

OUTCOMES OF STUDENTS WITH DISABILITIES IN A DEVELOPING COUNTRY: TOBAGO

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In most developed countries, research studies that investigate the effects of special education on student outcomes have become conventional practice. However, in developing countries such as the twin-island Republic of Trinidad and Tobago, there are no studies about the progress and outcomes of students and youths with disabilities. This correlational study is the first attempt to use direct assessments of English language arts and mathematics, as well as independent functioning skills assessments, aimed at exploring the academic achievement and employment outcomes of 124 participants with and without disabilities in Tobago. The study also compared the performance outcomes of Tobago participants with disabilities with US datasets to see how they measure up in terms of academic achievement and employment. Quantitative analyses of direct assessments and multiple survey responses highlight the factors that predict outcomes in academic achievement and employment among Tobago participants. Findings indicate that parental involvement and support, instruction, student engagement, and support for and difficulty with school work were significant academic achievement predictors for students with disabilities, whereas there were no significant predictors of academic achievement for students without disabilities. The significant predictors of employment for youths with disabilities were parent expectations, teachers' levels of education, youths' school experiences and school program, whereas levels of social interactions with friends, insurance benefits, money skills, types of instruction and types of pre-employment preparation were significant predictors of employment for youths without disabilities. Finally, comparisons with US datasets indicate that Tobago students with disabilities were performing at lower grade levels in academic areas than their US counterparts. Results also found that while Tobago youths with disabilities had fewer employment opportunities than US youths with disabilities, Tobago working youths with disabilities earned higher wages than those youths in the US. These findings highlight the differences between countries in special education practices that present implications for future research on the impact of country policies and programs on outcomes.

Introduction

The United Nations Salamanca Statement and Framework for Action on Special Needs Education (1994) called for access to and quality of education for all students with disabilities to be comparable to that of their non-disabled peers. The Millennium Development Goals (2000) and the Santiago Consensus (2007) reiterated that universal access to and completion of quality primary and secondary education, and opportunities for lifelong learning were equally important goals. The twin-island Republic of Trinidad and Tobago is a member of the United Nations and adopted the UN policies to provide education services to all children, including students with disabilities under its Universal Access to Primary Education (1960) and Universal Secondary Education (2000). Over the years, this developing country with 1.3 million people has been able to establish some access indicators and performance outcomes for its students and youths without disabilities. However, there has been no outcomes data for its population of 27,000 students (to age 19) and over 5,000 youths (20-30 years old) with disabilities (Trinidad & Tobago Census Data, 2000). There is therefore no knowledge about the impact of the country's educational policies and practices on students with disabilities that can guide research studies to measure outcomes.

Like most countries that understand the importance of providing appropriate education for all children and expend substantial financial resources on the education of children and youth, Trinidad and Tobago is currently in the untenable position where there is no comprehensive system for monitoring and evaluating progress and achievement for students with disabilities. Therefore continuous citation of the lack of research data served as constraints when reporting national outcomes on an international scale (UNESCO, 2010; UNICEF, 2007; Ministry of Education, 2007). Education for All (2000), the United Nations Declaration, specifies that data collection mechanisms for monitoring performance indicators are important components in measuring and reporting educational outcomes for all students, including students with disabilities. Of the ten developing Caribbean countries, Trinidad and Tobago is considered the 5th largest and the 2nd richest (following the Bahamas – GDP-per capita of \$21,300) in economic resources with a GDP- per capita of \$19,700 (CIA – The World Bank Fact Book, 2007).

The lack of national data on the performance outcomes for students with disabilities raised fundamental questions: What are the achievement outcomes for students with disabilities compared to their peers without disabilities under the country's Universal Education system? What are the factors that influence their academic outcomes? What percentage of youth with disabilities successfully transition into the workforce? These questions are relevant for all countries that provide educational opportunities for persons with disabilities. These questions present realities that challenge the fundamental provisions for assessing the achievements and outcomes for children and youth with disabilities in Trinidad and Tobago. It becomes more complex when attempting to compare the factors that affect the outcomes in a developing country with those factors affecting outcomes in a developed country when indigenous research studies are lacking.

While the current practice of special education in Trinidad and Tobago responds in part to the United Nations mandates and the national obligation that every child must attend school, there is no evidence that reflects the academic performance outcomes for the students as they move through the education system and into the workforce. There is no evidence about the possible factors that may have contributed to or impeded any successful outcomes for these students. It is clearly understood that access to education does not necessarily translate to achievement, especially in the case of students with special educational needs and, therefore, performance and achievement indicators provide better measures of outcomes that can be viewed objectively on a global level. This lack of disaggregated data on progress and outcomes was also a concern for this and most developing countries by the Convention on the Rights of the Child in its 2006 observation report (United Nations Convention on the Rights of the Child, 2006).

Studies conducted by several developed countries such as the United Kingdom, Canada, and the United States of America have investigated the multiple factors that were relevant and unique to their understanding of the performance outcomes in their respective countries. Research that explores the case of a developing country such as Trinidad and Tobago would benefit the global community by highlighting commonalities and differences in the outcomes of special education. It is known that special educational policies and practices can vary from country to country across the globe based on social, economic, cultural and political perspectives. As such, there may be different factors that influence the performance outcomes of students with disabilities (Artiles & Dyson, 2005; Brown, 2005). While there may be common denominators, such as in the diagnostic criteria and characteristics used for identification of disabilities, the interpretation and implementation of international mandates such as the Salamanca Statement and Framework for Action in Special Needs Education (UNESCO, 1994) may differ (Artiles & Dyson, 2005; Brown, 2005).

Trinidad and Tobago, like many developing countries, currently engage in transferring special education policies and practices from developed nations such as the USA, UK, and Canada, but implement these practices with limited practical knowledge, experience and inadequate infrastructure. This approach may present differences in the factors that may contribute to student outcomes for which no research is available. Therefore, it becomes problematic to discern which factors actually influence the outcomes.

The most definitive research in the area of performance outcomes was commissioned by the United States Department of Education National Center for Special Education Research from which two major longitudinal studies have emerged: The National Longitudinal Transition Studies (NLTS 1987 – 2007) and the Special Education Elementary Longitudinal Studies (SEELS 2002 – 2007). These studies created the national databases that continuously track the performance outcomes of students with disabilities at various transition points and are useful in presenting a national snapshot of how students

with disabilities are faring in the United States (Wagner et al, 1996). The US models for measuring education progress and outcomes are the best and have been carefully revised and replicated over the last 25 years. With the same intention as SEELS and NLTS, this current study was far reaching in terms of the conceptual domains that it addressed. It utilized multiple data collection sources and methods, including interviews, surveys, direct assessments and student records (Wagner et al, 2005; Blackorby et al, 2005). These instruments allowed the researcher to look at the effects of the independent variables of background factors, school factors and student characteristics on the dependent variables of academic achievement and employment and explored how those factors correlated with as well as predicted the outcomes.

This study was the first attempt to carry out any comprehensive research that would highlight the school and later employment outcomes of students and youths with disabilities in the Republic of Trinidad and Tobago, or in any of the developing countries in the UN Caribbean region. This report is an overview of the findings of the study that begins to inform stakeholders of where the developing country is in meeting its special education obligations as part of the United Nations mandate. A specific purpose of this study was to identify the outcomes of students and youth with learning disabilities, speech/language impairments and intellectual disabilities, using the island of Tobago as the pilot and to compare the factors related to those outcomes with similar outcomes in the United States aimed at understanding variations and commonalities between developing and developed countries. The goal is to establish baseline measures that can serve as benchmarks for measuring progress over time as the country moves towards achieving developed nation status in the future.

Method

Setting and Population

Originally a Dutch colony, Tobago was finally ceded to the United Kingdom in 1814 and was united with Trinidad in 1889. The island of Tobago is situated slightly north-east of Trinidad and is 120 square miles. The population is approximately 55,000, and comprises mostly people of African descent, with a small number of East Indians and other foreign nationals of European descent. The study used the two government special education schools and three general education schools on the island for comparisons. The Division of Education, Youth Affairs and Sport of the *Tobago House of Assembly* is responsible for education on the island and supported the study.

Tobago's elementary education population in 2002/2003 was 5,597 served in 33 public and private elementary schools. These schools cater to children from age 5 years to 11 years old under the compulsory education provisions of the Universal Primary Education achieved in 1950 in the country of Trinidad and Tobago. Most schools use the co-educational model (Statistical Digest of the Education System, Ministry of Education of Trinidad and Tobago, 2002-2003). The first important transition occurs when students move from elementary to secondary school at age 11-plus. The Tobago secondary school population reported in 2002/2003 was 4,133 under the Universal Secondary Education obtained in 2000, catering to children from age 11-plus to age 18. The national transition rate to secondary schools in 2006 was 93%, representing 94% males and 92% females. Tertiary education in Trinidad and Tobago is not compulsory. However, the Government of Trinidad and Tobago provides incentives to facilitate continuing education and lifelong learning. In the school year ending 2005, 11% of students (10% males; 13% females) transitioned to tertiary education in the country (*EFA Global Monitoring Report Statistics, 2009, p336*).

Participants

The sample of participants with disabilities used in this study was 79, comprising 51 students with disabilities and 28 youths with disabilities. The comparison groups without disabilities totaled 45 participants, which included 25 students without disabilities and 20 youths without disabilities.

The specific disability categories studied were intellectual disabilities (ID), learning disabilities (LD), and speech and language impairments (SLI). *Intellectual disability* is defined as *significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social and practical adaptive skills* (AAMR Ad Hoc Committee on Terminology and Classification, 2010, p1). Persons with intellectual disabilities have limitations in the ability to function in areas of daily life, such as communication, school activities, self-care and social situations.

Students and youths identified as having *learning disabilities* were those students who began general elementary education schools but later transferred to special schools because of their inability to master learning goals in the general curriculum at a relative pace with their peers. These students often repeated grades in the general education setting and participated in remedial education with little success. Individuals with *speech/language impairments* were those persons whose speech was difficult to understand and follow due to severe stuttering and articulation problems and those whose expressive and receptive language skills were inadequate to sustain age-appropriate communication in both oral and written forms.

Further classifications of participants with disabilities included either Students with Disabilities (SwD) or Youths with Disabilities (YwD), based on their age ranges and developmental transition points. Student participants were selected from among current students at the two special schools in Tobago and were identified by both teachers and parents as having the specific disabilities being studied. Youth participants were those youths who previously attended the two special schools from their elementary through their secondary school years and were also identified by teachers and parents for the study. In addition, the researcher reviewed school records and progress report cards to confirm presence of the disabilities.

Students with Disabilities

For the purpose of this study, students with disabilities were defined as those children who were between the ages of 5 years and 18 years and who received their education in the two government special schools. The study participants identified as having only learning disabilities was 6.6% (5), while 43.4% (33) had only intellectual disabilities and 17.1% (13) had speech language impairments. Among the sample of students with learning disabilities, intellectual disabilities, and speech/language disorders, 43.2% (22) were males and 56.8% (29) were females. There were 8 seven-year-olds, 3 nine-year-olds, 2 ten-year-olds, 6 eleven-year-olds, 1 twelve-year-old, 5 thirteen-year-olds, 8 fourteen-year-olds, 2 fifteen-year-olds, 6 sixteen-year-olds, 3 seventeen-year-olds, and 7 eighteen-plus-year-olds, comprising a total of 51 students.

Youths with Disabilities

The students enrolled in post-secondary specialized settings and who previously attended the special elementary schools were classified as youths with disabilities. Among the 28 youths with disabilities, one of them was a fifteen-year-old who dropped out of general education secondary school. In addition, there were 2 seventeen-year-olds, 1 eighteen-year-old, 2 nineteen-year-olds, 3 twenty-year-olds, 3 twenty-one-year-olds, 2 twenty-two-year-olds, 3 twenty-three-year-olds, 1 twenty-four-year-old, 2 twenty-five-year-olds, 1 twenty-six-year-old, 3 twenty-nine-year-olds, and 4 thirty to thirty-four-year-olds. Among the sample, 21.4% (6) had learning disabilities, 60.7% (17) had intellectual disabilities, and 17.9% (5) had speech language impairments. Males with disabilities accounted for 57.1% (16) while females represented 42.9% (12) of the youths with disabilities in this study.

Comparison Groups

Students and Youths without Disabilities

Twenty-five students without disabilities ranging in ages 6 years to 19 years participated in the study. These students were currently attending general elementary and secondary education settings in Tobago. Twenty (20) youths without disabilities were included in the study. Some of the youths recruited for the study were attending or attended tertiary level education settings, while others graduated from secondary schools and were working. The study matched participants by age ranges.

Data Collection and Instrumentation

Information about the achievement and employment outcomes for participants was derived from a variety of sources adopted from the NLTS/SEELS design, and included parent interviews, teacher surveys, youth surveys, student ratings, and direct assessments using the Woodcock Johnson Tests of Achievement in English Language Arts and Mathematics (WJIII, Woodcock, McGrew, & Mather, 2001). The *direct assessments* in academic areas focused on providing information that would determine whether there were any significant differences in the academic achievement outcomes between students with disabilities in Tobago and students with disabilities in the US. These assessments would also identify any differences in academic achievements among the three disability categories of students in the study: learning disabilities, intellectual disabilities, and speech/language disorders.

Parent/Youth Interviews investigated the school participation and experiences as well as the employment preparation and opportunities for youths. The survey included questions ranging from liking school, getting along with teachers, paying attention, getting work done, and receiving adequate support services, to interviewees' feelings about their disability, participation in developing their educational goals, their achievements, their plans for pursuing higher education and/or employment, participation in job-related skills training and planning and support for their transitions. Responses from these youth survey questions provided data that were relevant to knowing whether there were differences in post-school expectations and outcomes among youths with learning disabilities, intellectual disabilities and speech/language disorders and their non-disabled peers.

Teachers who provided academic instruction to the students identified in the study and who had direct knowledge of the students they served completed *Teacher Surveys*. These surveys focused on the instructional practices and curriculum that the teacher used with the student, accommodations or modifications provided to the student, and the teacher's training and competence in general and special education. The instrument also included a variety of questions regarding the student's classroom performance, both academic and behavioral, and incorporated questions from the *SEELS Language Arts Teacher Survey* and the *Program Survey* instruments, as well as *NLTS Teacher Survey for Special Education Teachers*.

Finally, the *Parent/Guardian Interview Surveys* included questions about student characteristics, disability characteristics, school experiences, family interaction and involvement, employment outcomes, functioning skills, household characteristics and parent expectations. The instruments used in this study were the *SEELS Parent Interview* and the *NLTS2 Parent/Youth Survey*. Since the sample consisted of both students who were currently attending the two elementary special schools and youths who were out of elementary schools, the SEELS survey instrument was more relevant for students while the NLTS2 was deemed more appropriate for youths.

Data Analysis

The study used quantitative analyses procedures to ensure that no important contributing factors were overlooked. Findings emerging from quantitative data were analyzed using SPSS statistical software to calculate descriptive statistics, compare mean scores on survey questions between groups, and use multiple regression analysis to determine if certain factors correlated with and predicted performance based on the strength of correlations. Data analysis techniques used for this study were adopted from the SEELS analyses procedures to ensure accurate data comparisons between this study and the US national studies. Methods used included frequencies, cross-tabulations, and summary statistics. These tools provided descriptive information in conjunction with standard errors to estimate their degree of precision. Correlation analyses included simple and multiple correlation coefficients for continuous, dichotomous, and ordinal data to allow investigation of relationships among variables in comparison with both statistical standards to show the relative strength of specific relationships across subgroups. The study used multiple regression analyses to identify the linear combination of variables in order to predict and explain any variations in the continuous dependent variables while logistic regression analyses indicated the linear combination of variables to predict and explain variation in any dichotomous dependent variables (Blackorby et al, 2004).

Results

Altogether, the study included 124 participants ($N=124$), comprising 51 students and 28 youths with disabilities and 25 students and 20 youths without disabilities. The mean age of the student sample was 13.08 with a standard deviation of 3.85, while the mean age for the youth sample was 24.02 with a standard deviation of 4.72. In the student group, 43.4% were students with intellectual disabilities, 17.1% comprised students with speech or language impairments, 6.6% were students with learning disabilities and 32.9% made up a comparative sample of students without disabilities. In the youth category, 35.4% had intellectual disabilities, 10.4% had speech or language impairments, 12.5% had learning disabilities, and the comparison group of youth without disabilities made up the remaining 41.7%. The gender distribution of the *student* sample was 43.4% males and 56.6% females while the *youth* sample was 60.4% males and 39.6% females.

Results from parent interviews indicated that 100% of the student-participants lived in a household with a parent. In the student sample ($n=76$), 27.6% of respondents were single parents, 40.8% were married, 11.8% were in a marriage-like relationship, 11.8% were widowed, 3.9% were divorced and the other

3.9% were separated. Among these households, parents' level of education ranged from non-high school graduate to having a graduate degree, with the majority of parents being high school graduates: 77.6% - female; 65.8% - male. In terms of employment status of parents, results indicated that 80.3% of female and 86.8% of male parents were working and household annual income reported that 40.8% earned \$25,000 or less while 59.2% earned up to \$30,000.

Results of the teachers in the student sample revealed that 98.7% had general education credentials while 30.3% had special education credentials. Teacher qualifications ranged from a certified teacher's diploma (30.3%) to a professional diploma (7.9%). Among students' teachers, 36.8% had a bachelor's degree, 11.8% had 1 year of coursework beyond the bachelor's degree, 13.2% had a master's degree, and an overall 40.8% reported having received credentials in both general and special education teacher preparation.

For the youth sample (n=48), Youth/Parent (NLTS), results showed that 81.3% of youths were still single, never married; 10.4% were married, and 8.4% were either engaged or in a marriage-like relationship. The marital status of youths' parents resulted in 14.6% being single, 52.1% were married, 16.7% were in a marriage-like relationship, 6.3% were divorced, 6.3% were separated and 4.2% were widowed. Results revealed that 85.4% of all youths were living with their parents. Youths' living arrangements ranged from living alone to living with parents and results indicated that 79.3% male and 94.7% female youth were living with parents, while 13.8% male and 5.3% female were living with a spouse, and 6.8% (all male) were either living on a college dorm or alone. Among the youth participants, 100% of youth with speech/language impairments, 83.3% with learning disabilities, and 94.1% with intellectual disabilities when compared to 75.0% of youth with no disabilities were currently still living with parents.

With regard to family education and employment, 83.3% of mothers and 62.5% of fathers graduated from high school and results indicated that high school graduation was the highest level of parents overall academic achievement. The results from the parent/youth surveys indicated that many of the parents had current jobs, with 83.3% of mothers and 100% of fathers in the workforce. Regarding the overall household income, 35.4% of youths' households reported an annual income of less than \$25,000 while 64.6% reported household incomes of over \$25,000.

Teacher participants completed in-person surveys for each youth in the study. Results of teacher qualifications indicated that 29.2% had a certified teacher's diploma, 16.7% had a bachelor's degree, 22.9% had at least one year of coursework beyond the bachelor's degree, and 31.3% had a master's degree. One-half of the teachers of the youth also reported having special education credentials with 45.8% of them indicating that they received additional training to work with students who are considered to be *at risk* or had disabilities.

Achievement Outcomes

Direct assessments of student and youth participants (N=124) were conducted to identify the differences between participants with disabilities and those without disabilities as a foundation for establishing performance on academic skills across groups since there were no formal test indicator data for students with disabilities in Tobago. The Woodcock Johnson Tests of Achievement (WJ-III) established baseline performance data on school outcomes as reflected through reading and mathematics achievement. To identify performance differences on the direct assessments, Pearson correlations and ANOVAs showed these differences across disabilities for the sub-group categories of students and youths.

The four subtests of the WJ-III were highly correlated with each other (i. e. Pearson correlations ranged from .91 to .96 for students and .88 to .91 for youth) so the scores on each subtest were therefore summed to arrive at the WJ-III total score. The findings indicated that total achievement scores varied significantly across disability categories in both sub-groups ($F(2, 73) = 91.63, p < .001$); ($F(2, 45) = 52.79, p < .001$). Post-hoc Tukey test results revealed that students and youths without a disability ($M=142.24$; $M=149.65$) scored significantly higher than students and youths with learning disabilities and speech language impairments combined ($M=77.80$; $M=110.18$) and students and youths with intellectual disabilities ($M= 36.42$; $M= 60.16, p < .001$), thereby validating a given relationship between disability and school outcomes. Post-hoc Tukey results also indicated that youths with learning disabilities and speech language impairments ($M=110.18$) performed significantly better than students

with intellectual disabilities ($M= 60.16$), also suggesting a known significant relationship between type of disability and school outcomes.

Comparisons with US Datasets: Academic Achievements in Reading

The results revealed higher percentages of Tobago students across all disability categories reading at the 4th grade level or below when compared with US students with disabilities. The highest level of reading achievement for students with learning disabilities was at the 10th grade or above for the US while the ceiling for Tobago students with learning disabilities was at the 7th or 8th grade levels. For students with speech language impairments, reading achievements were at the 10th or above grade levels while Tobago was at the 9th grade level. Students with intellectual disabilities in the US reported highest achievements at grades 7th or 8th, while for Tobago, the highest reading achievement was between 5th and 6th grade, indicating that Tobago students with disabilities were lagging behind the US in reading achievement. A similarity between both countries was that students with intellectual disabilities were the poorest reading achievers which affirmed the SEELS findings (see Fig 1.1).

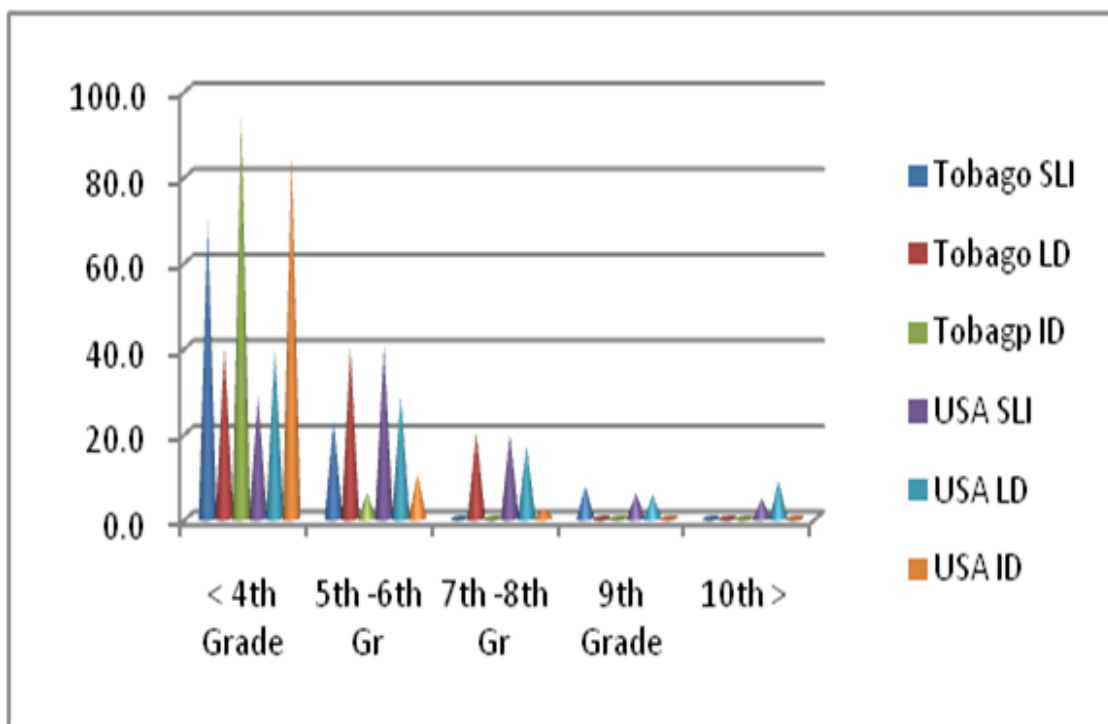


Fig 1.1 Student Percentages at Grade Level

The comparison trends between the US and Tobago youths with disabilities were somewhat different as illustrated in Fig. 1.2. While Tobago reported higher percentages than the US of lowest levels of reading achievement for youths with learning disabilities (50% vs 29.4%), percentages of youths with speech/language impairments were about same as the US (40%; 39.9%), but the US reported higher percentages (80%) than Tobago (64.7%) at that lowest level for youths with intellectual disabilities. However, the highest level of reading achievement for youths with learning disabilities both in the US and Tobago was at the 11th grade or above with Tobago reporting more achievements (33.3%) at that level than the US (7.7%). The highest grade level achievement for Tobago youths with speech language impairments was between the 9th and 10th grade levels while the US youths achieved at the 11th grade and above. Similarly, highest reading achievement for Tobago youths with intellectual disabilities was found between the 5th or 6th grade levels, while the US youths with intellectual disabilities performed up to the 7th and 8th grade levels. The US results also showed a broader spread of reading achievements across the grade levels.

Comparisons with US Datasets: Academic Achievements in Mathematics

Mathematics achievement reflected similar results when comparing US and Tobago performances. Tobago students reported significantly higher percentages of lowest achievement levels at 4th grade and below across all disability categories (80.0%; 76.9%; 97.0%) compared to the US (31.8%; 23.4%; 85.3%). Results also revealed that highest mathematics achievements in Tobago were between the 5th and 6th grades levels while in the US, students with learning disabilities and speech language impairments achieved up to the 10th grade and above, and students with intellectual disabilities were between the 7th and 8th grade ceiling in mathematics. Tobago students are lagging behind the US in mathematics achievement.

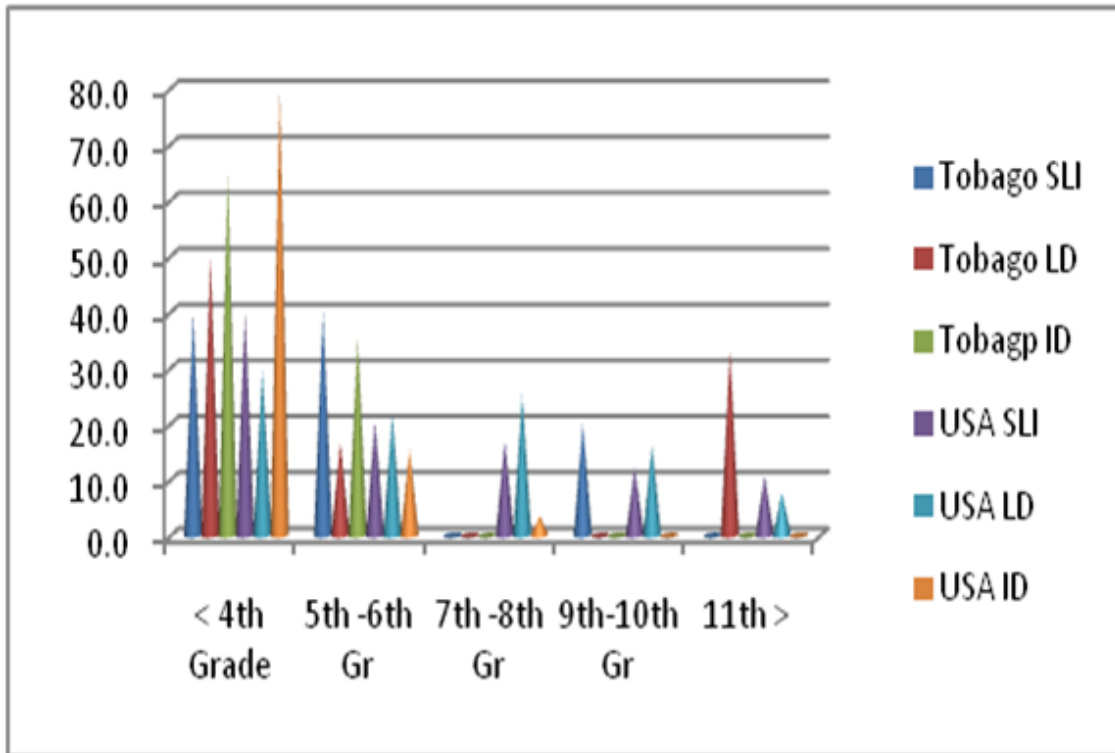


Fig 1.2 Youth Percentages at Grade Level

Similar patterns emerged for significantly larger numbers of youth with disabilities in Tobago (66.6%; 60.0%; 88.2%) at the lowest levels in mathematics achievement when compared with youth in US (26.3%; 31.7%; 79.8%). However, more Tobago youths with learning disabilities and speech language impairments performed at the highest achievement level in mathematics than US youths with comparable disabilities. Both countries reported a ceiling effect in mathematics achievement at the 7th to 8th grade level for youths with intellectual disabilities.

Given the small sample sizes in the groups in this study and the relatively large number of predictor variables, the first approach was to carry out logistical regression models with the variables that showed significant correlations. Afterwards, step-wise regressions identified the specific relationships between each predictor variable and the outcome it correlated to when all other variables in the regression model were held constant. The predictors that were included in the regression models included parent's marital status, household income, total number of people in the household, number of children in the household, student experience, parental expectations, instruction, accommodations students received, student engagement in school, characteristics of school program, parental involvement, students' progress reports, and teachers' highest level of education. Stepwise regression procedures (one for each dependent measure) determined which of the background and school factors significantly predicted academic achievement. The entry criterion was a p-value of .05 while the exit criterion was a p-value of .10.

Predictors of Academic Achievement

For *students with learning disabilities/speech language impairments*, the findings indicated that *Instruction* significantly predicted achievement, as measured by the Woodcock Johnson test ($Beta = .61, p < .001$). *Parental involvement* also significantly predicted Woodcock Johnson test performance ($Beta = .54, p < .001$). The model indicated that 77% of the variance in the dependent variable was accounted for by the amount of instruction students received and their parents' involvement. The findings for *Students with Intellectual Disabilities* indicated that *Student Engagement* significantly predicted achievement, as measured by the Woodcock Johnson test ($Beta = .44, p < .01$).

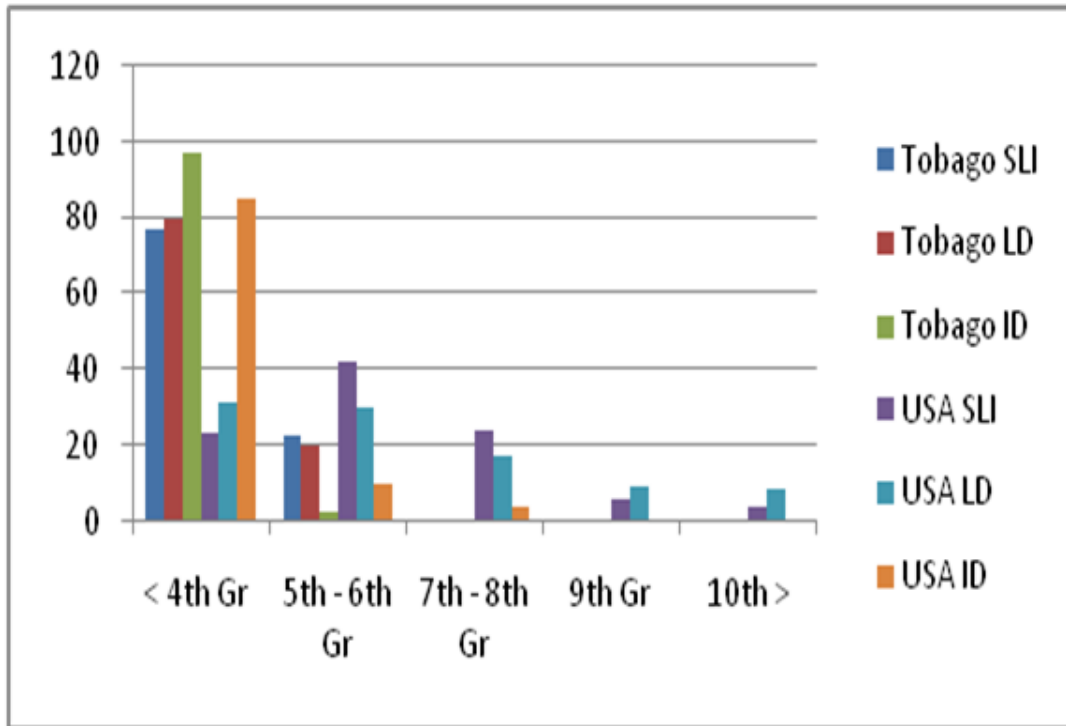


Fig 2.1 Student Percentages at Grade Level

Since youth were at different developmental levels than students, other indicators may affect their outcomes. As such, the regression models for the youth sample included the following predictors, namely: youth's marital status; household characteristics; youth experiences during leisure, participating in school, interacting with friends, handling money, with school, receiving support, getting into trouble, reporting difficulties; youth's feelings about life, about self, about support and about the future. Other indicators included in this model were instruction youths received, accommodations youths received, their school programs, youth engagement in school, and teacher competencies.

In the case of *Youth with Learning Disabilities and Speech Language Impairment*, the findings indicated that *Support* scores positively predicted test performance ($Beta = .25, p < .05$). *Student Experiences – Difficulty* significantly predicted Woodcock Johnson test performance ($Beta = .25, p < .01$). *Student Engagement* positively predicted Grade Level ($Beta = .49, p < .05$). For the *Youths with Intellectual Disabilities*, the regression for the Woodcock Johnson Test of Achievement scores showed that *Student Experiences – Support* significantly predicted Grade Level achievement ($Beta = .61, p < .01$). Therefore, four key factors significantly predicted academic achievement for students and youths with disabilities, namely parental involvement and support, instruction, student engagement, and support for and difficulty of school work. In other words, the more parents were involved and supported their children's education, the more instruction students received in school, the more the students were actively engaged in their school work, and the more support they received with difficult tasks, the better were their scores on the academic tests of achievement. There were no significant predictors of academic achievement for students and youth without disabilities.

Employment Outcomes

In Tobago, more youths with intellectual disabilities than those with speech/language impairments and learning disabilities had jobs. One hundred per cent of youths without disabilities had full-time jobs while youths with disabilities worked only part-time. Among the working youth in Tobago, 69% had no disabilities, 14% had intellectual disabilities, 10% had speech language impairments and 7% had learning disabilities.

Of the youth sample ($n=48$), 29 (60.4%) of them were employed with 62.1% of them earning more than \$25,000 per annum. The first employment measure, *Hours and Wages* consisted of the sum of five survey items, including hours per week, work status, wages per hour, number of years on the job, and monthly income from the job. The findings indicate that *Hours and Wages* varied significantly across the groups ($F(2,26) = 13.51, p < .001$). Post-hoc Tukey test results reveal that this significant difference was due to the following comparisons: Students without a disability ($M = 6501.70$) had significantly greater hours and wages in comparison to students with a learning/speech language impairment ($M = 1079.40; p < .01$) and students with an intellectual disability ($M = 856.75; p < .001$). Tukey tests revealed no significant differences between the two disability groups.

The second employment measure, *Job Experience*, consisted of the sum of the Youth's current job experiences items, including school and community-based work. The results indicate that job experience ratings varied significantly across the groups ($F(2,26) = 5.27, p < .05$). Post-hoc Tukey test results revealed that this significant difference was due only to the following comparison: students without a disability ($M = 14.05$) had significantly lower job experience ratings than students with learning/speech language impairments ($M = 11.20; p < .05$).

Employment Comparison with US Datasets

None of the Tobago youths with disabilities worked on a fulltime basis, while significant percentages (50.8% - LD; 57.2% - SLI; and 51.9% - ID) of youths in the US had fulltime employment. Figure 3 showed that although Tobago youths with disabilities were employed at far lower rates than US youths with disabilities, Tobago youths with learning disabilities, speech/ language impairments and intellectual disabilities reported earning higher wages (50%; 99.9%; 75% respectively) per hour than US youths with similar disabilities (16.9%; 13%; 8.3%)

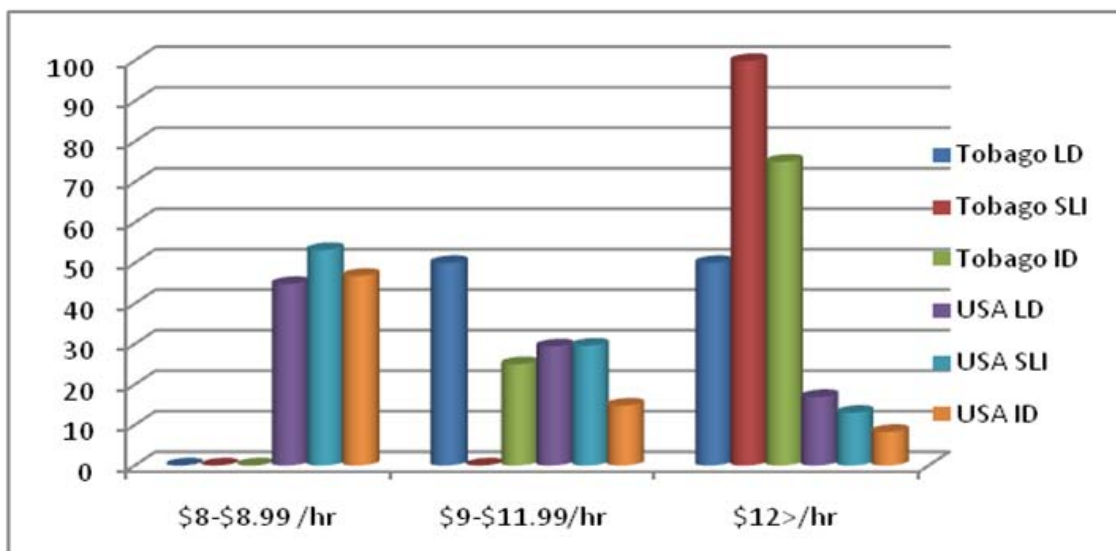


Fig 3. US and Tobago Comparisons- Percentages and Income Ranges by Disability

Predictors of Post-School Outcomes: Employment

The regression results for the indicators of employment included *School Training* and participation in *School-and Community-Based Work*. The regression models for the youth sample included youth's marital status; household characteristics; youth's experiences - during leisure, participating in school, interacting with friends, handling money, with school, receiving support, getting into trouble, reporting difficulties; youth's feelings - about life, about self, about support and about the future. Other indicators

included youths' instruction and accommodations, their school programs, youths' engagement in school, and teacher competencies. The summary in Table 1 below shows that the predictors of employment outcomes for youths with disabilities varied when compared to their counterparts without disabilities.

Other Findings: Parent Satisfaction and Expectations

On average, 88% of Tobago parents were very dissatisfied with the special education services their students with disabilities received and 44% were dissatisfied with their academic education. Among parents' expectations, only 10% expected their children to earn a regular high school diploma, 7% expected that their children would graduate from a 2-year college and there were no parent expectations that any child with a disability will graduate from a 4-year college. However, 41% of parents expected their children will eventually live away from home, 45% expected their youths to get paid jobs, and 34% of parents felt that youths will earn enough to support themselves.

Table 1: Comparisons of Predictors of Employment between Participants with and without Disabilities in Tobago

Participants with Disabilities	Participants without Disabilities
<p>Parent Expectations predicted training scores <i>Parents with higher expectations resulted in higher school training experiences.</i></p>	<p>Teachers Level of Education and Participants' School Experiences predicted training scores. <i>Participants with more qualified teachers and general education school experiences reported better pre-employment preparation.</i></p>
<p>Teachers' Level of Education predicted training scores and school- and community-based work experiences <i>Teachers with at least a Bachelor's degree resulted in higher school training scores and school- and community-based work experiences than participants whose teachers had only a professional or teacher's diploma.</i></p>	<p>Levels of Social Interaction and Marital Status predicted Hours and Wages. <i>Having many friends and being married resulted in more working hours and higher wages.</i></p>
<p>School Experiences, particularly Interaction with Friends predicted hours and wages <i>Participants having more interactions with friends reported working more hours and earning better wages.</i></p>	<p>Instruction and Type of pre-employment preparation predicted Job characteristics. <i>Participants who took a technical, vocational, or business class reported more positive job experiences.</i></p>
<p>School Program predicted job characteristics as well as hours and wages <i>Participants with a combined program of academic and vocational education reported more positive job characteristics, worked more hours and earned better wages than those who reported only academic or only vocational education preparation</i></p>	<p>Household Characteristics, mainly Insurance Benefits predicted Job Characteristics. <i>Participants who reported having work-related insurance benefits reported more positive job experiences.</i></p>

Conclusion

This study on Tobago outcomes for this sample of students and youth with disabilities was the first inquiry to address a need continually cited by the *EFA Global Monitoring Reports* (2006-2010). These reports indicated that limited knowledge of learning outcomes was a major obstacle that resulted in below level expectations and progress by member countries towards achieving the goals of *Education for All* (UNESCO, 2010). The results from this first study indicate that *Tobago is not yet there* in adequately meeting the needs of her citizens with disabilities both in education and in employment, especially when the twin-island Republic has more resources to buttress the program than many other developing countries in the Caribbean region.

Findings in this study responded to important questions about the school and post-school outcomes of students with learning disabilities, speech language impairments and intellectual disabilities in Tobago. This study provides data that are not only relevant to establish a foundation for full-scale research on a national level, but also will contribute to educational reform in the country, as well as add to the body of

literature on educational outcomes for students with disabilities. The results of this study provide a comprehensive overview of the participants' characteristics in terms of background and school factors and the influences of these factors on academic and employment outcomes. Comparative analyses among disability groups in the US and Tobago as well as between students and youths with and without disabilities in Tobago found significant differences. Multivariate analyses identified several relationships between the independent variables and the outcomes.

In the absence of outcomes data for students with disabilities in Trinidad and Tobago, the first implication of this study was the identification of differences between Tobago (part of a developing country) and the US (a developed nation) as a yardstick for assessing the country's goal in the direction of acquiring developed nation status. Although not optimal, this comparison helps to contextualize the results of this study as it identifies the factors that account for the differences between the two countries and indicates whether the differences are germane to improving the outcomes for students and youths with disabilities globally. The comparisons made here should be interpreted cautiously, for while the US results can be generalized on a national level, the Tobago results were based only on the Tobago sample of convenience, and not the entire country of Trinidad and Tobago.

To make proximal comparisons between the US and Tobago, data from the most recently published US national outcomes studies were used. The student sample was compared to the *SEELS-Wave 3* (2006) outcomes while the youth sample was compared to the *NLTS2 – Waves 2 - 4* (2003 – 2009) outcomes studies, where applicable. The results indicated several differences between the educational practices in the US and Tobago, including instructional settings, instructional methods and curriculum that may have influenced the outcomes.

It is important to note that the US practices prior to PL94-142 that mandated free and appropriate public education for students with disabilities in the least restrictive settings, were very similar to current practices in Tobago. The US history of special education moved from institutionalization where persons with disabilities received no formal education but were isolated as a form of protection from the insensitivities of society in residential facilities to being slowly integrated into residential schools, mainly catering to persons with sensory impairments such as blindness and deafness (Winzer, 1986). The early 19th century saw the first attempt to educate students with intellectual disabilities (mental retardation) and other behavioral disorders (Kauffman & Landrum, 2006).

Similarly, the humanitarian sentiments of groups that advocated for more humane treatment and education opportunities for persons with disabilities in the US can be seen as analogous to the Tobago history of disabilities where missionaries and non-governmental organizations stepped in to improve the lives of children with disabilities. Professionals in the fields of medicine, psychology, sociology, social work and education, collectively with parent advocacy groups, played an active role in making the case for special education in the U.S. This collaborative advocacy resulted in landmark legislations that ensure the right to education for, and the removal of the barriers of discrimination of persons with disabilities in the US. Tobago, as well as Trinidad are not yet at this juncture.

A primary difference between the US and Tobago was that students with these disabilities in the US, received academic instruction in a wide variety of settings, including general education inclusion classrooms, resource rooms, and specialized self-contained classrooms. In principle and practice, Tobago students who were identified as having learning disabilities, intellectual disabilities and speech/language impairments received all of their instruction in *special* schools, which are comparable only to specialized self-contained settings in the US. The US practices today require that students with disabilities be educated to as far an extent as possible with their peers without disabilities. Students in the US with similar disabilities as those participants in the Tobago study were mostly educated in inclusive classrooms. This was a significant difference between the US and Tobago whose shorter history of special education does not yet practice inclusion of students with disabilities in general education settings and does not yet provide opportunities for students with disabilities to experience the full continuum of placement options that are available in the US.

Furthermore, limited exposure to the full general education curriculum raises some concerns based on the differences between the US and Tobago with regard to the instructional practices and curriculum used to educate students with disabilities. In accounting for the influences of instructional practices on academic outcomes, the *SEELS* (2007) study found that students who received more of their academic

instruction in general education classrooms had higher reading and mathematics scores and read more fluently than students who did not. SEELS also found that students who participated in the general curriculum without modification had more positive results in reading and mathematics abilities than those students who had substantial modifications to the general curriculum (Blackorby, Knokey, Wagner, Levine, Schiller, & Sumi, 2007). Based on the results, the lack of exposure to the general education curriculum may then be another factor that influenced the achievements in reading and mathematics for students and youth in Tobago.

Additionally, a lack of formal assessment protocols in Tobago for diagnostic and classification purposes may render some students inappropriately categorized, especially if coexisting conditions could have affected their academic performances. Many students classified with disabilities were generally transferred to special schools after low academic performance and achievement were realized in the general education settings in which they began schooling and not through formal diagnostic procedures. Parents and schools relied on their own observations to establish reasons for performance deficits.

The emphasis on academic performance and the accountability measures, including formal evaluations that are mandated in the US national laws through IDEIA and NCLB policies can account for the extensive use of the general curriculum as a measure of academic achievement for all students, including students with disabilities in the US. While Tobago's goals for educating students with disabilities may have the same intentions, there are currently no mandated policies and accountability measures that guide the curriculum and instruction, including individualized education plans (IEPs) and assessment through formal testing for its students with disabilities. The findings in this study indicate that teachers in special schools use their knowledge and skills to foster students' acquisition of reading and mathematics skills, beginning at the most rudimentary level with progress measured by students' mastery of primarily functional academic skills. This strategy, in fact, does not seem to adequately prepare students to aim towards higher achievement in the general education curriculum, such as secondary and tertiary level education, but instead it arms them with the necessary survival skills. It is little wonder that by the time the students age out of the special schools, most of them are equipped with only basic literacy and numeracy skills, with minimal chances of progressing towards higher education goals.

Overall, US students reported higher grade levels in reading and mathematics than those reflected for Tobago students, signaling that Tobago students are lagging behind the US in basic academic achievements with significantly larger numbers of students performing at the lowest grade levels in Tobago. However, the achievements of the Tobago youth sample were more closely aligned with those of the US, but still reflect significantly higher numbers of lowest achievers than the US, especially for youths with learning disabilities and speech language impairments. It should be noted that while Tobago showed higher percentages of youth proficiency at some grade levels, the US reported a wider spread of achievement across grades. The arguments presented in this manuscript are consistent with earlier findings which reported that several factors often influence outcomes. Both SEELS and NLTS2 suggested that students who received instruction in small groups had both higher grades and higher growth in oral reading fluency than students in larger classes regardless of whether they were in general or special education classrooms (Blackorby et al, 2007). The fact that Tobago students with disabilities received more small-group instruction than US students may therefore account for the Tobago results that showed larger numbers achieving reading and mathematics proficiency at some grade levels.

This study also looked at the differences between student and youth with and without disabilities in Tobago to see whether any of these differences had significant influences on the school and post-school outcomes. As expected and like most prior studies, direct assessment results and grade level analyses of reading and mathematics confirmed the impact of a disability on school outcomes, with students without disabilities performing significantly better than students with disabilities. Among the disability groups, students with learning disabilities and speech language impairments outperformed students with intellectual disabilities (Blackorby et al, 2007, Wagner et al, 2006, 2009).

The implication of these differences in educational practices between the US and Tobago were reflected by the parent responses about their satisfaction with the education their children received and their expectations for their youth later in life. The most important difference between the US and Tobago was the dissatisfaction voiced by Tobago parents about availability of special education services for students in special schools and beyond. Parents' dissatisfaction with services across disability categories in Tobago were 80% (learning disabilities), 92.3% (speech/language impairments) and 90.8% (intellectual

disabilities) compared to US parents' dissatisfaction of 27.1%, 13.1%, and 20.2% respectively. These findings come as no surprise since support services for students with disabilities in Tobago are both sparse and inadequate to meet the individual needs of students and youth with disabilities. The US currently has a plethora of support services for individuals with disabilities and is mandated by law to provide these services with the frequency and duration needed to achieve positive outcomes. Tobago, unlike the US, is not yet at this stage where laws and policy mandates are part of the critical infrastructure in the education of students with disabilities. This requires a calculated effort and strong emphasis on special needs as a key objective in the island's economic planning and delivery agenda. It is the hope that the results of this study will serve as a catalyst in *turning the tide* on necessary services for students and youth with disabilities in Tobago.

Likewise, results of parent expectations for the future showed significant differences between the US and Tobago. US parents had higher expectations that their youths with learning disabilities (43.7%) and speech language impairments (52.5%) would attend postsecondary schools than do the Tobago parents of these groups of youths with disabilities (16.7%; 20%). The expectations for graduating from either a 2-year or a 4-year college were very dismal for Tobago when compared to the US. Parents in Tobago reported no expectations that their youths across all disability categories will graduate from a 4-year college and only 20% of parents expected their youths with speech impairments to graduate from a 2-year college. Unlike the US, the current lack of provisions to accommodate students with disabilities in either secondary or tertiary educational settings in Trinidad and Tobago can be the reason for parents' hopeless expectations for higher education opportunities for their children with disabilities. The current options available for most youths with disabilities once they age out of the elementary school system are limited to vocational or technical programs or gaining some form of trade or unskilled employment in Trinidad and Tobago.

Although parents in Tobago had very low expectations for educational achievement for their youths with disabilities, they were more optimistic about their youths' abilities to get a job, earn enough to support themselves, and eventually be able to live away from home. Even so, parent expectations in the US were still higher than those parents in Tobago, with 89.7% compared to 40% of parents of youth with learning disabilities, 85.5% compared to 60% of parents of youth with speech language impairments and 58.8% compared to 35.3% of youth with intellectual disabilities expected their Tobago youth will eventually get a paid job. Regarding their ability to earn enough to support themselves, US parents also were more positive in their expectations than Tobago parents for youth with learning disabilities and speech language impairments, but Tobago parents of youth with intellectual disabilities (29.4%) were more favorable about the prospects for their youths than US parents (15.5%). These findings shed light on the culture of Tobago with regard to disabilities, a society that is still insensitive to the rights and needs of its citizens with disabilities and their families. It is a culture that still somewhat perceives disability as a family issue that is hidden from the rest of society and therefore there is no real impetus for the country to fulfill its obligations to those who are most vulnerable among us.

Probably, one of the most important findings that signaled a significant difference between the US and Tobago was reflected on the results on employment outcomes for youths with disabilities. While more US youths with learning disabilities, speech language impairments and intellectual disabilities were currently employed (Wagner et al, 2009), working youths with disabilities in Tobago were earning higher wages than working youths with the same disabilities in the US. Only 16.9% of youths with learning disabilities in the US compared to 50% in Tobago were earning \$12 or more per hour. Similarly, 13% of US youth with speech language impairment compared to 99.9%, and 8.3% of US youths with intellectual disabilities compared to 75% of Tobago youths were earning more than \$12 per hour. This is hopeful, and not unexpected, since Tobago currently has a number of youth empowerment and employment programs centered on extensive national development thrusts that have created industrial employment opportunities and avenues for many of its young people (Tobago House of Assembly, 2008, www.tha.gov.tt).

Nonetheless, consistent with US studies, youths without disabilities fare far better than youths with disabilities in securing more and better paid jobs (Affleck, Edgar, Levine, & Korterling, 1990; Wagner, Blackorby, Cameto, & Newman, 1993; Newman, Wagner, Cameto, & Knokey, 2009). However, it should be noted that most of the youth in the Tobago sample are currently unemployed but are presently attending a government vocational school aimed at preparing them with improved academic and pre-employment skills. This vocational setting was recently established to correct the previous norm of

aging-out students with disabilities from educational settings with no other option but to fend for themselves. How much this preparation translates to actual employment opportunities is unknown at this time.

With regard to employment measures, a significant difference was found between youths with disabilities and youth without disabilities where youths with learning disabilities and speech language impairments reported having more job experiences than youths without disabilities. This may be due in large part to vocational education and apprenticeship opportunities often recommended for youth with disabilities as their only options after school, while youth without disabilities participated less in vocational education and focused more on academics in preparation for higher education pursuits. This was also reflected in the trend reported in US studies and found in this study in which youths with disabilities begin work at significantly younger ages than youths without disabilities (Newman et al, 2009). In spite of their experiences, they still work less hours and have less earning power than youths without disabilities.

While some of the school and background indicators compared with some of the factors associated with outcomes in the US, it is fair to conclude that there were several significant differences between the US and Tobago outcomes results, particularly with regard to demographic indicators, family economics and support, and school programs. It is important to note that, unlike the US studies, relationships between outcomes and demographic variables such as racial/ethnic backgrounds and gender bore no significance for this Tobago study. This is a stark difference between this Tobago study and the US studies, which consistently report significant correlations between outcomes and racial/ethnic demographics (Blackorby et al, 2003; Wagner et al, 2003, 2006; Newman et al, 2009). An explanation for this difference may be that Tobago has one predominant race with very small percentages of other ethnic groups interspersed around the island (Tobago House of Assembly, 2009, www.tha.gov.tt). The study sample itself had insignificant variations in race and therefore did not present the racial/ethnic differences reported in the US studies.

Similarly, most US studies (Frank, Sitlington, Cooper, & Cool, 1990; Scuccimarra & Speech, 1990; Wagner, 1991; Nisbet & Lichtenstein, 1992; Wagner et al, 2003, 2006) found significant gender differences in student and youth outcomes whereas there were no significant associations between gender and outcomes in the Tobago study. Several factors may be responsible for this finding. First, the omission of gender-associated disabilities such as autism, ADHD and emotional disturbances in this study that may have normally increased the ratio of males to females may be one factor. In addition, school programs for students with disabilities in Tobago often exposed all students to the same curricula content that often did not differentiate subject matter based on gender but focused more on developing adequate life-skills among all students.

Household income was another factor cited in the US studies as having some influence on the outcomes for students with disabilities, in that students with higher household incomes scored better on reading and mathematics tests than students from lower-income households, although there were no relationships found between income and grades (Blackorby et al, 2007). In this study, income was not an influential factor. Although many parents of students and youth with disabilities reported lower incomes than those without disabilities, the analyses revealed no significant relationships between income and outcome indicators. A possible reason for this may be because participants in the Tobago study did not vary in racial/ethnic status that frequently emphasizes minority disparities with income as was the case in the US where *low household income is often related to minority racial ethnic status* (Wagner et al, 2006, Marder et al, 2003).

Overall, the study illuminated some of the educational, economic, social and cultural underpinnings that distinguish the Tobago experience from the US experience for students and youth with disabilities. The major beneficiaries of special education in Tobago – the students and youths and their parents - have expressed their discontent with the services, curriculum, and in some cases, the schools. They have also expressed dismal expectations for post-school success for their students with disabilities. The parents felt that their students and youths with disabilities throughout the country continue to receive education and employment opportunities that are marginal. The problematic issues relate to the lack of social awareness and sensitivity and legitimate inclusive experiences, requiring efficient and adequate early intervention and support services for meeting the individual needs of students with disabilities and their families.

These findings are not new as highlighted in a UNICEF report that summarized the state of Eastern Caribbean countries in meeting the educational needs of students with disabilities as one that lacked specialized services and appropriate and adequate curriculum to maximize educational opportunities (UNICEF, 2007). The specific disadvantages of the Tobago experience calls for a sound infrastructure to promote more optimal academic achievement and employment outcomes for students and youth with disabilities, including laws, mandated policies and adequate funding to support that infrastructure as well as the social commitment to implementing more inclusion opportunities and learning experiences for students and youths with disabilities in society. Notwithstanding that, Tobago is in now in a unique position to use the results of this study to reform its special education system so that all direct stakeholders: parents, teachers and society, but particularly the students and youths with disabilities can realize outcomes that are more successful.

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