. McAfee and Greenawalt (2001) believe that early transition planning, student/parent involvement and ownership of plans, age and goal appropriate environments, and a current directory of transition resources have been emphasized as essential elements in effective transition practices (as cited by Zhang, Ivester, & Katsiyannis, 2005). The National Council on Disability (NCD, 2000) study in 1989, *The Education of Students with Disabilities: Where Do We Stand?* reported that effective transition planning for high school students with disabilities can facilitate their success in adult life.

As school divisions continue to be held accountable for students learning, Indicator 13 and 14 holds school divisions responsible for effective transition planning and preparing students with disabilities for successful postsecondary outcomes, so there must be appropriate and individualized transition services and planning for disabled youth. Research shows obstacles for secondary special education programs, but it also shows that students with disabilities are making some gains in their postsecondary outcomes. Educators are progressing in the area of transition services; however, there is room for improvement.

Chapter Three: Methodology

According to data from the National Longitudinal Transition Study 2 (SRI, 2005), students with disabilities have a lower high school graduation rate and attendance rate in institutions of higher learning; moreover, they have difficulty with obtaining and keeping a job. It is paramount that school divisions provide students with disabilities effective transition planning and services to promote postsecondary outcomes.

The purpose of this study is to determine the effects of transition planning and transition services on postsecondary outcomes for students with disabilities. Moreover, the data from Indicator 13 and 14 will be analyzed to predict the strength of the relationship between the two Indicators. Indicator 13 will be analyzed by using various sources of evidence to see if transition planning and transition services of youth aged 16 and above with an IEP included coordinated, measurable, annual IEP goals and transition services that will reasonably enable the students to meet their postsecondary goals. Indicator 14 will survey youth who are no longer in secondary school, and who have been competitively employed, enrolled in some type of postsecondary school, or both, within one year of leaving high school. Moreover, IEPs of the seniors will be reviewed to check for attendance at the IEP meeting.

A non-experimental design was used. A quantitative analysis analyzed the data from Indicator 13 and 14, as well as the data collected from the IEP student attendance document. The data in this study are derived from preexisting data; these data will be taken from the Indicator 13 records review checklist, and from the results of Indicator 14 survey. Data will be collected from the IEP checklist to record the student's attendance at the IEP meeting.

Research Questions

The data collected and analyzed will answer the following research questions:

1. Is there a significant relationship between transition planning as measured by Virginia's Indicator 13 Checklist and
 - a. students who have been competitively employed as measured by Indicator 14 survey results?
 - i. Does gender further differentiate this relationship?
 - ii. Does ethnicity further differentiate this relationship?
 - iii. Does student attendance in IEP meetings further differentiate this relationship?
 - b. students who have been enrolled in some type of post-secondary school, or both, within one year of leaving high school as measured by Indicator 14 survey results?
 - i. Does gender further differentiate this relationship?
 - ii. Does ethnicity further differentiate this relationship?
 - iii. Does student attendance in IEP meetings further differentiate this relationship?

Participants

The setting of this study involved in an urban school division in Virginia with a total student population in 2007-2008 of 34,921. The racial breakdown of students is as follows: .02% American Indian (53), 63.8 African American (22,290), 2.4% Asian American (849), 3.9 Hispanic (1,363), 6.0% Unspecified (2,101), and 23.7 Caucasian (8,265). Over half of the

students (59%) receive free and reduced-price lunch. The special education population is 12.7%.

A sample of state data collected from Indicator 13 and Indicator 14 was used. From Indicator 13, data were collected on students with disabilities age 14 and up; however, all students were not included because the focus will be on seniors age 18 and above during the 2006-2007 and 2007-2008 school year. From Indicator 14, postsecondary outcome data was taken from survey results of students with disabilities within one year of leaving high school; specific questions were analyzed to show the postsecondary outcome. Attrition was a factor in the number of students analyzed from Indicator 14, since these students have been out of school for a year. In Table 1, the year and number of students are provided for Indicator 13 and Indicator 14; the year and number of student attendance IEP reviews are provided as well.

Table 1

Year and Number of Students for Indicator 13 and 14, and Year and Number for Student Attendance IEP Reviews

	2006-2007	2007-2008
Indicator 13	n=190	n=131
Indicator 14	n=100	n=107
IEP Student Attendance	n=190	n=131

The researcher faced several challenges in obtaining a complete data set for Indicator 13; it only contained a sample size of 20%. The researcher was not able to locate a few student files or IEPs that were stored in the school division's warehouse. Moreover, the researcher contacted schools to locate student files; some student files and IEPs were not in the student's last known school. Next, two data sets were analyzed and merged to obtain one completed data set. The data were taken from Indicator 13 spreadsheet year 2007-2008 and 2008-2009. With the two merged data sets, n=183.

Research Design

There were two levels of research to this study. In level one, there was an overall picture of the data by completing various descriptive analyses. The mean and median score were analyzed, frequency distributions and the skewness of histograms were examined. In level two, differences were investigated as well as relationships analyzed. Logistic regression was used to analyze the data in level two. Logistic regression was used to predict the presence of an outcome based on values of a set of predictor variables. Since most of the data collected from Indicator 13 and Indicator 14 were dichotomous, a logistic regression analysis was the most appropriate procedure to use. Logistic regression is used when the dependent variable is dichotomous. For variables that are not dichotomous, a standard linear regression model will be used as well. The independent or predictor variable (Indicator 13) determined the dependent or outcome variable (Indicator 14). From the collection of IEP student attendance data, the researcher examined the different effects of participation. The IEP attendance data was also included in the regression model to show the strength of student attendance.

Variables

The dependent and independent variable are dichotomous, but not in all cases. Both Indicator 13 and Indicator 14 variables were coded. Disability category, gender, ethnicity, Indicator 13 and Indicator 14 variables (transition planning and transition outcome statements or questions) and IEP attendance was coded.

Indicator 13 identified seven effective transition practices statements on a spreadsheet to be checked with either an answer of yes, no, or at times NA (see Table 2.). The complete list of statements is provided in the appendix (Appendix A).

Table 2*Predictor Variables: Indicator 13 Transition Statements*

		Transition Practices
Statement	1	Measurable postsecondary goals
	2	Annual IEP goals
	3	Coordinated set of transition services
	4	Transition services focus
	5	Agency participation
	6	Transition services included in course of study
	7	Age appropriate assessments

Two data sets were analyzed and merged for Indicator 14. The data were taken from Indicator 14 year 2008-2009 and 2009-2010. With the two merged data sets, n=183. The outcome variables changed slightly once the data sets were merged: measurable postsecondary goals, measurable annual goals-achievement, measurable annual goals-functional performance, and coordinated set of activities. Indicator 14 survey questions changed slightly from the 2008-2009 and 2009-2010 year.

Indicator 14 surveyed students by phone to identify their postsecondary outcomes after high school. There were 27 questions used with the students (see Table 3.). These questions have been categorized by question. The complete list of questions is provided in the appendix (Appendix B).

Table 3
Outcome Variables: Indicator 14 Survey Questions by Category

		Question Number
Category 1	Helpful classes	1, 2
2	Pay	8, 14
3	Job benefits	9, 15
4	Help with finding a job	10, 16
5	School/Training program	17, 18, 19, 20, 21, 22
6	Employment	5, 6, 7, 11, 12, 13, 23
7	Services from agencies	3
8	Satisfied with life	4
9	Finding/Getting a job	24, 25
10	Postsecondary education	26, 27

Procedure

Preexisting data from Indicator 13 records review checklist and Indicator 14 survey was collected and analyzed. Two transformations, A and B, occurred in collecting data for Indicator 13 and 14. Transformation A included the coding of the dichotomous data from Indicator 13 and Indicator 14 into a single coded column. Transformation B merged the two data sets together. Moreover, the IEP student attendance document (Appendix C) was completed when reviewing IEP's for student attendance at the meeting.

Data Collection

Data collected from Indicator 13 will be from preexisting data collected from the VDOE from the school division for the school year of 2006-2007 and 2007-2008. Data were collected

from the seven effective transition practices statements identified on the spreadsheet and checked with either an answer of yes, no, or NA; student record reviews were completed by the school division transition specialist and special education staff. Student identification (ID) numbers were collected from Indicator 13 records review checklist, and the data were transformed into a SPSS data set, with the dichotomous variables coded.

Data collected from Indicator 14 were from preexisting data as well from the VDOE from the school division for the school year of 2006-2007 and 2007-2008. Postsecondary outcome data were collected on youth who are no longer in secondary school and who are been competitively employed, enrolled in some type of postsecondary school, or both, within one year of leaving high school. Telephone interviews were conducted by school division staff special education staff; twenty-seven questions were asked of each student/participant. To see if the student had a postsecondary outcome, the student ID numbers from Indicator 13 were matched with the student ID numbers from Indicator 14. The student individual survey response reports were reviewed to see what if any postsecondary outcomes occurred after high school for students with disabilities. Specific questions were chosen as the predictor of postsecondary outcomes. The data were transformed into a SPSS data set, with the dichotomous variables coded.

Also, data were collected from reviewing IEP's. The researcher reviewed the IEPs of the students to gain the answer to one question. Was the student in attendance at the IEP meeting? IEP student attendance data are not collected in Indicator 13 or Indicator 14, but are of importance to this study. However, IEP student attendance data are readily available. Student IEP's were reviewed to assess attendance or nonattendance at the IEP meeting. The researcher

determined student attendance at the IEP meeting by checking yes or no on the IEP student attendance document.

Data Collection Tools

Three data collection tools were used for this study. The Indicator 13 records review checklist from the VDOE was adapted from the NSTTAC Indicator checklist. The VDOE developed a 27 question survey that was used to collect postsecondary data. Finally, the researcher used an IEP student attendance document to record yes or no for student attendance at the IEP meeting.

Chapter 4: Findings

Chapter four documents the analysis of the quantitative data with the purpose of determining any significant relationships between transition planning and transition services on postsecondary outcomes for students with disabilities, as well as if attendance of students with disabilities at their IEP meetings further differentiate these relationships between Indicator 13 and Indicator 14. This chapter is organized around the following research questions:

1. Is there a significant relationship between transition planning as measured by Virginia's Indicator 13 Checklist and
 - a. students who have been competitively employed as measured by Indicator 14 survey results?
 - i. does gender further differentiate this relationship?
 - ii. does ethnicity further differentiate this relationship?
 - iii. Does student attendance in IEP meetings further differentiate this relationship?
 - b. students who have been enrolled in some type of post-secondary school, or both, within one year of leaving high school as measured by Indicator 14 survey results?
 - i. does gender further differentiate this relationship?
 - ii. does ethnicity further differentiate this relationship?
 - iii. Does student attendance in IEP meetings further differentiate this relationship?

The findings reported in this chapter used a non-experimental design analyzing preexisting data from Indicator 13 and 14, as well as the data collected from the IEP student attendance document. Descriptive analyses of demographic data are reported to help develop an overall picture of the division and the student population as well as a more involved logistic regression which is used to predict the presence of an outcome based on values of a set of predictor variables. In this case the independent or predictor variables are the Indicator 13 variables and will determine the Indicator 14 dependent or outcome variable. The IEP attendance data were also included in the regression model to show the strength of student attendance.

Data Collection and Descriptive Statistics

The school division has complied with the federal and state mandates to improve transition services for students with disabilities. Indicator 13 was completed to see if transition planning and transition services of youth age 16 and above had IEP's that included coordinated, measurable, annual IEP goals and transition services that reasonably enabled students to meet their postsecondary goals; file reviews were conducted to obtain the data needed for the Indicator 13 spreadsheet. Indicator 14 survey was conducted by the school division to find out what if any postsecondary outcome the student obtained. Indicator 14 phone interview surveyed students who had been out of school for one year. Seniors age 18 and above were targeted to reduce the large number of participants and to track transition to postsecondary opportunities. Moreover, IEP's of seniors age 18 and above were reviewed to check the attendance of students at IEP meetings. The researcher faced several challenges in obtaining a complete data set for Indicator 13. Although a sample of state data was used, it only contained a sample size of 20% collected for the state, which meant not all student files were reviewed age 18 and above. The researcher

had to review 144 files to attain the data set for Indicator 13. This research examines data from information gathered from the Indicator 13 spreadsheet, data from the Indicator 14 phone survey, and data gathered from the IEP checklist to record the students' attendance at IEP meetings. This chapter examines the relationship between independent variables (transition practices) and the dependent variables (postsecondary outcomes) as illustrated in Tables 2 and 3. Descriptive statistics are presented.

Data Collection and Coding

Two data sets were analyzed and merged to obtain one complete data set; the focus of the dataset was on students age 18 and above for Indicator 13 and Indicator 14. The data were taken from Indicator 13 spreadsheet year 2007-2008 and 2008-2009; Indicator 14 data were taken from year 2008-2009 and 2009-2010. Out of 183 cases, 89 cases were not completed; school division staff was unable to complete Indicator 14 survey data.

In order to obtain a complete data set, the researcher collected data from several different sources. The following steps were taken to gather these data.

1. From Indicator 14, every second student name was selected (n=100).
2. The researcher reviewed a binder that contained a list of student files located in the school division's warehouse; the binder was developed by the Department of Special Education Services.
3. In reviewing the binder, the researcher was able to determine where the student files were located in the warehouse. The files were stored in bankers boxes, and labeled by box number (students were assigned a bankers box).

4. Once in the warehouse, the researcher began to locate the files of the selected students. The researcher was not able to locate a few student files, or IEP's (these names were noted by the researcher).
5. For files not located in the warehouse, the researcher used the student information system to identify the last known school for the student. After this task was completed, the researcher contacted the schools or visited them to see if the student files were there. Again, some files were not in the school, nor IEP's available in the student file.

Missing Values

For indicator 14 variables, 94 (89 final count) cases were incomplete due to a number of factors, with the primary reasons being unable to reach the student and family after four attempts (30%) and incorrect contact information (61%). As such a total of 90 (94 final count) cases out of the original 194 (183 final count) had complete data.

Table 4

Unable to complete Indicator 14 survey

	Frequency Percent	
contact information is incorrect	57	60.6
unable to reach student and family after 4 attempts	28	29.8
family member declined to be interviewed	4	4.3
Other	3	3.2
student is incarcerated	1	1.1
student declined to be interviewed	1	1.1
Total	94	

Student demographics

Of the final dataset, students with a specific learning disability represented the largest subgroup (54%), followed by students with an intellectual disability (14%), other health

impairment (11%), and emotional disability (10%). All other disabilities represented 3% or less each of the total group. (Sixty-seven percent 67%) of the cases were male, and Black students represented 68% of the population, White students 30% and Hispanic and other ethnicities representing 3% of the total cases (see Table 5).

Table 5
Descriptive Statistics for Student Demographics

Measure	Frequencies	Percentage
Disability		
SLD	98	53.6
ID	25	13.7
OHI	20	10.9
ED	19	10.4
Other	17	4.0
Gender		
Female	60	32.8
Male	123	67.2
Ethnicity		
Black	124	67.8
Hispanic	2	1.1
White	54	29.5
Other	3	1.6

General Descriptive Statistics

The sample size consisted of 183 participants, well over half of the students (roughly 67%) were male ($n = 123$), while the rest were female ($n = 60$), students with disabilities age 16 and above. However, the focus was on students age 18 and above for Indicator 13 and Indicator 14. Over 54% of the participants were specific learning disability, and 68% of the participants were Black males. The majority of participants worked in a competitive work setting (25%), and the remaining participants were relatively evenly distributed: in the military (.5%), in sheltered employment (.5%), in supported employment (1.6%) and other setting (.5%). Participants had measurable postsecondary goals identified (63%) and annual IEP goals developed (87%) in the majority of the IEP's reviewed, and there were a tremendous number of participants who

received a coordinated set of transition services in their IEP (85%). There were a positive number of students who attended their IEP meeting, 91%. Table 6 reports the frequencies and percentages associated with employment, college enrollment, and school/training programs.

Table 6

Frequencies and Percentages for College Enrollment, Employment, and School/Training Program Enrollment

	Frequencies	Percentage
Employment – ever worked	61	33.3
Enrollment 2/4 year college	23	12.6
Enrollment school/training program	21	11.5

Descriptive statistics for matching Indicator 13 and 14 variable

Indicator 13 variables showed students with disabilities have worked since leaving high school (69%); students with disabilities were employed (87%) in a competitive work setting. Here we see that 30% of these students are unemployed and over 72% have never been enrolled in any type of post-secondary education or training. Measurable postsecondary goals were identified (63%), annual IEP goals were developed (87%), and a coordinated set of transition services were identified in students with disabilities IEP's (85%); an immense number of students with disabilities attended their IEP meeting (91%). Post-secondary outcomes as measured by indicator 14 show that students with disabilities enrolled in a two year or four year college (37%), and enrolled in a type of school or training program (25%) since leaving high school.

Descriptive statistics for matching Indicator 13 and 14 variables by Gender, Race and Disability Status

A disproportionate percentage of male students (70%) was largely consistent across disability status, as well as a disproportionate percentage of black students represented across

racial groups; black students represented 70% of students with a specific learning disability, 60% of students with an intellectual disability, and 80% of students identified as other health impaired.

Indicator 13 variables broken out by disability status indicates varying percentages of students with postsecondary goals identified on their IEPs: 67% of students with intellectual disabilities, 90% of students with other health impairments and only 60% of students with specific learning disabilities showed they had postsecondary goals identified on their IEP. Most disability groups had over 90% or more annual IEP goals developed on their IEP's, with the exception of other health impaired, with only 80%. Similarly, a coordinated set of transition services indicated in students IEP were present in 90% or more in most groups with the exception of specific learning disabilities at 78%. Lastly, students attended their IEP meeting at different rates, with 87% of students with intellectual disabilities, 70% of students with other health impairments, and 96% of students with specific learning disabilities.

Indicators 13 variables broken out by racial groups revealed different rates of post-secondary goals identified (68% for black and 71% for whites), annual IEP groups developed (90% for black and 86% for whites), and a coordinated set of transition services in their IEP (86% for black and 82% for whites). Black and white student attended IEP meetings at roughly the same rates.

Indicator 14 variables also indicate varying employment and post-secondary training rates by disability groups. Few students indicated being enrolled in 2 or 4 year college of those 75% were students with specific learning disabilities. Employment rates also varied by disability group with 47% of students with intellectual disabilities, 30% of students with other health impairments and 28% of students with specific learning disabilities being unemployed.

Similarly, employment and post-secondary training rates varied by racial groups with 64% of black students employed and 71% of white students employed. Black and white students attended 2 or 4 year colleges at nearly the same rates of 27% for black students and 25% for white students.

Descriptive Statistics for Indicator 14 Variables by Measureable Post-Secondary Goals Identified

Table 7

Percentage of Students Enrolled in Two and Four Year College Programs by Measureable Post-Secondary Goals Identified on IEP

Two and Four Year Enrollment	Measureable post-secondary goals identified	
	Yes	No
Yes	32.3%	10.7%
No	29.0%	75.0%
NA	37.0%	10.7%

Table 8

Percentage of Student Working Since Leaving High School by Measureable Post-Secondary Goals Identified on IEP

Since leaving high school, have you ever worked?	Measureable post-secondary goals identified	
	Yes	No
Yes	69.4%	64.3%
No	29.0%	32.1%

Table 9

Percentage of Student Enrolled in Any Type of School or Training Program by Measureable Post-Secondary Goals Identified on IEP

Since leaving high school, have you ever enrolled in any type of school or training program?	Measurable post-secondary goals identified	
	Yes	No
Yes	30.6	25.0
No	67.7	64.3

Descriptive Statistics for Indicator 14 Variables by Measureable Post-Secondary Goals

Identified

Table 10

Percentage of Student employed since leaving high school by annual IEP goals developed

Since leaving high school, have you ever worked?	Annual IEP goals developed	
	Yes	No
Yes	65.0%	90.0%
No	32.5%	10.0%

Table 11

Percentage of enrolled in any type of school or training program by annual IEP goals developed

Since leaving high school, have you ever enrolled in any type of school or training program	Annual IEP goals developed	
	Yes	No
Yes	32.1	10.0
No	66.7	80.0

Descriptive Stats for Indicator 13 and 14 variables by IEP Attendance:

Effective transition planning should include the student. Out of 183 cases, 91% of students attended their IEP meeting (Table 12). Students with autism, emotional disability, hearing impairment, multiple disabilities, speech language impairment, and visual impairment attended their IEP meeting 100% of the time. White and black students attended their IEP meeting at the same rate (92%). Overall, students with disabilities attended their IEP meeting.

Table 12 *IEP Attendance by Student*

IEP Attendance by Student	Frequencies	Percentage
Yes	167	91.3
No	16	8.7

Table 13*Disability status*

	Frequency	Percent
Autism	2	2.4
Emotional disturbance	9	10.8
Mental retardation	12	14.5
Multiple disabilities	4	4.8
Orthopedic impairment	2	2.4
Other health impairment	9	10.8
Specific learning disability	40	48.2
Speech or language impairment	3	3.6
Traumatic brain injury	1	1.2
Visual impairment	1	1.2
Total	83	100.0

Table 14*Gender*

	Frequency	Percent
Female	30	36.1
Male	53	63.9
Total	83	100.0

Table 15*Ethnicity*

	Frequency	Percent
Black	56	67.5
Hispanic	1	1.2
White	23	27.7
Other	3	3.6
Total	83	100.0

Logistic Regression

Logistic regression is used to predict the probability that various transition planning efforts will have on postsecondary outcomes such as employment or further education. Because these data are dichotomous (yes/no), logistic regression is the appropriate analysis. This type of regression analysis is used to predict a dichotomous variable from a set of predictor variables. Since logistic regression makes no assumptions about the distributions of the predictor variables we can make sound predictions with dichotomous variables, thereby addressing the limitations of linear regression for use with dichotomous dependent variables (Mayer & Younger 1976; Chen, 2005).

In this study logistic regression is used to predict an outcome, in this case employment or education status, from a set of predictor variables which measure postsecondary planning. In logistic regression, we're able to measure the probability the dependent variable (employment and education/training) is a function of the probability that a particular subject will be in one of these discrete categories. In this case the students' postsecondary outcomes will be used as the criterion variable and their postsecondary planning variables will be used as the predictor variable. The regression model will predict the logit, or the natural log of odds of being employed or in postsecondary training based on the postsecondary planning variables.

In logistic regression there are two basic type of models, the crude model and the adjusted model. The crude model makes predictions based on single factors while the adjusted model takes into consideration potential covariates. In this case the factor used to predict the binary outcome is itself binary. By arranging the data in a crosstab table one can visualize how the logistic regression model works.

Table 16
Measurable postsecondary goals identified Crosstabulation

		Since leaving high school, have you ever enrolled in any type of school or training program?			
		Yes	No	don't know	Total
Measurable postsecondary goals identified	Yes	19	42	0	61
	No	7	18	2	27

In the table above, one can see that the students who had measurable post-secondary goals identified in their IEPs and those that did not, crosstabbed with those students who have been enrolled in some form of school or training program and the four the four possible combinations of measurable postsecondary outcomes and enrollment in a school or training program.

Logistic Regression Model: Prediction Of Students who had Post-High School Employment

As we continue addressing the potential relationship between transition planning and students who have been competitively employed, enrolled in some type of post-secondary school, or both, within one year of leaving high school, we now explore the indicator 14 variable of post-high school employment.

Block 0, or what can be referred to as the beginning block, or reduced model, presumes that since leaving high school students are employed after leaving high school and is correct 66.7% of the time (see Table 17). This model does not include the postsecondary planning variables as way of comparing subsequent models to the reduced model. We want to see how the models that use the postsecondary planning variables as predictors and the interaction terms of gender and ethnicity can improve this estimate and differentiate between being employed and not being employed.

Table 17

Block 0: Classification Table, Since leaving high school, have you ever worked?

Observed	Predicted		Percentage Correct
	Yes	No	
Yes	58	0	100.0
No	29	0	.0
Overall Percentage			66.7

We can see in Table 18 that the reduced model is nearly significant with a p value of .002 and an exponentiated raw coefficient of .500. This value is the more interpretable odds coefficient in a logistic regression analysis. Scores between 0 and 1 represent an inverse relationship between the predictors and the outcome variable, and scores at 1 demonstrate no predictive value and anything over one represent a positive change. In this case we have an Exp(B) of .500 suggesting a somewhat less than 50% chance that a student will not be working post- high school. Because this is the reduced model it does not utilize the predictor variables and is used as a comparison only.

Table 18

Block 0, Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Step 0 Constant	-.693	.227	9.289	1	.002	.500

Table 19

Variables not in the Equation

		Score	df	Sig.
Step 0	Variables			
	postsecondarygoals	.242	1	.623
	IEPgoalsdeveloped	2.768	1	.096
	transitionservices	.723	1	.395
	IEPattendance	1.243	1	.265
	Overall Statistics	3.754	4	.440

Adding Postsecondary Planning Predictor Variable to the Logistic Regression Model: Block 1

As we move on to Block 1, we notice several things worth mentioning. First the Chi-squares, both Step and Block, for the model (see Table 20) are significant and suggests that further exploration into the analysis is warranted. In addition the Hosmer and Lemeshow Test (see Table 21), which is the goodness of fit test for logistic regression demonstrates that the model is sound. This test assesses the goodness of fit between the observed and expected number of people who fall into the dependent variable's options (yes/no) and should find no differences, hence a non-significant p value. We can also see in the Model Summary (Table 18) the approximations of an r-squared value for logistic regression models. These two estimates (Cox & Snell R Square and Nagelkerke R Square) are often inconsistent with each other and can both over and under estimate the percentage of variance the model can explain. As such these should be interpreted with caution, however the literature is vague, providing little specific guidance on this matter. These estimates suggest that the model could account for between 50% and 69% of the variance in students working after leaving high school.

Table 20
Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	4.422	4	.352
	Block	4.422	4	.352
	Model	4.422	4	.352

Table 21
Block 1, Model Summary and Hosmer and Lemeshow Test

Model Summary			Hosmer and Lemeshow Test		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	Chi-square	df	Sig.
106.331 ^a	.050	.069	.680	3	.878

Next, we move to the classification table for step one of the model (see Table 22) and compare the reduced model to Block 1, which introduces the postsecondary planning predictor variables. In the reduced model we found that the model was correct 66.7% of the time that predictor since leaving high school students are employed (see Table 22). We see here that after introducing the postsecondary planning variables to the model that these variables do not improve this estimate nor differentiate between being employed and not being employed, continuing with 66.7% in the reduced model and maintaining 66.7% in Block 1. This tells us that the introduction of the postsecondary planning variables does not help to better predict postsecondary employment.

Table 22

Block 1 Classification Table, Since leaving high school, have you ever worked?

Observed	Predicted		Percentage Correct
	Yes	No	
Yes	58	0	100.0
No	29	0	.0
Overall Percentage			66.7

The overall percentage discussed above in the classification table evaluates the overall model, but does assess the contribution of each variable within the model. If we examine the variables in the equation we will see that only one of them, postsecondary goals identified, were significant. In this way, the other variables didn't contribute to the overall model. We see here that postsecondary goals predict postsecondary employment; the exponentiated raw coefficient of 1.594 (see Table 23) suggests that for those students who had postsecondary goals identified, their odds of being employed increased by .824 times.

Table 23
Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Postsecondary goals	.466	.514	.824	1	.364	1.594
IEP goals developed	-1.615	1.271	1.615	1	.204	.199
Transition services	-.012	.838	.000	1	.988	.988
IEP attendance	-.619	1.187	.272	1	.602	.538
Constant	1.111	1.588	.490	1	.484	3.038

Adding Gender as a Predictor Variable to the Logistic Regression Model: Block 2

In addition to the predictor variables addressed above, we also wanted to see the impact of the interactions of gender and ethnicity. Because for this population there were only White and African American students this variable was dummy coded as 0=white and 1=African American. In Step 2 of the regression model we added gender as the interaction term and in Step three of the model we'll add ethnicity. In Step 2 with gender as the interaction term, the values in the model didn't change significantly (see Tables 24-27) which is a good indication that there was no collinearity and we are safe to interpret the results. Introducing gender as an interaction term did modestly differentiate between being employed and not being employed, improving from 66.7% in Block 1 to 71.3% in Block 2 (see Table 26). Reviewing the variables in the equation we see that the gender is significant and the exponentiated raw coefficient is 5.824 (see Table 27). This suggests female students had 5.824 times the odds of postsecondary employment.

Table 24
Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	8.578	1	.003
	Block	8.578	1	.003
	Model	13.000	5	.023

Table 25*Block 2 Model Summary and Hosmer and Lemeshow Test*

Model Summary			Hosmer and Lemeshow Test		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	Chi-square	df	Sig.
97.753 ^a	.139	.193	5.030	5	.412

Table 26*Block 2 Classification Table, Since leaving high school, have you ever worked?*

Observed	Predicted		Percentage Correct
	Yes	No	
Yes	53	5	91.4
No	20	9	31.0
Overall Percentage			71.3

Table 27*Variables in the Equation*

	B	S.E.	Wald	df	Sig.	Exp(B)
Postsecondary goals	.494	.543	.829	1	.363	1.640
IEP goals developed	-2.081	1.303	2.548	1	.110	.125
Transition services	.058	.880	.004	1	.948	1.059
IEP attendance	-.653	1.232	.281	1	.596	.520
Gender(1)	1.762	.681	6.695	1	.010	5.824
Constant	.152	1.687	.008	1	.928	1.164

Adding ethnicity as a Predictor Variable to the Logistic Regression Model: Block 3

As we move to Block 3, we see that the addition of ethnicity did not contribute to the model. In Step 3 of the regression model we added ethnicity along with gender as an interaction term. The values in the model didn't change significantly (see Tables 28-31) which is a good indication that there was no collinearity and we are safe to interpret the results. Introducing ethnicity as an interaction term did not however differentiate between being employed and not being employed, remaining 71.3% from Block 2 (Table 30) to Block 3 (Table 31). Reviewing the variables in the equation we see that the ethnicity is non-significant and the exponentiated raw

coefficient is .785 (see Table 31). This suggests ethnicity had no real measured influence on postsecondary employment.

Table 28

Block 3 Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step	.203	1	.652
Block	.203	1	.652
Model	13.203	6	.040

Table 29

Block 3 Model Summary and Hosmer and Lemeshow Test

Model Summary			Hosmer and Lemeshow Test		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	Chi-square	df	Sig.
97.550 ^a	.141	.196	9.790	7	.201

Table 30

Block 3 Classification Table, Since leaving high school, have you ever worked?

Observed	Predicted		Percentage Correct
	Yes	No	
Yes	53	5	91.4
No	20	9	31.0
Overall Percentage			71.3

Table 31

Block 3 Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Postsecondary goals	.484	.543	.795	1	.372	1.623
IEP goals developed	-2.025	1.294	2.450	1	.118	.132
Transition services	.031	.881	.001	1	.972	1.031
IEP attendance	-.701	1.237	.321	1	.571	.496
Gender (1)	1.756	.682	6.631	1	.010	5.790
Ethnicity(1)	-.242	.540	.201	1	.654	.785
Constant	.265	1.723	.024	1	.878	1.303

Logistic Regression Model: Prediction of Students Being Enrolled in a Two or Four Year Postsecondary Program

In this study we were interested in the potential relationship between transition planning and students who have been competitively employed, enrolled in some type of post-secondary school, or both, within one year of leaving high school. First we'll explore the prediction of student being enrolled in a two or four year postsecondary program.

In logistic regression the first step is to assess only the constant in the model, and for this question we only look at student enrolled in two or four year postsecondary programs. In table 32 below, we can see Block 0, or what can be referred to as the beginning block, or reduced model, guesses that since leaving high school students are not enrolled in a two year or four year college or university and is correct 63% of the time (see Table 32). This model does not include the postsecondary planning variables as way of comparing subsequent models to the reduced model. We want to see how the models that use the postsecondary planning variables as predictors and the interaction terms of gender and ethnicity can improve this estimate and differentiate between being enrolled and not being enrolled.

Table 32

Block 0: Classification Table, Since leaving high school, have you even been enrolled in a two year or four year college?

Observed	Predicted		Percentage Correct
	Yes	No	
Yes	0	23	.0
No	0	38	100.0
Overall Percentage			62.3

As we move through the beginning block of the model, we can see in Table 33 that the reduced model is nearly significant with a p value of .057 and an exponentiated raw coefficient of 1.652. This value is the more interpretable odds coefficient in a logistic regression analysis.

Scores between 0 and 1 represent an inverse relationship between the predictors and the outcome variable, and scores at 1 demonstrate no predictive value and anything over one represent a positive change. In this case we have an $\text{Exp}(B)$ of 1.652 suggesting a somewhat better than 50% chance that a student will be enrolled in a two or four year college or university. Because this is the reduced model it does not utilize the predictor variables and is used as a comparison only.

Table 33
Block 0, Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	.502	.264	3.612	1	.057	1.652

Adding Postsecondary Planning Predictor Variable to the Logistic Regression Model: Block 1

As we move on to Block 1 of the model, we add the postsecondary planning predictor variables and we notice several things worth pointing out. First the Chi-squares, both Step and Block, for the model (see Table 34) are significant and suggests that further exploration into the analysis is warranted. In addition the Hosmer and Lemeshow Test (see Table 35), which is the goodness of fit test for logistic regression demonstrates that the model is sound. This test assesses the goodness of fit between the observed and expected number of people who fall into the dependent variable's options (yes/no) and should find no differences, hence a non-significant p value. We can also see in the Model Summary (Table 35) the approximations of an r-squared value for logistic regression models. These two estimates (Cox & Snell R Square and Nagelkerke R Square) are often inconsistent with each other and can both over and under estimate the percentage of variance the model can explain. As such these should be interpreted with caution, however the literature is vague, providing little specific guidance on this matter. These estimates suggest that the model could account for between 18% and 25% of the variance in students being enrolled in a two or four year college or university.

Table 34*Block 1, Omnibus Tests of Model Coefficients*

	Chi-square	df	Sig.
Step	12.427	4	.014
Block	12.427	4	.014
Model	12.427	4	.014

Table 35*Block 1, Model Summary and Hosmer and Lemeshow Test*

Model Summary			Hosmer and Lemeshow Test		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	Chi-square	df	Sig.
68.411 ^a	.184	.251	1.261	4	.868

Next, we'll move to the classification table for step one of the model (see Table 36) and compare the reduced model to Block 1 which introduces the postsecondary planning predictor variables. In the reduced model we found that the model was correct 63% of the time that since leaving high school students are not enrolled in a two year or four year college (see Table 36). We see here that after introducing the postsecondary planning variables to the model that these variables do modestly improve this estimate and differentiate between being enrolled and not being enrolled, improving from 63% in the reduced model to 68.9% in Block 1. This tells us that the introduction of the postsecondary planning variables does help to better predict enrollment in two or four year college or university.

Table 36*Block 1, Classification Table, Since leaving high school, have you even been enrolled in a two year or four year college?*

Observed	Predicted		Percentage Correct
	Yes	No	
Yes	18	5	78.3
No	14	24	63.2
Overall Percentage			68.9

The overall percentage discussed above in the classification table evaluates the overall model, but does assess the contribution of each variable within the model. If we examine the variables in the equation we'll see that only one of them, postsecondary goals identified, were significant. In this way, the other variables didn't contribute to the overall model. We see here that postsecondary goals predict enrolment in two or four year colleges or universities; the exponentiated raw coefficient of 7.164 (see Table 37) suggests that for those students who had postsecondary goals identify, their odds of being in a two or four year college increase by 7.164 times.

Table 37
Block 1, Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Postsecondary goals	1.969	.731	7.262	1	.007	7.164
IEP goals developed	-.956	1.352	.501	1	.479	.384
Transition services	.854	1.005	.722	1	.395	2.349
IEP attendance	1.503	1.473	1.042	1	.307	4.497
Constant	-3.604	1.720	4.392	1	.036	.027

Adding Gender as a Predictor Variable to the Logistic Regression Model: Block 2

In block 2 of the model, in addition to the predictor variables addressed above, we also wanted to see the impact of the interactions of gender and ethnicity. Because for this population there were only White and African American students this variable was dummy coded as 0=white and 1=African American. In Step 2 of the regression model we added gender as the interaction term and in Step 3 of the model we'll add ethnicity. In Step 2 with gender as the interaction term, the values in the model didn't change significantly (see Tables 38-41) which is a good indication that there was no collinearity and we're safe to interpret the results. Introducing gender as an interaction term did modestly differentiate between being enrolled and not being enrolled, improving from 68.9% in Block 1 to 72.1% in Block 2 (see Table 40).

Reviewing the variables in the equation we see that the Gender is significant and the exponentiated raw coefficient is 4.841 (see Table 41). This suggests female students had 4.841 times the odds of enrollment in a 2/4 year college or university.

Table 38*Block 2 Omnibus Tests of Model Coefficients*

	Chi-square	df	Sig.
Step	4.698	1	.030
Block	4.698	1	.030
Model	17.124	5	.004

Table 39*Block 2, Model Summary and Hosmer and Lemeshow Test*

Model Summary			Hosmer and Lemeshow Test		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	Chi-square	df	Sig.
63.713 ^a	.245	.333	1.296	6	.972

Table 40*Block 2, Classification Table, Since leaving high school, have you even been enrolled in a two year or four year college?*

Observed	Predicted		Percentage Correct
	Yes	No	
Yes	8	15	34.8
No	2	36	94.7
Overall Percentage			72.1

Table 41*Block 2, Variables in the Equation*

	B	S.E.	Wald	df	Sig.	Exp(B)
Postsecondary goals	2.237	.813	7.567	1	.006	9.363
IEP goals developed	-1.576	1.398	1.270	1	.260	.207
Transition services	.645	1.016	.404	1	.525	1.906
IEP attendance	2.018	1.496	1.821	1	.177	7.526
Gender(1)	1.577	.771	4.180	1	.041	4.841
Constant	-4.738	1.935	5.998	1	.014	.009

Adding Ethnicity as a Predictor Variable to the Logistic Regression Model: Block 3

As we move to Block 3 we see that the addition of ethnicity did not contribute to the model. In Step 3 of the regression model we added ethnicity along with gender as an interaction term. In Step 3 with ethnicity as the interaction term, the values in the model didn't change significantly (see Tables 42-45) which is a good indication that there was no collinearity and we're safe to interpret the results. Introducing ethnicity as an interaction term did not however differentiate between being enrolled and not being enrolled, remaining 72.1% from Block 2 (Table 44) to Block 3 (Table 45). Reviewing the variables in the equation we see that the Ethnicity is non-significant and the exponentiated raw coefficient is 1.193 (see Table 45). This suggests ethnicity had no real measured influence on enrollment in a 2/4 year college or university.

Table 42

Block 3, Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step	.069	1	.793
Block	.069	1	.793
Model	17.193	6	.009

Table 43

Block 2, Model Summary and Hosmer and Lemeshow Test

Model Summary			Hosmer and Lemeshow Test		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	Chi-square	df	Sig.
63.644 ^a	.246	.335	2.099	6	.910

Table 44

Block 3, Classification Table, Since leaving high school, have you even been enrolled in a two year or four year college?

Observed	Predicted		Percentage Correct
	Yes	No	
Yes	8	15	34.8
No	2	36	94.7
Overall Percentage			72.1

Table 45

Block 3, Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Postsecondary goals	2.252	.818	7.570	1	.006	9.506
IEP goals developed	-1.590	1.406	1.278	1	.258	.204
Transition services	.638	1.016	.394	1	.530	1.893
IEP attendance	2.033	1.501	1.834	1	.176	7.639
Gender(1)	1.585	.771	4.220	1	.040	4.877
Ethnicity(1)	.177	.675	.069	1	.793	1.193
Constant	-4.808	1.966	5.981	1	.014	.008

Logistic Regression Model for Predictions of Students Who Has Enrolled in Any Type of Postsecondary Training

Block 0, or what can be referred to as the beginning block, or reduced model, presumes that since leaving high school students are not enrolled in any type of school or training program and is correct 100% of the time (see Table 46). This model does not include the postsecondary planning variables as way of comparing subsequent models to the reduced model. We want to see how the models that use the postsecondary planning variables as predictors and the interaction terms of gender and ethnicity can improve this estimate and differentiate between being enrolled and not being enrolled in any type of postsecondary training.

Table 46

Block 0 Classification Table, Since leaving high school, have you ever enrolled in any type of school or training program?

Observed	Predicted		Percentage Correct
	Yes	No	
Yes	0	25	.0
No	0	62	100.0
Overall Percentage			71.3

We can see in Table 47 that the reduced model is significant with a p value of .000 and an exponentiated raw coefficient of 2.480. This value is the more interpretable odds coefficient in a logistic regression analysis. Scores between 0 and 1 represent an inverse relationship between the predictors and the outcome variable, and scores at 1 demonstrate no predictive value and anything over one represent a positive change. In this case we have an Exp(B) of 2.480 suggesting a somewhat better than 50% chance that a student will be enrolled in some type of postsecondary school or training program. Because this is the reduced model it does not utilize the predictor variables and is used as a comparison only.

Table 47

Block 0 Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Constant	.908	.237	14.697	1	.000	2.480

Table 48

Block Variables not in the Equation

	Score	df	Sig.
Variables postsecondarygoals	.811	1	.368
IEPgoalsdeveloped	1.937	1	.164
transitionservices	.706	1	.401
IEPattendance	.000	1	.992
Overall Statistics	7.072	4	.132

Adding Postsecondary Planning Predictor Variables to the Logistic Regression Model: Block 1

As we move on to Block 1, we notice several things worth mentioning. First the Chi-squares, both Step and Block, for the model (see Table 49) are significant and suggests that further exploration into the analysis is warranted. In addition the Hosmer and Lemeshow Test (see Table 5), which is the goodness of fit test for logistic regression demonstrates that the model is sound. This test assesses the goodness of fit between the observed and expected number of people who fall into the dependent variable's options (yes/no) and should find no differences, hence a non-significant p value. We can also see in the Model Summary (Table 50) the approximations of an r-squared value for logistic regression models. These two estimates (Cox & Snell R Square and Nagelkerke R Square) are often inconsistent with each other and can both over and under estimate the percentage of variance the model can explain. As such these should be interpreted with caution, however the literature is vague, providing little specific guidance on this matter. These estimates suggest that the model could account for between 8% and 12% of the variance in students being enrolled in some type of postsecondary training.

Table 49
Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	7.697	4	.103
	Block	7.697	4	.103
	Model	7.697	4	.103

Table 50
Block 1, Model Summary and Hosmer and Lemeshow Test

Model Summary			Hosmer and Lemeshow Test		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	Chi-square	df	Sig.
96.663 ^a	.085	.121	6.037	3	.110

Next, we'll move to the classification table for step one of the model (see Table 51) and compare the reduced model to Block 1 which introduces the postsecondary planning predictor variables. In the reduced model we found that the model was correct 71.3% of the time that since leaving high school students are not enrolled in a postsecondary training program. We see here that after introducing the postsecondary planning variables to the model that these variables do modestly improve this estimate and differentiate between being enrolled and not being enrolled, improving from 71.3% in the reduced model to 73.6% in Block 1. This tells us that the introduction of the postsecondary planning variables does help to better predict enrollment in postsecondary training.

Table 51

Block 1 Classification Table, Since leaving high school, have you ever enrolled in any type of school or training program?

Observed	Predicted		Percentage Correct
	Yes	No	
Yes	4	21	16.0
No	2	60	96.8
Overall Percentage			73.6

The overall percentage discussed above in the classification table evaluates the overall model, but does assess the contribution of each variable within the model. If we examine the variables in the equation we'll see that two of them, postsecondary goals identified and IEP goals developed, were significant. In this way, the other variables did not contribute to the overall model. We see here that postsecondary goals predict enrolment in some type of postsecondary training; the exponentiated raw coefficient of 1.604 (see Table 52) suggests that for those students who had postsecondary goals identified, their odds of being in a two or four year college increase by 1.604 times. To add, IEP goals developed predict enrollment in some type of postsecondary training.

Table 52*Block 1 Variables in the Equation*

	B	S.E.	Wald	df	Sig.	Exp(B)
Postsecondary goals	.473	.583	.657	1	.417	1.604
IEP goals developed	2.898	1.472	3.877	1	.049	18.145
Transition services	-1.799	.898	4.012	1	.045	.165
IEP attendance	-.843	1.053	.641	1	.424	.431
Constant	.137	1.402	.010	1	.922	1.147

Adding Gender as a Predictor Variables to the Logistic Regression Model: Block 2

In addition to the predictor variables addressed above, we also wanted to see the impact of the interactions of gender and ethnicity. Because for this population there were only White and African American students this variable was dummy coded as 0=white and 1=African American. In Step 2 of the regression model we added gender as the interaction term and in Step three of the model we'll add ethnicity. In Step 2 with gender as the interaction term, the values in the model didn't change significantly (see Tables 53-56) which is a good indication that there was no collinearity and we're safe to interpret the results. Introducing gender as an interaction term did modestly differentiate between being enrolled and not being enrolled, improving from 73.6% in Block 1 to 75.9% in Block 2 (see Table 54). Reviewing the variables in the equation we see that the Gender is significant and the exponentiated raw coefficient is 1.640 (see Table 56). This suggests female students had 1.640 times the odds of enrollment in some type of postsecondary school or training program.

Table 53*Block 2 Omnibus Tests of Model Coefficients*

	Chi-square	df	Sig.
Step	1.717	1	.190
Block	1.717	1	.190
Model	9.414	5	.094

Table 54

Block 2 Classification Table, Since leaving high school, have you ever enrolled in any type of school or training program?

Observed	Predicted		Percentage Correct
	Yes	No	
Yes	5	20	20.0
No	1	61	98.4
Overall Percentage			75.9

Table 55

Block 1, Model Summary and Hosmer and Lemeshow Test

Model Summary			Hosmer and Lemeshow Test		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	Chi-square	df	Sig.
94.946 ^a	.103	.147	3.885	3	.274

Table 56

Block 2 Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Postsecondary goals	.494	.587	.709	1	.400	1.640
IEP goals developed	3.189	1.510	4.460	1	.035	24.260
Transition services	-1.882	.922	4.168	1	.041	.152
IEP attendance	-.886	1.061	.697	1	.404	.412
gender	-.768	.608	1.598	1	.206	.464
Constant	.515	1.447	.127	1	.722	1.674

Adding Ethnicity as a Predictor Variables to the Logistic Regression Model: Block 3

As we move to Block 3 we see that the addition of ethnicity did not contribute to the model. In Step 3 of the regression model we added ethnicity along with gender as an interaction term. In Step 3 with ethnicity as the interaction term, the values in the model didn't change significantly (see Tables 54-57) which is a good indication that there was no collinearity and we're safe to interpret the results. Introducing ethnicity as an interaction term did not however differentiate between being enrolled and not being enrolled, remaining 75.9% from Block 2

(Table 58) to Block 3 (Table 60). Reviewing the variables in the equation we see that the Ethnicity is non-significant and the exponentiated raw coefficient is 3.127 (see Table 60). This suggests ethnicity had no real measured influence on enrollment in some type of postsecondary school or training.

Table 57

Block Omnibus Tests of Model Coefficients

	Chi-square	df	Sig.
Step	3.767	1	.052
Block	3.767	1	.052
Model	13.181	6	.040

Table 58

Block 2 Classification Table, Since leaving high school, have you ever enrolled in any type of school or training program?

Observed	Predicted		Percentage Correct
	Yes	No	
Yes	5	20	20.0
No	1	61	98.4
Overall Percentage			75.9

Table 59

Block 1, Model Summary and Hosmer and Lemeshow Test

Model Summary			Hosmer and Lemeshow Test		
-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	Chi-square	df	Sig.
91.179 ^a	.141	.201	9.401	6	.152

Table 60
Block 3 Variables in the Equation

	B	S.E.	Wald	df	Sig.	Exp(B)
Postsecondary goals	.570	.597	.913	1	.339	1.769
IEP goals developed	2.810	1.458	3.714	1	.054	16.604
Transition services	-1.859	.964	3.719	1	.054	.156
IEP attendance	-.695	1.054	.435	1	.510	.499
Dummy (Gender?)	-.705	.617	1.304	1	.253	.494
Ethnicity	1.140	.624	3.335	1	.068	3.127
Constant	.223	1.499	.022	1	.882	1.250

Summary

Chapter four documents the analysis of the quantitative data with the purpose of determining any significant relationships between transition planning and transition services on postsecondary outcomes for students with disabilities, as well as if attendance of students with disabilities at their IEP meetings further differentiate these relationships between Indicator 13 and Indicator 14. This chapter is organized around the following research questions:

2. Is there a significant relationship between transition planning as measured by Virginia's Indicator 13 Checklist and
 - a. students who have been competitively employed as measured by Indicator 14 survey results?
 - i. does gender further differentiate this relationship?
 - ii. does ethnicity further differentiate this relationship?
 - iii. Does student attendance in IEP meetings further differentiate this relationship?

- b. students who have been enrolled in some type of post-secondary school, or both, within one year of leaving high school as measured by Indicator 14 survey results?
 - i. does gender further differentiate this relationship?
 - ii. does ethnicity further differentiate this relationship?
 - iii. Does student attendance in IEP meetings further differentiate this relationship?

General Descriptive Statistics

Descriptive analysis revealed that 69% of students with disabilities have worked since leaving high school and 87% employed in a competitive work setting. However, 30% of these students were unemployed and over 72% were never enrolled in any type of post-secondary education or training. Post-secondary outcomes as measured by indicator 14 showed that students with disabilities enrolled in a two year or four year college (37%), and enrolled in a type of school or training program (25%) since leaving high school.

Descriptive analysis also highlighted a disproportionate percentage of male students (70%) which was consistent across disability status, as well as a disproportionate percentage of black students. Similarly, employment and post-secondary training rates varied by racial groups with 64% of black students employed and 71% of white students employed. Black and white students attended 2 or 4 year colleges at nearly the same rates of 27% for black students and 25% for white students. White and black students attended their IEP meeting at the same rate (92%). Overall, students with disabilities attended their IEP meeting.

Logistic Regression

Employment

In general students were employed after leaving high school, but logistic regression revealed that there was a somewhat less than 50% chance that a student would not be working post- high school. These estimates suggest that the model could account for between 50% and 69% of the variance in students working after leaving high school. The introduction of the postsecondary planning variables did not help to better predict postsecondary employment. However, after examining the postsecondary planning variables (postsecondary goals, IEP goals developed, transition services, IEP attendance) in the equation, only one of them, postsecondary goals identified, was significant. The exponentiated raw coefficient of 1.594 suggests that for those students who had postsecondary goals identified, their odds of being employed increased.

Introducing gender as an interaction term did modestly differentiate between being employed and not being employed, improving from 66.7% to 71.3% and gender was a significant. This suggests female students had 5.824 times the odds of postsecondary employment. The addition of ethnicity as an interaction term did not differentiate between being employed and therefore did not contribute to the model. This suggests ethnicity had no real measured influence on postsecondary employment.

Post-Secondary Education and Training

The logistic regression analyses that explored post-secondary training and education highlighted that since without including post-secondary planning in the model, students were not enrolled in a two year or four year college or university 63% of the time. Introducing the postsecondary planning variables to Block 0 model demonstrated that these variables do modestly improve this estimate and differentiate between being enrolled and not being enrolled.

This tells us that the introduction of the postsecondary planning variables does help to better predict enrollment in two or four-year college or university. Post-secondary goals predict enrolment in two or four year colleges or universities; the exponentiated raw coefficient of 7.164 suggests that for those students who had postsecondary goals identified, their odds of being in a two or four year college increase by 7.164 times.

Introducing gender as an interaction term did modestly differentiate between being enrolled and not being enrolled into a two or four year college. This suggests female students had 4.841 times the odds of enrollment in a 2/4 year college or university. Introducing ethnicity as an interaction term did not however differentiate between being enrolled and not being enrolled a two or four year college or university. This suggests ethnicity had no real measured influence on enrollment in a two or four year college or university.

Since leaving high school, students were not enrolled in a postsecondary training program 71.3% of the time. After introducing the postsecondary planning variables to the model, they modestly improved this estimate and differentiate between being enrolled and not being enrolled in a postsecondary program, improving from 71.3% to 73.6%. The introduction of the postsecondary planning variables does help to better predict enrollment in postsecondary training. We see here that postsecondary goals predict enrolment in some type of postsecondary training; the exponentiated raw coefficient of 1.604 suggests that for those students who had postsecondary goals identified, their odds of being in a two or four year college increase by 1.604 times.

Introducing gender as an interaction term did modestly differentiate between being enrolled and not being enrolled in some type of postsecondary school or training program. Female students had 1.640 times the odds of enrollment in some type of postsecondary school or

training program. Ethnicity did not contribute to the model. Ethnicity had no real measured influence on enrollment in some type of postsecondary school or training.

Overall, students with disabilities were working after high school (50%-69% of variance), enrolled in a two or four year college or university (50% chance), or enrolled in some type of postsecondary school or training program (50% chance). Moreover, adding gender was significant in being employed and not being employed (71.3% chance), enrolling in a two or four year college or university (72.1% chance), or enrollment in some type of postsecondary school or training program (75.9% chance). Ethnicity was non-significant, suggesting that ethnicity had no real measured influence on postsecondary employment, enrollment in a two or four year college or university, or enrollment in some type of postsecondary school or training program. Finally, students with disabilities attended their IEP meeting at a high rate (92%)

Research Findings Matrix

	Indicator 14: The percent of youth who have been competitively employed, enrolled in some type of postsecondary school, or both, within one year of leaving high school			
	Post high school enrollment in a two year or four year college	IEP attendance by student	Post high school employment	Post high school training and education
Gender	Significant	Significant	Significant	Significant
Ethnicity	Non-significant	Non-significant	Non-significant	Non-significant
Measurable post-secondary goals identified	Predict	Does not predict	Does not predict	Predict
Annual IEP goals developed	Predict	Does not predict	Does not predict	Predict
Coordinated set of transition services in IEP	Predict	Does not predict	Does not predict	Predict

Chapter 5: Summary and Conclusions

In the final chapter of this dissertation, an overview of the study's background, purpose, methodology and limitations, along with a summary of the findings will be provided. Moreover, more detailed discussions of the implications for policy and practices as well as implications and recommendations for practitioners will be addressed. Lastly, the areas for future research will be discussed.

Background

Federal and state regulations mandate transition planning and transition services to assist students with disabilities in their postsecondary outcomes because many of them are not prepared for adult life once they exit high school. With the data collected from Indicator 13 and Indicator 14, school divisions are now being held accountable for students with disabilities transition outcomes. The Virginia Department of Education (VDOE) completes an *Annual Performance Report* (APR) that provides information specific to measuring the state's progress on indicators defined by the Office of Special Education Programs (OSEP) of the United States Department of Education; Indicator 13 and Indicator 14 address transition. Indicator 13 measures the percent of youth, aged 16 and above, with an IEP that includes coordinated, measurable, annual IEP goals and transition services that will reasonably enable the student to meet the postsecondary goals (Commonwealth of Virginia, Part B State Performance Plan for 2005-2010). Indicator 14 is the percent of youth who had IEPs, are no longer in secondary school and who have been competitively employed, enrolled in some type of postsecondary school, or both,

within one year of leaving high school (Commonwealth of Virginia, Part B State Performance Plan for 2005-2010).

Purpose of Study

The main purpose of this study was to determine if there is a significant relationship between transition planning and transition services on postsecondary outcomes for students with disabilities. The secondary purpose was to determine if the attendance of students with disabilities at their IEP meetings further differentiate the relationship between Indicator 13 and Indicator 14. The findings of this study will provide special education administrators and transition staff with information that will help them better determine if transition planning and transition services are effective. Moreover, special education administrators will be able to modify existing programs or provide staff development to school special education staff were as follows:

1. Is there a significant relationship between transition planning as measured by Virginia's Indicator 13 Checklist and
 - a. students who have been competitively employed as measured by Indicator 14 survey results?
 - i. does gender further differentiate this relationship?
 - ii. does ethnicity further differentiate this relationship?
 - iii. does student attendance in IEP meetings further differentiate this relationship?

- b. students who have been enrolled in some type of post-secondary school, or both, within one year of leaving high school as measured by Indicator 14 survey results?
 - i. does gender further differentiate this relationship?
 - ii. does ethnicity further differentiate this relationship?
 - iii. Does student attendance in IEP meetings further differentiate this relationship?

Methodology

A non-experimental design was used. The data were derived from preexisting information taken from an Indicator 13 records review checklist, and from the Indicator 14 survey results. In addition, data were collected from the IEP checklist to record the student's attendance at the IEP meeting. A sample of state data collected from Indicator 13 and Indicator 14 was also used. From Indicator 13, data were collected on students with disabilities age 14 and up; however, all students were not used because the focus was on seniors age 18 and above during the 2006-2007 and 2007-2008 school year. From Indicator 14, postsecondary outcome data were taken from survey results of students with disabilities within one year of leaving high school; specific questions were analyzed to show the postsecondary outcome.

Research Design

There were two levels of research to this study. In level one, there was an overall picture of the data by completing various descriptive analyses. In level two,

differences were investigated as well as relationships analyzed. Logistic regression was used to analyze the data in level two. Logistic regression was used to predict the presence of an outcome based on values of a set of predictor variables. The independent or predictor variable (Indicator 13) determined the dependent or outcome variable (Indicator 14). From the collection of IEP student attendance data, the researcher examined the different effects of participation. The IEP attendance data were also included in the regression model to show the strength of student attendance.

Data Collection

Data from Indicator 13 and Indicator 14 was collected from preexisting data. Data for Indicator 13 were collected from seven effective transition practices statements. Postsecondary outcome data from Indicator 14 were collected to see if students with disabilities have been competitively employed enrolled in some type of postsecondary school or both within one year of leaving high school. Finally, students IEP's will be reviewed to assess attendance or nonattendance at IEP meetings.

Analysis

The data collected from Indicator 13, Indicator 14, and IEP student attendance were quantitatively analyzed to determine possible relationships. Indicator 13 was analyzed by using various sources of evidence to see if transition planning and transition services of youth aged 16 and above with an IEP included coordinated, measurable, annual IEP goals and transition services that will reasonably enable the student to meet their postsecondary goals. Indicator 14 served youth who are no longer

in secondary school, and who were competitively employed, enrolled in some type of postsecondary school, or both, within one year of leaving high school.

Summary of Findings

Discussion of Research Questions:

1. Is there a significant relationship between transition planning as measured by Virginia's Indicator 13 Checklist and
 - a. students who have been competitively employed as measured by Indicator 14 survey results?
 - i. Does gender further differentiate this relationship?
 - ii. Does ethnicity further differentiate this relationship?
 - iii. Does student attendance in IEP meetings further differentiate this relationship?

When matching Indicator 13 and 14 variables, the descriptive statistics showed measurable postsecondary goals were identified (63%), annual IEP goals were developed (87%), and a coordinated set of transition services were identified in students with disabilities IEP's (85%). Indicator 13 variables broken out by disability status indicated varying percentages of students with postsecondary goals identified on their IEPs: 67% of students with intellectual disabilities, 90% of students with other health impairments and only 60% of students with specific learning disabilities showed they had postsecondary goals identified on their IEP. Most disability groups had over 90% or more annual IEP goals developed on their IEP's, with the exception of other health impaired, with only 80%. Similarly, a coordinated set of transition services indicated in

students IEP were present in 90% or more in most groups with the exception of specific learning disabilities at 78%.

As for employment, descriptive statistics revealed that students with disabilities have worked since leaving high school at a rate of approximately 70% with the remaining 30% self-reporting that they have not been employed. However, 87% self-reported being in a competitive work setting, revealing a possible data collection error. Nonetheless, this suggests that students with disabilities were competitively employed at a high rate. Employment rates also varied by disability group with 47% of students with intellectual disabilities, 30% of students with other health impairments and 28% of students with specific learning disabilities being unemployed. As post-secondary planning variables were introduced via Block 1, regression model, the model did not differentiate between being employed and not being employed at a rate of 66.7%; this tells us that the introduction of postsecondary planning variables does not help to better predict postsecondary employment. As gender was added to the logistic model with postsecondary planning variables, females continued to have better probability of having postsecondary employment, 5.824 times the odds of postsecondary employment

Indicator 13 variables broken out by racial groups' revealed different rates of post-secondary goals identified (68% for black and 71% for whites), annual IEPs developed (90% for black and 86% for whites), and a coordinated set of transition services in their IEP (86% for black and 82% for whites). Black and white students attended IEP meetings at roughly the same rates. Employment rates varied by racial groups with 64% of black students employed and 71% of white students employed. There were a disproportionate percentage of male students (70%) largely consistent

across disability status, as well as a disproportionate percentage of black students represented across racial groups; black students represented 70% of students with a specific learning disability, 60% of students with an intellectual disability, and 80% of students identified as other health impaired. Only White and African American students were used in the population. Ethnicity was non-significant in all areas of postsecondary planning variables. This suggests ethnicity had no real measured influence on postsecondary employment.

Lastly, students attended their IEP meeting at different rates, with 87% of students with intellectual disabilities, 70% of students with other health impairments, and 96% of students with specific learning disabilities. Out of 183 cases, 91% of students attended their IEP meeting. Students with autism, emotional disability, hearing impairment, multiple disabilities, speech language impairment, and visual impairment attended their IEP meeting 100% of the time. White and black students attended their IEP meeting at the same rate (92%). Overall, students with disabilities attended their IEP meeting.

- a. enrolled in some type of post-secondary school, or both, within one year of leaving high school as measured by Indicator 14 survey results?
 - i. does gender further differentiate this relationship?
 - ii. does ethnicity further differentiate this relationship?
 - iii. Does student attendance in IEP meetings further differentiate this relationship?

Descriptively, post-secondary outcomes as measured by indicator 14 show that students with disabilities enrolled in a two year or four year college (37%), and enrolled in a type of school or training program (25%) since leaving high school. This suggests enrollment in any type of post-secondary education or training was at a very low rate. Few students indicated being enrolled in 2 or 4 year colleges, of those 75% were students with specific learning disabilities. After introducing postsecondary planning variables to Block 1 of the regression model, 68.9% of high school students were not enrolled in a two or four year college. This tells us that the introduction of postsecondary planning variables does help to better predict enrollment in a two or four year college or university. The exponentiated raw coefficient of 7.164 suggested that for those students who had postsecondary goals identified, predicted enrollment in two or four year colleges.

As gender was added to the logistic model with postsecondary planning variables, it was suggested that female students had better odds of being enrolled in a 2 or 4 year college or university. Moreover, gender was significant in differentiating between being enrolled and not being enrolled in some type of postsecondary school or training program; female students had a 1.640 times the odds of enrollment in some type of postsecondary school or training program.

Black and white students attended 2 or 4 year colleges at nearly the same rates of 27% for black students and 25% for white students. Ethnicity was non-significant in all areas of postsecondary planning variables. This suggests ethnicity had no real measured influence on enrollment in a 2 or 4 year college, university, and postsecondary school or training.

In the logistic model, the odds were significant that students attended their IEP meetings, and it did contribute to student's enrollment in a 2 or 4 year college, university, and postsecondary school or training. Since the student's attended their IEP meeting, they could advocate for their interests and needs.

Implications and Recommendations

This research study was designed to determine the effects of transition planning and transition services on postsecondary outcomes for students with disabilities. The secondary purpose was to examine the attendance of students with disabilities at their IEP meetings. The study affects the possibility of an adult with a disability not being able to obtain and keep employment, obtain higher level academic skills, or be able to take care of their needs independently. This study was important because students with disabilities should be afforded positive postsecondary outcomes as their nondisabled peers.

Overall, the school division IDEA transition requirements were being implemented at a level of compliance. However, the availability of the data was not there. To obtain a complete data set, the researcher collected data from several different sources. It would be optimal if the data were stored in one location and would have been stored electronically. Today, Indicator 13 and Indicator 14 data are entered into a web based program for collection.

In looking at Indicator 13 postsecondary variables, it was noted that not all variables had a significant impact on promoting postsecondary outcomes; IEP goals developed, transition services. Is effective transition planning being utilized for students with disabilities? Professional development may be necessary for the school division.

This data should be used to determine the effectiveness of transition planning. It is noted that females' odds are better when attending a 2 or 4 year university or postsecondary type training; there should be a focus on males to receive effective transition planning to promote positive postsecondary outcomes.

The goal of Indicators 13 and 14 is to promote effective transition planning and favorable postsecondary outcomes for students with disabilities. As a Senior Director of Special Education Services, my staff and I must continue to work towards the goal of effective postsecondary outcomes for students with disabilities. However, goal displacement has been a concern with special education teachers not focusing on the outcomes for students. Completing Indicators 13 and 14 has become a perfunctory practice for special education teachers; instead of focusing on the quality of the goal/transition planning, the focus is on the compliance of the Indicators. For Indicator 13, you only need to make sure there is a measurable postsecondary goal. Special education teachers are not focusing on the quality of the goal, or how the goals/objectives/outcomes should be aligned.

As we look towards the future, accountability will be pivotal in our efforts to meet the expected outcomes of the Indicators. Purposeful planning to meet Indicator outcomes must be in the forefront. The policy enactors, "boots on the ground" staff (Special Education Administrators and Teacher Specialists) must provide extensive professional development on research based effective transition practices with a focus on middle schools and transition staff, collaboration with Career and Technical Education (CTE) personnel, as well as hold special education teachers accountable for outcomes at

internship sites and classrooms. Finally, the policy makers must continue to evaluate and update Indicator 13, looking at the alignment of the postsecondary goals-the big picture.

As the Senior Director of Special Education what do these finding say about next steps for our division and for my leadership of the special education department? In short, transition planning variables have no effect on postsecondary outcomes for students with disabilities. Even after adding the postsecondary planning variables, the postsecondary planning variables did not better predict employment. However, the odds of being employed increased if student's had a postsecondary goal identified. Even though a postsecondary goal was identified, it does not mean that it is an appropriate postsecondary goal for the student. Did the student attend their IEP meeting to assist with developing a goal that was of interest to them, as well as developing an achievable goal? It was interesting to see that gender increased the odds of being employed. Females had higher odds of being employed after high school. The perception is that males would be employed after high school, because males continue to be looked at as the one to always get a job to help support the family; the data does not support that.

There was a fifty, fifty chance of students with disabilities being enrolled in a two/four year college or university, or postsecondary school or training program. Conjecture might suggest that there may be an increase in enrollment, since more opportunities have been afforded for students with disabilities to attend a two year college. Postsecondary planning variables did help better predict enrollment. Again, postsecondary goals identified, and the inclusion of gender increased the odds of being enrolled. Females had higher odds of being enrolled in a two/four year college or university, or postsecondary school or training program.

Ethnicity was non-significant. Ethnicity had no real measure of influence on postsecondary employment, or being enrolled in a two/four year college or university, or postsecondary school or training program. In this case, I believe ethnicity did not play a factor because having a disability can overshadow any other subgroup.

Over 90% of students with disabilities attended their IEP meeting. Even though they attended their meetings, was their participation effective? Did they self-advocate for themselves? IEP Teams are responsible for inviting the students to their IEP meeting. Once in the meeting, the student should be an active participant, sharing their interests/needs. If this is not allowed, IEP goals developed may not be appropriate for the student, thus not contributing to appropriate and effective postsecondary outcomes.

Although transition planning is key when working with students with disabilities, transition planning must begin in middle school to be more effective. Students do have postsecondary outcomes, but programs must be put in place to provide opportunities for competitive employment. As a Senior Director of a Special Education Department, it is imperative to provide opportunities for students' with disabilities to have appropriate postsecondary outcomes. I have tasked the Senior Coordinator for Transition Services to develop programs that will ensure appropriate postsecondary outcomes for students, programs that allow for employment after high school.

Areas for Future Research

This research has provided an overview of two years of data from Indicator 13 and Indicator 14. Since it was relatively the school division's first couple of years collecting these data for Indicator 13 and 14, it would be interesting to see the effects of transition planning and postsecondary outcomes for students with disabilities after collecting data for three to five years; three to five years show can show change in the findings of this study.

Postsecondary variables were used to determine outcomes. Future studies could add additional control variables along with the postsecondary variables. These variables could include but not limited to parental attendance at IEP meetings, students on free and reduced lunch, school attendance, and if a student with a disability enrolled in and complete any career and technical classes.

Finally, it would be of great importance to see how the self-determination of a student with a disability would promote positive student outcomes. Even though this study revealed the participation of students with disabilities attending their IEP meeting was a significant outcome, their attendance at the IEP meetings cannot assure meaningful participation.

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Indicator 13

Percent of youth aged 16 and above with an IEP that includes coordinated, measurable, annual IEP goals and transition services that will reasonably enable the student to meet the post-secondary goals.

Total # Records Reviewed

230

* If the response to statement 4 or 5 is not applicable, enter a N/A response.

Statement 4*																						
Transition services were identified that focused on improving the academic and functional achievement of the child facilitating their movement from school to post school.																						
Statement 1		Statement 2		Statement 3		4a		4b		4c		4d		4e		Statement 5*		Statement 6		Statement 7		
Measurable post-secondary goals were identified for employment, education, or training, and as needed, independent living.		Annual IEP goals were developed to reasonably enable the child to meet postsecondary goals.		The IEP included a coordinated set of transition services.		Instruction		Related Services		Community Experiences		Employment and other Post-school Adult Living Objectives		Daily Living Skills		Representatives of other agencies were invited to the IEP meeting.		Transition services were included in courses of study focusing on improving academic and functional achievement of the child to facilitate their movement from school to post-school.		Age-appropriate assessments were considered in the development of postsecondary goals.		
Student	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No

Student ID #																																								
Date of birth:		MM		DD		YY		Describe the type of employment.		Have you ever been having sex?		Right now, are you enrolled in any type of school or training program?		Since leaving high school, have you ever been enrolled in any type of school or training program?																										
VS	NO							COMP	M	SSEL	SUP	HOMEREN	OTR	TR	EP	VS	NO							COM	SMALL	STATE	UNIV	PUBLIC	PRIV	TECH	HOUSING	OTHER	TR	EP	VS	NO	SAME	DIF	TR	EP

Appendix C

Statement 8, IEP Attendance by Student (The statement was added to the Indicator 13 spreadsheet as an additional statement as the data were collected. The researcher selected yes or no for the answer).

Yes No

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Norfolk, VA 23529

Education

Norfolk State University (Norfolk, Virginia)	1995
Master of Arts in Urban Education	
Old Dominion University (Norfolk, Virginia)	1989
Bachelor of Science in Special Education	

Certifications

Administration/Supervision (K-12)
Middle School Counselor
Mental Retardation (NK-12)
Emotional Disturbance (NK-12)

Professional Experience

Norfolk Public Schools, Learning Support-Special Education Services
2013 Senior Director

Norfolk Public Schools, Department of Special Education Services
2008 Senior Coordinator

Suffolk Public Schools-School Administrative Office
2004 Supervisor of Instruction-Special Education

Suffolk Public Schools, Forest Glenn Middle
2004 Assistant Principal

Norfolk Public Schools, Special and Gifted Education Services
1998 Cluster Teacher Specialist

Norfolk Public Schools-Special and Gifted Education Services
1996 Other Health Impaired Itinerant Teacher (K-12)

Norfolk Public Schools-Ruffner Middle School
1990 Teacher of the Educable Mentally Retarded and Behavior Disordered (6-8)