DOCUMENT RESUME

ED 290 299 EC 201 762

AUTHOR	Wise, Wilmer E.; Matthews, Cherritta L.
TITLE	A Study of the Relationship of Education and Transition Factors to the Job Status of Mildly and Moderately Handicapped Students.
INSTITUTION	Delaware State Dept. of Public Instruction, Dover. Div. of Research, Planning, and Evaluation.; Delaware State Dept. of Public Instruction, Dover. Exceptional Children/Special Programs Div.
SPONS AGENCY	Office of Special Education and Rehabilitative Services (ED), Washington, DC.
REPORT NO	95-01/87/06/04
PUB DATE	Jun 87
GRANT	G0085C3516
NOTE	93p.; Completed jointly by the Planning, Research and Evaluation Division and the Exceptional Children/Special Programs Division.
AVAILABLE FROM	Bureau of Archives and Records, Hall of Records, P.O. Box 1401, Dover, DE 19903 (microfiche).
PUB TYPE	Books (010) -- Reports - Research/Technical (143)
EDRS PRICE	MF01/PC04 Plus Postage.
DESCRIPTORS	*Disabilities; *Education Work Relationship; *Employment Level; *Employment Patterns; Graduate Surveys; *Mild Disabilities; Postsecondary Education; Special Education; *Vocational Followup
IDENTIFIERS	Delaware; Vermont

ABSTRACT

This study sought to replicate a 1984 Vermont study on the work status of handicapped youth, using data from 415 mildly and moderately handicapped students who graduated high school in 1985 in Delaware with either a diploma or a certificate. The study also sought to expand the Vermont design to include a broader range of factors relating employment status and school preparation. Factors in both studies related to employment status were school location, gender, manner of exit, and work experience in high school, with no relationship between employment and vocational experience. In both states, jobs tended to be located through a self/family/friends network rather than through employment-related service agencies. In the expanded study involving Delaware students only, results showed that the special education/vocational programs were producing employable students, with 67% employed full- or part-time (compared to 80% employment for all youths). The learning-disabled were more likely to be employed than individuals with other handicapping conditions. Program placement (e.g., resource room, self-contained, special school), intensity of special education services, and vocational training were not related to employment status. Factors showing the strongest relationship to holding a job were transportation availability, method of exit from school, and race. (JDD)

A Study of the Relationship of Education and Transition Factors to the Job Status of Mildly and Moderately Handicapped Students

Project Number: 159 AH 50003
Document #: G0085C3516

Submitted to:

U.S. Department of Education
Office of Special Education & Rehabilitation Services
Washington, D.C.

Submitted By:
State of Delaware
Department of Public Instruction
Dr. Wilmer E. Wise, Project Director
Dr. Cherritta L. Matthews

June 1, 1987

A Study of the Relationship of Education and Transition
Factors to the Job Status of
Mildly and Moderately Handicapped Students
Project Number: 159 AH 50003
Document #: G0085C3516

Submitted to:

U.S. Department of Education
Office of Special Education & Rehabilitation Services
Washington, D.C.

This study was completed under a grant to the Department of Public Instruction by the U.S. Department of Education.

Leadership for the project was shared by the State Director of Planning, Research and Evaluation and the State Director of the Exceptional Children/Special Programs Divisions. A Steering Committee assumed supervisory responsibility for project activities. A Project Director was employed for the duration of the project to oversee and manage the day-to-day operation of the project.

Steering Committee

Dr. Wilmer E. Wise	Dr. Carl Haltom
Dr. Chester Freed	Dr. Alice Valdes
Dr. Adam Fisher	Vaughn K. Lauer

Project Coordinator
Dr. Cherritta Matthews

Contracted Services

Dr. Martha Brooks - Data Collection
Dr. Rita Fillos - Data Analysis

June 1, 1987

THE STATE BOARD OF EDUCATION

Charles E. Welch, Wilmington, *President*
Mrs. Elise Grossman, Wilmington, *Vice-President*
Donald E. Cielewich, Wilmington
Richard M. Farmer, New Castle
Kenneth V. Hilton, Newark
Dr. Kent S. Price, Lewes
R. Jefferson Reed, Dover

OFFICERS OF THE DEPARTMENT OF PUBLIC INSTRUCTION

Townsend Building
P.O. Box 1402
Dover, Delaware 19903

William B. Keene, *State Superintendent*
John J. Ryan, *Deputy State Superintendent*
Jack P. Varsalona, *Administrative Assistant*
Sidney B. Collison, *Assistant State Superintendent*
Instructional Services Branch
James L. Spartz, *Assistant State Superintendent*
Administrative Services Branch

This publication is available in microfiche from the Bureau of Archives and Records, Hall of Records, P.O. Box 1401, Dover, Delaware 19903, and printed in the U.S.A.

Document No. 95-01/87/06/04

Table of Contents

Executive Summary

The shortage of research-based data on the work status of handicapped youth has been a drawback to the development of school efforts to enhance the transition from school to work for these students. This study was undertaken to remedy that information shortage in two ways: the first by replicating the descriptive information collected in a statewide Vermont study in 1984. Second, by expanding the Vermont design to include a broader range of information or possible factors which may relate employment status and school preparation of the mildly and moderately handicapped student.

The population of the Delaware study was all 415 mildly and moderately handicapped students who graduated high school in 1985 with either a diploma or certificate. Ninety three percent of these students provided data for the study. This data was collected from high school transcripts and telephone interviews.

Although some difference exist in the design of the Vermont and Delaware studies the results were found to be comparable. The factors in both studies that were related to employment were school location, gender, manner of exit and work experience in high school. For the overall data set there was no relationship between employed/non employed and vocational experience. In both states jobs tended to be located through a self/family/friends network rather than through utilization of employment related service agencies.

The second purpose of the Delaware Study was to extend the discriptive information or characteristics of the employed/non-employed mildly and moderately handicapped and also describe the relationship of an expanded list of personal and program variables to this work status.

These results show that within exceptionalities no relationship appeared between vocational credits, employment status and wages. Current employment is favored by membership in the learning disabled category rather than, SEM or physically impaired.

Special education/vocational programs are producing employable students. However, program placement, intensity of special education services and vocational training are not related to employment status.

The factors which show the strongest relationship to holding a job for these students are transportation availability, method of exit and race. These are consistently powerful factors influencing employment status.

The course taking pattern by academic credit hours of vocational students do not differ significantly from that of comprehensive school students and the course taking pattern of these mildly and moderately handicapped does not differ from the national pattern of general academic students.

It is recommended that policy makers study these results and then examine the programs for enhancing the employability of the mildly and moderately handicapped which operate in their school. Particular attention should be paid to supporting students to receive a diploma, job experience and a drivers license. Extra work needs to be done on the job preparation of women and blacks according to the findings in this study.

The results of this study in conjunction with those done in Vermont, Colorado, and on 1983-84 data in New Castle County all suggest that vocational training, in combination with special education programs has a barely detectable effect on employment of the mildly and moderately handicapped. This finding sends a strong message for program examination and renewal.

INTRODUCTION

Problem

Child count data reported in the Seventh Annual Report to Congress on the Implementation of the Education of the Handicapped Act (1985) indicate that the number of postsecondary-age (age 18 to 21), disabled youths served in public schools increased by more than two-thirds from 1980 to 1984. In one state, Delaware, the percentage of public school students who were handicapped increased from 9.8 to 12.4% in seven years (1978 to 1985). Demographic data collected for this period project that between 50 and 80% of these disabled students would be without gainful employment as young adults (U.S. Bureau of the Census, 1982; U.S. Commission on Civil Rights, 1983).

The economic and social implications of this problem are driving support for programs that promote the transition of disabled youth from school to work (Will, 1984a, 1984b). Vocational education is seen as the principle means to alleviate transition difficulties. Phelps (1985) notes that the enrollment of special needs students in vocational education by the early 1980s amounted to approximately 20% of vocational enrollments. The Perkins Vocational Education Act (1984) specifically recognizes and promotes vocational education as the avenue to increase the employability of handicapped youth. The Perkins Act calls for the quality of such programs to be measured by their pertinence to the workplace and their demonstrated capacity to ease the school-to-work transition.

Despite the tone of the Perkins Act (which seems to assume that the causal links between program and employability can be put in place), the factors relating employability of handicapped youth to vocational programs have a thin research base. Horn (1983) concluded that this research was pessimistic insofar as locating predictors of employability (e.g., most recent studies of learning disabled youth focus on achievement and behavior concerns rather than employment status).

However, a statewide study in Vermont (Hasazi et al., 1985) was directed towards describing the employment status of handicapped youth and the relation of that status to educational, vocational, and demographic variables. The results of this study show that, while general educational and vocational experiences may be tied to employability, non-program factors such as level of functioning, gender, and school location can also be relevant predictors of employment for this set of subjects.

The Vermont findings provide a baseline but also highlight the need for further research to increase the design breadth, to extend the student sample, to improve the precision of the variable definition, and to expand the problem focus to further document the conditions related to employment of disabled youth.

Purpose

A statewide study to determine the relationship between school program and employment of handicapped youth is important and needed: important as a contributor to the limited knowledge base on the topic; important for state policy and monitoring; important to school district policy, planning, and transition to work; and, needed to assist in developing individualized school programs which will maximize the employability of handicapped youth.

The primary significance of this study is that it directly addresses a long-standing question relating to the efficacy and impact of special education programs: Are our programs for handicapped students producing employable adults? This question is significant on social, humanitarian, and fiscal dimensions.

Our review of the literature indicates that, although many previous follow-up studies have examined the job status of handicapped students, most have been severely restricted in scope. Usually, such studies have included students under a single handicapping condition (e.g., mentally retarded), have confined data collected to a single point in time (e.g., post-school interview), and have looked at the job status of students exiting from a single type program (e.g., a vocational program).

At this time, however, the state agency is in need of broad-based and basic information. Therefore, it seems more reasonable to look holistically at the overall, long-term impact of programs sharing a common outcome goal for handicapped students and to attempt to identify, by this means, promising variables impacting, causally or otherwise, on long-term impact prior to the design and conduct of more focused or in-depth studies.

For these reasons, we propose to include in this study all disability types that are generally considered mild or moderate in nature, thereby excluding only those students with severe and profound handicaps. In doing so, we will also have included all school types in operation in Delaware.

The study is designed to answer such questions as:

- o Are our special education/vocation programs for the handicapped producing employable students?
- o How do program placements relate to post-school employment and continuing education status?
- o How does the intensity of secondary vocational and training experience relate to job status?
- o How does method of exit relate to job status?
- o How does the intensity of special education services relate to job status?
- o How do transportation variables relate to job status?
- o What programs do mildly and moderately handicapped students elect in secondary schools?
- o What course-taking patterns are exhibited by mildly and moderately handicapped students in secondary schools?

We are aware that definitions for various disability types vary at the federal level among agencies and vary between states. For this reason, we will perform analyses using the designations mildly and moderately handicapped and describe in detail the constitution of those groups, by handicapping condition, included in the study.

The use of data obtained from a post-high school interview and from records and transcripts will provide information about students for three periods of time: (1) during high school, (2) at exit from high school, and (3) at six months after exit from high school.

The study, as proposed, includes several variables that have been infrequently investigated, if at all, in relation to employment although their potential for increasing the interpretability of job status seems high. They are:

- o **Intensity (concentration) of the special education program** to which the student was exposed. Intensity will be measured by the number of hours the student spends with a certified special education professional.
- o **Intensity (concentration) of the vocational education program** to which the student was exposed. For this variable, we propose to use the definition for vocational concentration use in the 1985 High School and Beyond study, "An Analysis of Course-Taking Patterns in Secondary Schools as Related to Student Characteristics."
- o In light of the importance of **transportation** in today's workplace in students getting to and from work and because many jobs require a driver's license, we will include questions pertaining to these matters and a question about the successful completion of a high school driver's education course. Transportation is of particular concern in Delaware, since public transportation systems are available only in the northernmost area of the state.
- o There is much to be learned from an analysis and description of **programs** and **course-taking patterns** for these students. We propose to use categorization and analytic method used in the High School and Beyond study cited above. These are described in the "Transcript and Records Analysis" section.
- o The **method of exit** information is particularly relevant in Delaware since "exit with diploma" is tied to State Board of Education minimum competency requirements. Students exiting with diplomas in Delaware, we assume, will have attained a

level of basic skill competency in reading, writing, and mathematics cited by employers as an essential condition of employment.

Design

The study design is intended to provide: (1) descriptive information concerning the employment status of mildly and moderately handicapped youth in Delaware following their exit from the educational system, and (2) information on potentially explanatory conditions and variables that may lead to program improvement and/or provide help in understanding the dimensions of the problem.

The design includes a post-high school follow-up survey and an analysis of high school records and transcripts to provide information that may explain more fully the results obtained in the follow-up survey.

PROCEDURES

Subjects

The study focused on 415 students from all 17 Delaware school districts, including students who attended vocational high schools. According to school officials, 415 special education students who were categorized as either moderately or mildly handicapped had left school in June 1985 via a diploma, record of attendance, or maximum age. Students were further described by exceptional category, program placement in the last year of school, and special education services level, as defined by Delaware policies. The population under study encompassed the following exceptionalities: learning disabled, emotionally disturbed, mentally retarded, and physically impaired (i.e., those students who were either orthopedically, visually, and/or hearing disabled). Program placements were defined as intensive learning center, special school, resource room, or self-contained classroom. Special

education service levels were categorized according to the severity of the primary handicapping condition (i.e., either mild or moderate).

Of the 415 students, 352 exited from high school with a diploma and 63 with a certificate. The age at exit ranged from 16 to 21 years. There were 267 males and 148 females in the study, of whom 348 were in resource rooms, 37 in self-contained classrooms, and 30 in other placements (intensive learning centers or special schools). In terms of special education service levels, 326 students were categorized as mild with regard to severity of handicapping condition and 89 as moderate. More specifically, 223 students were classified as learning disabled, 79 as emotionally disturbed, 71 as mentally retarded, and 22 as physically impaired.

Urban, rural, and metropolitan localities were represented in the population under study. For the purposes of this study, metropolitan was defined as a district or residence located in population centers of standard metropolitan statistical areas. Urban classification described those areas which have one or more participating towns with a population greater than 2500, whereas rural areas are those which have no participating towns with a population greater than 2500. Of the subjects in the study, 162 students attended schools in urban areas, 74 in rural areas, and 178 in metropolitan areas.

Measurement

Student information was obtained through two instruments which were modeled after those used in the University of Vermont Transition Follow-Up Study. Both instruments were pilot-tested. The first instrument involved analysis of student records and transcripts and provided information about age, gender, race, IQ, handicapping condition, program placement and services, school location, and course-taking patterns. This instrument was completed for all 415 students in the study. The telephone interview focused on employment-related variables; more specifically, it yielded data on vocational education courses,

continuing education enrollment, utilization of social services, transportation variables, employment during and after high school, duration of employment, wages, job classification, job-seeking strategies, marital and residential status, and satisfaction with high school programs. The interview was completed for 368 (88.7%) of the total 415 students.

Data Collection

The names of the special education students who had left school in June 1985 via a diploma, record of attendance, or maximum age were obtained from local district superintendents after an initial meeting to inform them about the scope and purpose of the study and to gain their support. Consequently, local supervisors of special education cooperated with the request for student names. Authorization was then secured to obtain student names and relevant demographic data from the Data Service Center, a centralized data base/retrieval center serving the school districts. Data collectors, familiar with school records, attended a training session prior to reviewing student records. Each school was contacted in advance to arrange for an appropriate time for the records review and was requested to have the cumulative folder and special education file available for the identified students. The relevant information was then garnered from the records and entered onto the transcript and records instrument.

A training session was also conducted prior to the individual telephone interviews and letters were sent to students in advance as a way of explaining the purpose of the interview and of securing cooperation. Interviewers also had a statement of introduction to be used upon contacting the students. Interviewers were assigned lists of students to contact and, if the students themselves could not be reached, a significant other (such as a parent or grandparent) was interviewed instead.

A renewed effort was made to secure a high completion rate for the telephone survey. Many students had not been interviewed due to transiency, insufficient address, or inability to be reached by

telephone. A second letter was prepared and mailed to these students who had not yet been contacted. Interviewers utilized additional techniques and often were able to personally contact students. Strategies that proved successful in this renewed effort state included: (1) utilization of the Cross-Reference Directory found in the public library for verifying current information on names, addresses, and telephone numbers; (2) information from mailmen; and, (3) former students who had knowledge about the current residence of classmates. Interviewers also relied upon their own familiarity with the area. This renewed effort boosted the completion rate of interviews from 62 to 88.7%.

Data Analysis

Once completed, the instruments were coded and entered for analysis using SPSS^{x}. The first step involved a review of the frequency distributions for each variable in order to answer questions regarding the demographic composition of the sample. Subsequently, several variables were collapsed due to small cell size and to facilitate cross-tabulation and tabular displays. Such decisions were made after consultation between the project staff and the contracting agency executing the analysis. Additionally, several variables - such as IQ and length of time employed since high school - were analyzed as categorical (collapsed) and as continuous (not collapsed). For example, the categorical treatment of months employed since high school involved collapsing the data into groupings such as "one to four months," "five to eight months," etc., whereas the continuous or non-collapsed treatment would use the actual number of months employed as reported on the interview form. Categorical treatment was employed within the context of cross-tabulation and analysis of variance and continuous treatment within the context of regression and correlation. School and demographic variables were considered as predictors and employment-related variables as outcomes.

Limitations

There are several limitations of the methodology used in this study. First, the instruments were designed in a closed format and telephone interviewing was used for one of the questionnaires. Even though this study is a partial replication of the Vermont study, the limitations inherent in survey techniques are nevertheless germane and should be briefly addressed. When using the closed format and telephone interviewing, there is the possibility that relevant material from the subjects or from the interviewer's observations and probing will be generally unavailable since most interviews were conducted on the telephone and the alternatives in the structured instrument were prepared in advance. It is also more difficult to develop and maintain rapport in a telephone interview, an important point here when one considers the nature of the subject pool. It should be noted, though, that the interviewers did not read the responses to the students. A question was posed and the interviewer could clarify the student's response. The alternatives or categories for the questions (as well as the questions, themselves) were, however, determined before the interview.

Another limitation, also noted in the Vermont study, is that only one state was involved. The Vermont study called for replications in other states but both Vermont and Delaware are small states with similar-sized (small) populations. One consequence, for the Delaware study, is that even though the entire population of interest was used, a relatively small number of subjects still resulted and is evidenced in very small cell sizes for some variables and/or extremely unequal cell sizes. Nevertheless, although Delaware has a small population, it does have more metropolitan areas than does Vermont and this characteristic could serve to increase the generalizability of similar findings encountered in the two studies.

The limited usefulness of self-report measures (such as evaluating one's own success on the job) should also be noted. Finally, in the transcript analysis, course-taking patterns were

recorded only in terms of credits earned within broad subject areas, such as humanities or science. Specific courses and the grades received in courses were not included in the instrument. The degree of success within courses might affect outcome variables as might the specific courses taken (e.g., did certain vocational programs or courses produce more employable students?). Also, the relationship between type of vocational courses and subsequent employment might be of interest (i.e., did students enrolled in auto mechanics programs find jobs in related fields or is there possibly a benefit in simply being enrolled in a vocational program?). An expanded transcript analysis could yield more clues to the relationship between coursework, programs, and employment outcomes.

FINDINGS

PART I: Replication of the Vermont Study

This Delaware study was designed to be (a) a partial replication of the Vermont study and (b) its expansion with respect to sensitivity of measure for employment, school program, and demographics. Therefore, the results will be reported in two parts: the first to show the comparability to the Hasazi et al. (1985) findings and the second to describe the components added for further understanding of the relationship between differing operational definitions of employment and school/student factors.

Results of the Replication

Tables 1 through 11 are prepared to correspond with those in the Vermont study and, where possible, show results from both data collections. Table 1 compares the similarity of the samples with respect to manner of exit from high school, program placement, and gender. All Delaware students included in the study had finished school with either a certificate or diploma; those in the Vermont study included dropouts. Eighty-five percent of Delaware mildly and moderately handicapped students finished school with a diploma, whereas the Vermont sample shows 59%. These percentages are

similar to those for program placement: resource room, Delaware 84%/Vermont 66%; self-contained classroom, Delaware 9%/Vermont 29%. The distribution across gender is essentially the same for both studies: males 64%, females 36%. All Delaware students exited in 1985, while those in Vermont exited from 1979 to 1983.

In Table 2, current work status and source of job descriptive statistics show comparable percentages for the two states. Both samples show 47 to 55% full-time employment and 6% unemployed, not seeking. In both Delaware and Vermont, 53 to 55% claim they found their job by themselves and 26 to 28% through family or friends. Vermont subjects were more likely to recognize help from a teacher than from a counselor, but in Delaware that pattern was reversed.

When geographic location of school attended, gender, and high school education program are examined for relationship with employment, Delaware, like Vermont, showed statistically significant differences across the categories of each variable. However, there are differences in direction and extent in each case. Table 3 shows the highest rate of employment by location to be urban (63.5%) in Vermont, whereas the highest rate according to high school location in Delaware is rural (90.1%). Twice as many mildly and moderately handicapped students were employed in rural Delaware than in rural Vermont.

Also, in Vermont, twice as many males than females were employed; in Delaware, the proportions were closer--80.9% of males to 64.4% of females (the percentage of males employed in Vermont).

High school program assignment was statistically associated with employment. The percent employed varied significantly across programs for each state. Vermont was most successful with "other" physically handicapped (77.8%), although the total N in this category was only 18. In Delaware, the percentage of self-contained employed was little different (73.5) from those in resource rooms (77.9) and, in both states, resource room students fared best for future employment. Hasazi et al. (1985) note that high school program serves as an "alias" variable for level of functioning (as confirmed by correlation between IQ measures and program in the Delaware data). But, as there is not a direct

linear relationship between high school program and employment, there seems to be the possibility in both states to override level of functioning when finding employment for mildly and moderately handicapped individuals.

In Table 4, the relationship of current employment to manner of exit from high school, vocational education, work experience in high school, and school jobs shows some differences in descriptive statistics for the two studies. Manner of exit and having a school job made a difference in both Delaware and Vermont. Vocational education experience was significant in Vermont, but not in Delaware (similar percentages of employed students had vocational experience as had not). Delaware found work experience in high school related to employment ($p=.01$); yet, this association was weaker in Vermont ($p=.10$).

The next variable examined concerns the use of job-related service agencies by handicapped youth to obtain employment. In the Vermont study, 65 to 95% reported no contact at all with Vocational Rehabilitation, Mental Health Centers, and Vermont Job Service (Hasazi et al., 1985). In the Delaware study, 94 to 99% reported no contact with Vocational Rehabilitation, Jobs for Delaware Graduates, and the Transitional Project (Table 5).

Currently employed participants were asked how they found their jobs: 84% of the Vermont and 81.5% of the Delaware total sample reported finding jobs through self/family/friends. In both states, only vocational rehabilitation service agency contacts were mentioned more often than the self/family/friends network for subgroups.

In Delaware, school location and gender were not statistically related to the former students' means of finding current employment. As in Vermont, Delaware individuals in urban and rural settings were more likely to use the self/family/friends network. Females were slightly more likely than males in Delaware to use other sources for locating jobs. Students in self-contained classrooms were three times more likely to have used other means of finding employment than resource room placements. These data are presented in Table 7.

Table 8 displays the relationship between wages and high school experience variables. The Delaware manner of exit shows that finishing with a diploma is directly and reliably related to being paid more than minimum wage. Vocational course-taking, work experience in high school, and school jobs were not a factor in current wages. Vermont found that high school summer employment related to current wages. However, four (rather than three) wage categories were used - perhaps causing this statistical analysis to be more sensitive.

Locations of schools, classified by occupational title of student jobs, are presented in Table 9. Service occupations account for 17.6, 36.8, and 42.9% - respectively - for rural, urban, and metropolitan settings. In urban settings, this principal category is followed by structural occupations (23.7%) and clerical/sales occupations (20.2%). In rural areas of Delaware, students are employed almost equally in agricultural and service occupations - nearly double the rural service occupations figure for Vermont. Metropolitan data from both studies are similar, with 74% employed in service occupations and clerical/sales occupations. In Delaware, the diversity of job types was available to varying degrees in all three settings.

Table 10 of the Hasazi study, entitled "Two- and Four-Year Employment Profiles," was not replicable from Delaware data because histories were collected from only one student cohort, one year after leaving school.

The analysis of variance of time employed since high school (displayed in Table 11) found significant differences by gender and by jobs held during high school. In Delaware, the dependent variable was mean months employed (which, because the "time count" began in June 1985, is directly comparable - for ANOVA purposes - to Hasazi's percent of time employed). Vermont also found significance in employment category across gender, high school program, and jobs during high school.

Comparability of the Vermont Study and the Delaware Replication

The findings from the demographic description of the sample from Vermont and Delaware show that the two studies can be compared with confidence. The principal differences in the data sets lie in: (1) the design aspect, whereas Vermont students finished from 1979 to 1983 and Delaware used the school-finishing cohort from 1985 and (2) that Delaware students finished school and earned either a diploma or certificate, while some of the Vermont sample dropped out. These differences result in more variability in the Vermont sample in several measures (e.g., percent of time employed).

Location

School location was a significant factor in determining employment status in both states. In Delaware, the prime location was rural, followed by urban and metropolitan; in Vermont, this pattern was reversed. The difference may reflect the reality of available jobs as well as students' network to access these jobs.

Gender

In both studies, males were more likely than females to be employed. The ratio was 80% to 64% in Delaware and 66% to 33% in Vermont. These figures suggest that handicapped and non-handicapped young women need special assistance to reach the employment level of their male counterparts.

School Program

In Delaware, students' employment rates were not related to whether they were placed in a resource room or self-contained special education class last. Approximately three-quarters of all students sampled were employed in either case. There was a significant difference between these categories and "other" placements. This "other" category contains intensive learning centers, orthopedically handicapped and the deaf--the more visibly handicapped students. Vermont students, on the other hand, were significantly more likely to be employed if their last placement was in a resource room. There is no way of knowing if this program

variable is confounded with manner of exit, where resource room students were more likely to finish school and receive a diploma than to drop out.

Manner of exit from high school was a strong, consistently replicated predictor of employment status (defined as employed/not employed). Mildly and moderately handicapped students from any program placement, school location, or gender are more likely to be employed if they have a diploma.

With the dependent variable dichotomous - employed/not employed - the Delaware data did not show any relationship between current employment status and the effect of vocational education. Delaware handicapped students with and without vocational education were equally likely to be employed (77% vs. 72%). The measure of vocational experience was also dichotomous - vocational experience/no vocational experience - and, because both variables in this analysis had such restricted range, the sensitivity to detect group differences was restricted. Support for accepting the finding of "no difference" from vocational education is enhanced, however, by the fact that vocational experience was also not a significant factor in Delaware in relation to student wages. Not only does vocational experience seem to be unrelated to whether students were employed, it also seems unrelated to how much those who were employed were earning. The Vermont data found a significant difference across employment status but not wages.

Work experience shows a relationship to employment status in both states. Handicapped students who had work experience in high school and/or summer jobs were more likely to be employed. Hasazi et al. (1985) found that students who had summer jobs were also likely to earn higher wages after high school. The direction of this finding was replicated in the Delaware study, but did not reach statistical significance.

In both Delaware and Vermont, utilization of employment related service agencies was extremely low. One-third of the Vermont sample had contacted the state employment agency, but less than 10% of the Delaware sample reported contacting any service agency at all. Of those Delaware students, those who contacted

Vocational Rehabilitation were more likely to report that their means for finding employment was "other" rather than self/family/friends. Eighty-one and one-half percent of employed Delaware handicapped youth found their jobs via this self/family/friends network, a finding similar to that of the Hasazi study and the non-handicapped student population (Delaware High School Follow-Up Studies). The percentages vary somewhat (but not significantly) across location: students from rural areas are more likely to utilize self/family/friends than those from a metropolitan area.

Hasazi suggests that the importance of the self/family/friends network in finding employment should be considered in designing curriculum for high school programs. This is indirectly supported by the Delaware data, which show that students from self-contained classrooms were more likely to use sources other than the self/family/friends network than students from resource room placement. This indicates that the more seriously handicapped students need to be instructed on effective use of this network or that the nature of their handicap requires agency assistance to find employment; both questions require further investigation.

The percentage of time employed since high school was a variable of utility in the Vermont study. It was significantly related to manner of exit, program placement, and summer jobs--all significant predictors of employment. This dependent variable was not as useful in the Delaware study, where no significant association between time employed since high school and control/work experience variables was found. Only the relationship between non-summer school jobs and time employed approached significance at $p=.013$. The difference in these findings again may be a difference in variance. The Vermont study had several years across which work experience could vary, whereas the Delaware students were all only one year out of school.

Implications of the Replication

Replication of the significant associations between handicapped youth employment and the factors of manner of school exit, gender, previous work experience and means of finding current employment is a worthwhile and encouraging outcome for the Delaware study. The presence or absence of these factors can confidently be considered predictors of employment for handicapped youth in both Delaware and Vermont.

Less encouraging is the fact that these factors probably apply as well to non-handicapped youth and say very little about the effect of either vocational or special education programs on employment. While there are some previously described differences in the data sets to be considered, for most analyses of the effects of program and vocational experience, no differences in relationship were located across employment conditions. The data collection and analyses which are described give only a little guidance to program planners.

The Delaware study anticipated this result and included requirements beyond the Vermont study which are more supportive for educational program planning. These findings are described in the section which follows.

PART II: The Delaware Extension of the Vermont Study

The Hasazi study has been received as a significant contribution to the information base explaining the post-school circumstances of mildly and moderately handicapped students. At the same time, reviewers (cf., Edgar, 1985; Bellamy, 1985) recommend new elements to be explored in future studies, expanding the "brief snapshot" Vermont provided of the many issues connected with employment for former special education students. Particularly recommended were more detailed examinations of severity of student disability, high school curriculum, method of exit, and their interrelationships with employment.

Data from other studies and the experiences of Delaware vocational educators suggest that other variables are also important to the circumstances of securing employment; hence, transportation factors and possession of a driver's license were added. In addition, more specificity in measurement was arranged for measures of special education program, vocational education experience, and employment indicators. Other added variables include identification of school type, handicapping condition, race, location of school, program choice, and credits earned by course area.

One major purpose of the Delaware study was to extend the descriptive information on characteristics of the mildly and moderately handicapped from the Vermont study as well as their personal and program variables. The second was to describe the relationship of these factors with their work status.

Demographic and control variable status on manner of exit, gender, program placement, work status, and means of finding current employment replicate the Vermont study and are included in the first section of this report and in Tables 12 and 13. Frequencies describing other characteristics of the student set are to be found in Tables 14 and 15. These show that the Delaware cohort was 44.8% white/52.0% black with an IQ range of 50 to 125; 64.8% of the students fell in the 70 to 89 portion of the IQ distribution. In terms of vocational preparation, 43.4% were concentrators and 47% were samplers; 61 (14.6%) were in some kind of continuing education program, of which 6% were designated "college." Composition of other characteristics will be reported in the next section, which addresses the relationships among the variables satisfying the specific Statement of Objectives of the proposal.

Formal Proposal Objectives and Findings

Objective 1: (Within exceptionalities, employment examined by educational program)

The first objective focused on whether or not programs for the handicapped were producing employable students. This objective contained three separate, yet related, questions. The first looked at the relationship between the categories of exceptionality, program placement, post-school employment, and continuing education status. Following procedures from the Vermont study, cross-tabulations were computed for these variables. Since categories of exceptionality and program placement seemed to reflect the students' level of functioning in similar ways, only two-way cross-tabulations were performed. Categories of exceptionality were defined as mentally retarded, learning disabled (LD), SEM, or physically impaired; the placements under consideration were resource room, self-contained, or other. Employment variables were conceptualized as current employment status (either employed or unemployed), current wages (if employed), and months employed since high school. Enrollment in continuing education was a categorical variable, that is, the subject was enrolled or not enrolled. The cross-tabulation of exceptionality by wages did not yield significant results at the .05 level using the chi square statistic (7.80, df=6, p=.6336), nor did the cross-tabulation of program placement by wages (4.53, df=4, p=.3393). Other cross-tabulations did produce significant results as noted in Tables 12 through 17. For example, program placement by current employment shows a significant relation but this should be discounted due to the disproportionate cell sizes. These data are displayed for their descriptive (rather than statistical) value.

The next sub-question within Objective 1 examined the relationship between categories of exceptionality, intensity of vocational and training experience, and job status. Intensity of vocational and training experience was defined in this study in two ways, in terms of vocational credit hours and the level of concentration in an occupational area. This question was treated in terms of two two-way cross-tabulations with significant results

when months employed since high school was considered. Current employment did not yield a significant chi square statistic when crossed with vocational credits (7.77, df=4, p=.1002), nor did wages (4.80, df=8, p=.7783). Similarly, current employment by vocational concentration (6.93, df=3, p=.0743) and wages by vocational concentration (10.57, df=6, p=.1025) did not prove significant. In this study, concentrator is defined as having accumulated four or more credits in a single occupational area; limited concentrator as having four or more credits in different areas; and, sampler as having 1/4 to 3-3/4 credits in vocational education. The significant results are displayed in Tables 18 and 19.

This same sub-question of Objective 1 was also computed in terms of three-way cross-tabulations, that is, each of the pairings referenced above was performed for each of the four exceptionalities under consideration. Only three crossings for the learning disabled group yielded significant results; however, it must be noted that this group was by far the largest in the sample and may be an uneven influence on the statistical test. The pattern of results for this group can be seen in the groups of the other exceptionalities, but these groups were very small in comparison with the learning disabled group. The chi square statistics and related results are summarized in Tables 20 and 21 for the non-significant findings; Tables 22, 23, and 24 display those results found for the learning disabled group; specifically interesting is vocational concentration by months employed since high school (p=.0136).

The last sub-question of Objective 1 referred to the relationship between categories of exceptionality, intensity of special education services, and job status. The relationship between exceptionalities and job status was investigated in the first sub-question of Objective 1. Intensity of special education services is here defined as the number of hours per week that the student received these services. Non-significant results were obtained when this variable was crossed with wages (5.92, df=6,

p=.2843), and with months employed since high school (8.69, df=12, p=.7293); however, the findings with regard to current employment status were significant and are displayed in Table 25.

Objective 2: (Method of exit and job status)

Objective 2 sought to investigate the relationship between method of exit and job status. When crossed with months employed since high school, method of exit produced non-significant results (5.03, df=4, p=.2843), whereas cross-tabulations of method of exit with current employment and wages did produce significant results. These findings are reported in Tables 26 and 27 and show that both current employment and wages are privileged by the presence of a high school diploma.

Objective 3: (Transportation and job status)

Objective 3 explored the relationship between transportation variables and job status. Transportation variables in this study were conceptualized in three ways: possession of a driver's license, method of transportation to work, and transportation problems (that is, if transportation would limit or has limited the subjects in taking a job). All transportation variables when crossed with employment variables yielded significant findings and the results are to be seen in Tables 28, 29, and 30.

Objective 4: (Course-taking patterns and job status)

The final objective sought to describe the course-taking patterns exhibited by mildly and moderately handicapped students and the impact on job status. In answering this question, job status is defined as in the other objectives (that is, current employment status, wages, and months employed since high school). Course credits from the students' transcripts were divided into the following five areas: arts, humanities, math, science, and vocational education. Although computer credits were noted, so few students took these courses that meaningful cross-tabulations were virtually impossible due to extremely small (and often zero) cell

sizes. In all subject areas, no significant results at the .05 level were obtained. Summary results of the cross-tabulations are depicted in Tables 31 and 32.

Summary

The effects of exceptionality are dominated by the learning disabled category. This category is significantly positively related to months employed since high school, continuing education, and, of course, program placement.

Within exceptionalities, no relationship appears between vocational credits, employment status, and wages. These statistical tests used $p \leq .01$ because more than 20% of the cells had expected values below five. But tentative associations at $p \leq .05$ are displayed for heuristic purposes although the statistical tests are weak. Both number of vocational credits and vocational concentration show a statistically tentative ($p < .04$) relationship with months employed, but not with current employment for learning disabled. Although there is not a clear-cut indicator of the differences between concentrators and samplers, there is some suggestion that concentrators have been employed longer.

Current employment is significantly associated with special education service intensity and favors the intermediate categories, perhaps once again the influence of the large number of learning disabled students overpowers the analysis.

In addition to these tentative findings, the preceding analyses showed some very strong patterns: holding a diploma is related to current employment and wages; all transportation variables are highly associated with current employment, months employed since high school, and wages; and, no academic course-taking patterns are related to employment for either the mildly or moderately handicapped.

PART III: Reconciliation of the Findings from Parts I and II

In addition to the first section of this report (which presents the Delaware replication of the Vermont study) and the second section (which addresses the specific questions of the Delaware study), data from the study will now be reported as clusters of variables which may suggest patterns of effect for a particular concept (e.g., method of exit). These concepts are referred to as "factors of interest." Some findings will have been mentioned previously and some are obvious; however, this redundancy may be an advantage for clarity when so many variables are being considered.

Factors of Interest

Manner of Exit

In this study, all students exited either by diploma or certificate--no students had dropped out or exited by exceeding the age limit. In Delaware, diploma students have achieved the Basic Skills Requirements as well as the required number of credits. Manner of exit is related to skill level of current job--those holding skilled jobs have diplomas rather than certificates. The division of diplomas and certificates across semi-skilled and unskilled students is similar (Table 33).

Current employment status also favors those students with a diploma (Table 34). Wages (Table 27) show an association with manner of exit--twice as many certificate students than diploma students earn less than minimum wage.

Intensity of Special Education

Special education influence can be discussed in terms of service level (mildly or moderately handicapped) and intensity (which is coded by hours of contact). Service level and intensity are directly related--Levels I and II have the fewest hours and Levels III and IV have the most. Level of handicap and intensity of special education service have similar patterns when crossed with achieving minimum competency. That is, Levels I and II and

low hours of special education service are likely to be related to students' passing minimum competencies. Service level examined by mainstreaming hours per week shows that the more severely handicapped students were mainstreamed for fewer hours than the less severely handicapped, as one would expect.

Service intensity is related to employment according to the p=.0202 chi square; however, this finding should be read with caution due to the uneven distribution of services to students from minimal special services (6 employed, 1 unemployed) to those with 20 to 32.5 hours (33 unemployed, 56 employed).

IQ is related to service level (which is related to intensity) with the majority of IQs below 90 falling in Level III. Level III and lower contain the predominance of non-passers of minimum competencies; for example, 67.6% of Level V did not pass the minimum competencies. Success with minimum competencies is related to IQ with a reasonable likelihood of passing competencies beginning at an IQ of about 70. Minimum competencies are related to driver's license. Mid-range IQ students have the lower levels of employment.

The severity of the handicap seems to be reflected in the relationship between current employment and exceptionality (and program placement), where the physically impaired show distinctly atypical patterns compared to the other disabilities (Tables 12 and 13).

There was no pattern of concern within the unemployed seeking jobs and unemployed not seeking jobs over the possibility of losing their benefits if they were to become employed.

Vocational Education Credits

Vocational education credits and vocational education concentration measure two different aspects of vocational training, they correlate at r=.41. The association between these measures is found to be statistically significant and the distributions suggest that the mid-range of 8 to 12 credits was the typical experience of employed students (Tables 18 and 19). There is no differentiation within the disabilities between vocational credits and current

employment and wages (Table 20). Vocational preparation is significantly correlated with both current employment and months employed since high school (Table 35). The percentage of employment increases slightly (not statistically significant) with increased occupational concentration (Table 36). Level of vocational preparation was neither associated with current employment skill class nor with wages (Table 23).

Satisfaction with high school program was not aligned with vocational preparation or school type.

Current Job

Students overwhelmingly attribute their source of help in finding a job to self/family/friends. This is similar to a statewide study of all public high school graduates. Ninety-one point six percent of those who found a job in less than a day reflected this belief. Only when the search took a month or longer was other help recognized (Table 37). There is not a statistical relationship between having a school job and time to find current job (Table 38). The effect of having a high school job by skill class of current job and time to find a job indicates an advantage in time to find current job by skill class when students had a school job. The relationship of skill class and time to find current job did not appear for those not having a school job (Table 39). The skill class of current job is not related to holding a school job (Table 40), nor is the skill class of current job related to manner of exit (Table 33).

Driver's License/Transportation

Holding a driver's license has the strongest correlation with current employment of any variable tested ($r=.2844$, $p < .0001$). Holding a driver's license is strongly associated with completing a driver's education program, race, gender, and months employed since high school. However, holding a driver's license is not related to primary disability. Table 41 demonstrates that months employed since high school by driver's license, controlled by race, shows significance for non-whites and no relationship for whites.

Holding a driver's license, crossed by occupational classification, suggests no difference by categories (the analysis is weakened by imbalance in the cells).

The significant association which exists between employment and would/could drive to work and between employment/transportation problems and wages is exhibited in Tables 28 and 29.

Course-Taking Patterns

Course-taking patterns of these students were examined in two ways. The first examined the consistency of the number of discipline area credits by current employment, wages, and months employed since high school separately for mildly and moderately handicapped. No discipline area was found to be significantly related to the outcome variables, although it may be worth noting that crossing vocational education by months employed since high school approached significance (p=.0629) for moderately handicapped students (Tables 31 and 32). The second compared the average credits for this handicapped group with the averages of general program students reported in the High School and Beyond study. The Delaware sample differs from the national set in numbers of vocational education credits (Delaware 7.04/nation 4.4) and humanities credits (Delaware 7.94/nation 5.9) (Tables 42 and 43).

Vocational and Comprehensive High Schools

This section of the report examines whether there are differences between students who attended a full-time vocational high school and those who attended comprehensive high schools. Students who attended special schools were not included in this analysis. In terms of generalizing findings to all students, it is important to see if there are differences between these groups. Furthermore, since the focus of the study was to determine factors associated with post-high school employment, it was thought that the type of school attended might be an influence. In these analyses, 68 students were reported as attending full-time vocational high schools and 316 as attending comprehensive high

schools. The following description focuses on selected demographic variables, school/program variables, and employment outcomes. (Tables 44 and 45 show significant statistical comparisons.)

Gender, race, IQ, and disability were selected as variables to explore since these were important in both the original Vermont study and the Delaware replication. Town of residence and location of school attended were also chosen since it was felt that any such differences could prove important in terms of establishing differences between the two groups or in employment outcomes.

Figure 1
Comparison Values of Vocational vs.
Comprehensive High Schools

	Full-Time Vocational High Schools	Comprehensive High Schools
N	316	68
Male	73.5%	63.6%
Female	26.5%	36.4%
White	23.3%	60.3%
Non-Whites	13.0%	39.7%
IQ Mean, SD	83.9, 14.1	79.8, 10.6
EMR	23.5%	23.4%
LD	64.7%	54.4%
SEM	10.3%	19.6%
Urban	75.0%	35.5%
Rural	1.59%	23.2%
Metropolitan	23.5%	41.6%
Mainstreamed hours	16.4%	16.3%
Hours of Sp.Ed. Serv.	13.4%	13.3%
Resource Room	14.9%	85.1%
Self Contained	44.4%	55.6%
Mildly Handicapped	76.5%	86.4%
Moderately Handicapped	23.5%	13.6%
Diploma	82.4%	88.0%
Minimum Competence	80.9%	87.6%

It is to be expected that there would be differences between the groups with regard to level of vocational school education preparation and, indeed, there are. No vocational schools students were limited concentrators or (obviously) non-participants, whereas 10.8% and 1.3% of the comprehensive students fell into these respective groups. Eighty-two point one percent of the vocational school students were classified as concentrators, compared to 36.4% of the comprehensive school students. Finally, 51.6% of the comprehensive school students were classified as samplers, compared to 17.9% of the vocational school students.

Although they were not really striking or surprising, there were also differences with regard to credits earned. Comprehensive school students earned more arts and humanities credits (2.7 and 8.1) than did vocational school students (2.1 and 7.4), whereas vocational school students earned more math and science credits (3.3 and 1.6) than the comprehensive school students (2.6 and 1.5). As was to be expected, vocational school students earned more credits in vocational education (12.2) than did comprehensive school students (6.1). It is interesting that if a student in a comprehensive high school accumulates six credits in one occupational area, s/he can be classified as a vocational concentrator.

The two groups were examined for differences or similarities in current employment status, length of time of longest job, months employed since high school, and the length of time in current job. Current employment status was quite similar for both groups in that 79.3% of the vocational school students and 77.3% of the comprehensive school students were employed. As for the longest time of employment in one job, comprehensive school students averaged 4.8 months while vocational school students averaged 4.6. Conversely, vocational school students had been employed (total months since high school), on the average, somewhat longer than comprehensive school students (8.2 vs. 7.7, respectively). As one would expect, vocational school students had held their current jobs longer than comprehensive school students. Of the vocational students, 26.1% had held their current job for 12 months or longer,

whereas 21.8% of the comprehensive students had done so. Similarly, 32.6% of the vocational students had held their current jobs for eight to 11-1/2 months, compared to 28.4% of the comprehensive students.

Transitional Efforts

Assistance is provided to handicapped students in order to make their transition from the school environment to the work environment easier and more successful. In this study, of the 415 handicapped students who graduated in June 1985, 258 did not receive transitional services and 123 did (34 students had incomplete records and so are considered to be "missing cases" for this section of the report). Transitional means that one the students transcripts there was an indication that the student had been included in some school-to-work activities such as co-op, work study or vocational assessment. The majority of the students identified as having been provided transitional services attended schools in Kent and Sussex Counties (71%) with the remaining 29% in New Castle County comprehensive high schools (14%), special schools (14%), and vocational high schools (1%).

Because there might be differences between those students served and those not served which would contribute to employment outcome variables, it was thought that the transition association should be investigated. Also, since all students were not in this category, it was deemed appropriate to attempt to establish if the two sub-groups were similar except for the receipt of services or if they represented two distinct groups. Differences in the two would, then, have implications on the interpretation of the study findings. This section is a narrative description that compares the two groups with regard to selected demographic characteristics, school/program variables, and employment variables. Students coded as having been provided some transitional services will be referred to as "transitional students" and those not will be referred to as "non-transitional students."

Gender, race, IQ, and disability were selected as demographic variables on which to compare the two groups since they were important in both the Delaware and Vermont studies. Furthermore, location of school and town of residence were chosen as well in order to adequately describe the two groups and because they have been thought to be variables which contribute to employment opportunities.

In terms of gender, the proportions were very similar in the two groups. Males comprised 66.1% of the non-transitional group and 67.5% of the transitional group, whereas females comprised 37.2% of the non-transitional group and 32.5% of the transitional group. Although there were more males in both groups, the proportions of males and females between the two were quite similar. Race presents similar findings, as well, with whites accounting for 46.5% and 47.2% in the non-transitional and transitional groups, respectively, and non-whites representing 53.5% and 52.8%, respectively. There were also no differences in terms of IQ; moreover, the p-value for a cross-tabulation of IQ and transitional effort membership was almost 1.0 (.9970) and the means were almost identical (81.3 for non-transitional and 87.1 for transitional). Furthermore, the standard deviation for these two groups was also extremely similar--11.83 and 11.78, respectively.

There were some differences in the disabilities exhibited by the two groups in that there were 8.6% more learning disabled students represented in the non-transitional group (57.4% were classified as learning disabled in this group as compared to 48.8% in the transitional group) and 7.1% more physically impaired students in the transitional group (10.6% of the total 123 vs. 3.5% of the total 258 non-transitional students). Other disabilities were present in quite similar proportions between the transitional and non-transitional groups (23.6% vs. 20.2% of mentally retarded, 19.0% vs. 17.1% of SEM).

The variables that students differed on most notably were location of school and residence. Thirty-five point eight percent of the transitional students attended schools in rural locations while only 11.3% of the non-transitional students did. Similarly,

17.0% of the transitional students reported living in a metropolitan area while only 7.5% of the non-transitional lived in such an area. Seventy-nine point two percent of the non-transitional students lived in urban areas, compared to 56.3% of the transitional group.

School type, program placement, manner of exit, completion of a driver's education program, and level of vocational preparation were selected as school variables to explore since they were important in the Delaware study - as were the number of credits in arts, humanities, math, science, vocational education, and computer science.

Students did differ in terms of school type, most markedly in special schools (one student of the non-transitional group and 15 for the transitional) and full-time vocational high schools (58 students of the non-transitional group and only one of the transitional). Eleven or 4.3% of the non-transitional students attended ILCs (intensive learning centers), as compared to 3 or 2.4% of the transitional students. Finally, 188 or 72.9% of the non-transitional students and 104 or 84.6% of the transitional attended comprehensive high schools. In terms of program placement, 88.0% of the non-transitional students and 74.0% of the transitional students were placed in resource rooms. Transitional students were represented more heavily in self-contained classrooms than were non-transitional, however (15 or 12.2% vs. 19 or 7.4%).

Manner of exit from high school presented no differences between the transitional and non-transitional groups, as can be seen from the proportions for diploma (85.7% vs. 83.7%, respectively) and certificate (14.3% vs. 16.3%). Proportionally more transitional than non-transitional students completed a driver's education course (61.5% vs. 50.0%). From the classification of this preparation, it appears that non-transitional students concentrated more heavily in vocational education. Forty-seven point nine percent of the non-transitional students were classified as vocational concentrators and 8.9% as limited concentrators, compared with 38.2% and 4.1% (respectively) of the transitional students.

Credits earned by the two groups did differ somewhat with the transitional students accumulating more credits except in vocational education and computer science. The differences are relatively small in the arts (2.9 for transitional students and 2.5 for non-transitional students), science (1.9 vs. 1.5), and math (3.1 vs. 2.7). The largest difference is in the humanities (9.2 vs. 7.9). Non-transitional students earned more credits than did transitional students in vocational education (7.4 vs. 6.6) and in computer science (.11 vs. .05).

The employment outcomes of interest were current employment status, months in current job, longest job in months, and months employed since high school. It is of interest to ascertain the students' current employment status but the other variables were also selected because they better describe the employment history of the student since departure from high school. Proportionally more transitional students were employed (83.0%) than were non-transitional students (71.5%), although the latter had, on the average, held their jobs for a somewhat longer time (7.02 months vs. 6.63 months). Similarly, the transitional students also had more months of employment since high school than did the non-transitional students (8.18 vs. 7.36) (Tables 46 and 47).

In short, there is a detectable tendency for more seriously handicapped to be connected with transitional assistance and for students who have been provided transitional services to live in rural locations, to have completed driver's education, and to have accumulated more academic credits. Vocational concentrators tended not to be "transitional." Transitional students show an advantage in both current employment and months employed since high school.

Race

Race of the participating students appeared as a variable of interest due to the number and intensity of its association with employment and those variables that interact with race and employment variables (Table 48). Race is identifiable by school type: 87% of ILC students were non-white, 60% of white mildly and moderately handicapped were full-time vocational school students.

The non-white student tends to be a vocational education sampler. A larger proportion of whites than non-whites have driver's licenses and a statistically significant proportion of non-whites compared to whites report transportation difficulties for getting to work. Table 41 illustrates the relationship between race, employment, and having a driver's license.

Currently employed non-whites in this data set were likely to be employed eight months or less, whites eight months or more. Thirty percent of whites and 69% of non-whites were unemployed. Of the employed, twice the number of non-whites as whites were employed in the service area and, conversely, three times as many whites as non-whites were employed in structural occupations. There were no differences by race for those employed in the agricultural or clerical areas.

Race is associated with IQ but not special education intensity, mainstreaming, minimum competency attainment, or method of exit. Although generally the patterns of course-taking do not differ across the arts, sciences, and humanities, non-white students show a marginally significant pattern of more mathematics credits than white mildly and moderately handicapped students.

CONCLUSIONS

Summary

This study has reaffirmed the dependability of the relationship between certain factors and the job status of mildly and moderately handicapped youth. Specifically, employment is more likely when the individual is white and male, holds a driver's license and a high school diploma, and had a job during high school. (Having a high school job is also favorably related to the skill class of the current job and a shortened time to find a job.)

Reflected against the working questions outlined in the purpose statement on page 3, the data from this study show:

- The special education/vocational programs for the handicapped <u>are</u> producing employable students. Sixty-seven percent of the students were employed full- or part-time in

the state. (During this time, the employment rate for all youth aged 16 to 19 was 80.1%.) However, few students reported earning more than minimum wage.

- o Method of exit is strongly related to employment, favoring those with diplomas.
- o Transportation is a powerful factor influencing employment.
- o Unanticipated findings include a powerful influence on employment according to race and an extremely weak influence on employment by transition contacts.
- o The intensity of secondary vocational and training experience is not related to job status. There is tentative evidence that concentrators are better off than limited concentrators, yet this does not hold up when comparing concentrators versus samplers.
- o Program placement i.e., resource room, self contained, special school does not show a relationship to post-school employment and continuing education status; this is confounded with exceptionality.
- o The course-taking patterns of these students varied from the course-taking patterns of a national norm group of general academic students only in that Delaware students received more vocational credits.
- o The intensity of special education services does not appear to be related to employment.
- o The programs that mildly and moderately handicapped students elect do not differ significantly from vocational to comprehensive high schools.

Implications

Mildly and moderately handicapped youth are subject to the same fundamental employment transition problems as the average high school graduate, yet those problems are further heightened by their exceptionality. The influence of the exceptionality is not a

constant, however. There are differing patterns of employment within exceptionalities, suggesting that this deficit can be overridden.

It appears to be an advantage to hold a job in high school, possibly for the contacts made and work attitudes demonstrated as well as experience gained. Skill class of current job is related to holding a job in high school.

There appears to be no consistent advantage gained in job status from attending a vocational school rather than a comprehensive high school. While students in vocational schools were more likely to be white males with slightly higher IQs and less severe handicaps, these advantages did not enhance their employment in general over that of students from comprehensive high schools.

The data from physically impaired students should be examined separately because it is out of balance in terms of numbers and patterns. For example, data from the school for the hearing impaired may have an inflating effect on course-taking patterns in the humanities when combined with measures from other mildly and moderately handicapped students.

Course-taking patterns at this level of handicap are not related to employment status. The evidence suggests that these patterns are not different from other high school students. Even for students attending vocational high schools, course-taking patterns are not related, overall, to job status.

The influence of location highlights the importance of the existence of jobs on the employment of the handicapped. Rural youth have the highest employment rate, possibly because jobs are available to them in both the service and agricultural areas.

Transitional assistance was not present for two-thirds of the students and was clearly not a strong influence even when it was denoted on the transcript record. Students did not acknowledge these contacts as helpful in obtaining a job and transition contacts were not related to job status.

Recommendations

Administrators and counselors involved in preparing mildly and moderately handicapped youth should study the results of this survey and determine the meaning of the factor values to themselves based on their experience and then examine the programs in their school.

Programs to increase the number of graduates through attention to competencies are already in place. These programs as well as diverse training programs can be strongly supported due to their consistent influence on job status.

Counselors should recognize the importance of high school job experience and encourage all students obtain it, but should also arrange to give women and blacks particularly close guidance in this area.

Job preparation should be planned around the employment opportunities and transportation support near the school location. Contacts can be developed before the students leave school.

Teachers and counselors can be trained to demonstrate knowledge of social service and other agency programs to affect a successful transition to work, and demonstrate knowledge of career guidance placement options for mildly and moderately handicapped youth.

Each institution should study the program (impact and needs) of the transitional processes provided in that school.

Vocational schools in particular should examine their program provision for transiting the mildly and moderately handicapped students.

The effectiveness of transitional programs put in place after 1984 should be examined after removing the influence of method of exit, driver's license, race, and gender. Data from the 1985 study can be used as a baseline for detecting relative changes in employment patterns.

The telephone portion of this survey (using a modified instrument to permit more open-ended responses) should be conducted on a sample of 1986 students stratified by race, gender, location,

and exceptionality. The focus of this survey should be on probing more deeply into high school job experience/training as well as current job and how it was obtained.

There should be drivers training for all mild and moderately handicapped students.

Selection procedures for vocational education should be studied, who is involved and how involved are they.

There needs to be an examination of special education adoption of vocational education courses.

Dissemination

This information, in original or abstract form, should be shared with all educators in the state who deal with the mildly and moderately handicapped student. Their reactions should be accumulated to supplement the discussion section. An abbreviated version of the study should be published as back-up for the Hasazi et al. study.

References

Bellamy, G.T. Transition progress: Comments on Hasazi, Gordon, and Roe. Exceptional Children, 1985, 51, 474-477.

Edgar, E. How do special education students fare after they leave school? A response to Hasazi, Gordon, and Roe. Exceptional Children, 1985, 51, 470-473.

Hasazi, S.B., Gordon, L.R., and Roe, C.A. Factors associated with the employment status of handicapped youth exiting high school from 1979 to 1983. Exceptional Children, 1985, 51 (6), 455-469.

Horn, W.F., O'Donnel, J.P., and Vitulano, L.A., Long-time follow-up studies of learning-disabled persons. Journal of Learning Disabilities, 1983, 16(9), 542-555.

National Center for Education Statistics. An Analysis of Course-Taking Patterns in Secondary Schools as Related to Student Characteristics. Washington, D.C. 1985.

Phelps, L.A., Special needs students: redefining the challenge. Journal of the American Vocational Association, 1985, April, 24-26.

U.S. Bureau of the Census. Labor Force Status and Other Characteristics of Persons with a Work Disability. Washington, D.C. 1982.

U.S. Commission on Civil Rights. Accommodating the Spectrum of Individual Abilities. Washington, D.C.: U.S. Commission on Civil Rights, 1983.

U.S. Office of Special Education and Rehabilitative Service, Seventh Annual Report to Congress on the Implementation of the Education of the Handicapped. U.S. Department of Education, Office of Special Education and Rehabilitative Services, Washington, D.C. 1985.

Will, M., Bridges from school to working life. Programs for the Handicapped. Office of Special Education and Rehabilitative Services, Office of Information and Resources for the Handicapped. Washington, D.C. 1984 (b).

Will, M. Let us pause and reflect . . . but not too long. Exceptional Children, 1985 (a), Vol. 51, 11-16.

TABLE 1

Distributions of Selected Variables

Variable	Delaware		Vermont	
	Frequency	Percent	Frequency	Percent
Manner of exit from high school	N = 415		N = 459	
Diploma	352	85%	271	59%
Certificate	63	15%		
Program Placement	N = 415		N = 451	
Resource Room	348	84%	296	66%
Self-Contained	37	9%	129	29%
Other	30	7%	26	5%
Gender	N = 415		N = 462	
Male	267	64%	292	63%
Female	148	36%	170	37%

TABLE :

Current Status of Former Students and Jot
Characteristics of Those with Paid Employment

Variable	Delaware		Vermont	
	Frequency	Percent	Frequency	Percent
What is student currently doing?	N = 415		N = 301	
Full-time employment	194	47%	166	55%
Part-time employment	82	20%	55	18%
Unemployed, seeking employment	66	16%	72	24%
Unemployed, not seeking employment	26	6%	17	6%
Missing	47	11%		
How did student find job?	N = 278		N = 166	
By him/herself	146	53%	91	55%
Family	49	18%	30	18%
Teacher	4	1%	9	5%
School counsellor	18	7%	1	<1%
Friend	28	10%	16	10%
Job Service	1	<1%	3	2%
Vocational Rehabilitation	5	2%	3	2%
Other	27	10%	5	4%
Missing	47			
Not Currently Employed	90			

Table 3

Current Employment Related to Location of School Attended, Gender, and High School Program

Variable	Currently Employed			Currently Employed		
	Delaware			Vermont		
	Percent Employed		Total N	Percent Employed		Total N
Location (p=.0001)			367			301
Rural	90.1	of	71	44.3	of	79
Urban	78.8	of	146	63.5	of	148
Metropolitan	64.0	of	150	47.3	of	74
Gender (p=.0004)			368			301
Male	80.9	of	236	65.7	of	198
Female	64.4	of	132	33.0	of	103
High School Program (p=.0006)			368			292
Resource Room	77.9	of	307	61.5	of	187
Self-Contained	73.5	of	34	35.6	of	87
Other	44.4	of	27	77.8	of	18

Table 4

Current Employment Related to Manner of Exit from High School, Vocational Education, and Work in High School

iable	Currently Employed — Delaware			Currently Employed — Vermont		
	Percent Employed		Total N	Percent Employed		Total N
nner of Exit (p=.0158)			368			301
Diploma	77.5	of	311	59.8	of	199
Certificate	61.4	of	57	61.4	of	57
cational Education (p=.2992)			368			293
Yes	77.2	of	215	60.5	of	177
No	71.9	of	153	44.8	of	116
k Experience in High School (p=.0109)			368			300
Yes	78.8	of	255	46.9	of	81
No	66.4	of	113	57.5	of	219
ool Non-summer Job (p=.0002)			366			299
Yes, subsidized	76.5	of	51	70.1	of	144
Yes, unsubsidized	85.6	of	146			
No	65.7	of	169	40.6	of	155
Summer Job (p=.0266)			366			299
Yes, subsidized	63.8	of	47	46.4	of	28
Yes, unsubsidized	82.6	of	121	68.8	of	157
No	73.2	of	198	36.8	of	114

Table 5

Utilization of Job-Related Service Agencies

Variable	Delaware		Vermont	
	Number Responding	Percent	Number Responding	Percent
Worked with Vocational Rehabilitation to Find a Job?	359		299	
Yes, during high school	11	3%	2	1%
Yes, after high school	11	3%	32	10%
No	337	94%	265	89%
Worked with Transitional Project to Find a Job?	365		298	
Yes, during high school	1	1%		
Yes, after high school	0	0%	11	4%
No	364	99%	287	96%
Worked with Jobs for Delaware Graduates to Find a Job?	361		299	
Yes, during high school	13	3%	13	5%
Yes, after high school	1	1%	91	30%
No	347	96%	347	65%

TABLE 6

Means of Finding Current Employment
Related to Agency Contact

Agency Contacted	Total N		Means of Finding Current Employment			
			Self/Family/ Friend		Other	
	DE.	VT.	DE.	VT.	DE.	VT.
Vocational Rehabilitation (DE.,p=.0193)	274	162				
No	259	151	81.5%	87.4%	18.5%	12.6%
Yes, in High School	8	1	62.5%	100.0%	37.5%	00.0%
Yes, after High School	7	10	42.9%	30.0%	57.1%	70.0%
Transitional Project (DE.,p=1.0)	275	MHC/SRS 161				
No	274	157	79.9%	86.0%	20.1%	14.0%
Yes, in High School	1	0	100.0%	00.0%	00.0%	00.0%
Yes, after High School	0	4	00.0%	00.0%	00.0%	100.0%
Jobs for Delaware Graduates (DE.,p=.0215)	272	162				
No	262	112	81.3%	86.6%	18.7%	13.4%
Yes, in High School	9	7	55.6%	71.4%	44.4%	28.6%
Yes, after High School	1	43	00.0%	79.1%	100.0%	20.9%

TABLE 7

Means of Finding Current Employment Related to
Location of School Attended, Gender, and High School Program

Variable	Total N		Means of Finding Current Employment			
			Self/Family/ Friend		Other	
	DE.	VT.	DE.	VT.	DE.	VT.
Location (DE.,p=.1566)	277	164				
Rural	64	35	85.9%	94.3%	14.1%	5.7%
Urban	116	94	81.9%	85.1%	18.1%	14.9%
Metropoiitan	97	35	74.2%	68.6%	25.8%	31.4%
Gender (DE.,p=.3806)	278	164				
Male	193	130	81.9%	83.1%	18.1%	16.9%
Female	85	34	76.5%	85.3%	23.6%	14.7%
Program (DE.,p=.0098)	266	146				
Resource Room	241	115	83.4%	85.2%	16.6%	14.8%
Self-Contained	25	31	60.0%	74.2%	40.0%	25.8%

TABLE 8

Wage of Current Job Related to
Manner of Exit from High School, Program,
Vocational Education, and Work in High School

Variable	Total N		Wage of Current Job					
			<$3.35		$3.35-$5.00		>$5.00	
	DE.	VT.	DE.	VT.	DE.	VT.	DE.	VT.
Manner of Exit (DE.,p=.0018)	218							
Diploma	194		7.7%		62.5%		26.8%	
Certificate	24		29.2%		62.5%		8.3%	
Vocational Classes (DE.,p=.3322)	218	105						
No	83	35	12.0%	11.4%	59.0%	40.0%	28.9%	28.6%
Yes	135	70	8.9%	8.6%	68.9%	48.6%	22.2%	22.9%
Work Experience in High School (DE.,p=.8433)	218	105						
No	58	80	12.1%	10.0%	63.8%	42.5%	24.1%	27.5%
Yes	160	25	9.4%	8.0%	65.8%	56.0%	25.0%	16.0%
School Non-Summer Job (DE.,p=.1317)	217	105						
No	90	38	11.1%	15.8%	66.7%	52.8%	22.2%	15.8%
Yes, Subsidized	32		18.8%		62.5%		18.8%	
Yes, Unsubsidized	95	67	6.3%	6.0%	65.3%	41.8%	28.4%	29.9%
School Summer Job (DE.,p=.3155)	217	104						
No	107	36	11.2%	22.2%	63.6%	44.4%	25.2%	13.9%
Yes, Subsidized	24		00.0%		83.3%		16.7%	
Yes, Unsubsidized	86	68	11.6%	2.9%	62.8%	45.6%	25.6%	30.9%

TABLE 9

Location of School District Attended Related to
Dictionary of Occupational Titles
Classification of Current Employment

DOT Classification of Current Employment	Percent of subject employed by geographical location of school district (DE.,p=.0008)					
	Rural		Urban		Metropolitan	
	DE.	VT.	DE.	VT.	DE.	VT.
TOTAL N	(60)	(34)	(114)	(95)	(95)	(35)
Clerical, Sales	13.3%	14.7%	20.2%	9.5%	34.7%	31.4%
Services Occupations	30.0%	17.6%	36.8%	34.7%	38.8%	42.9%
Agriculture, Food Technology	31.7%	35.3%	11.4%	15.8%	6.3%	
Machine Trades	3.3%	5.9%	5.3%	9.5%	2.1%	5.7%
Benchwork Occupations	3.3%	5.9%	1.8%	5.3%	4.2%	
Structural Occupations	18.3%	8.8%	23.7%	17.9%	13.7%	8.6%
Miscellaneous	00.0%	5.9%	0.9%	5.3%	2.1%	8.6%

TABLE 11-A

Analysis of Variance of Time Employed Since High School by Control and Work Experience Variables Delaware Study

Predictor Variable	Mean Months Employed by Variable Level	F	(df)	p-value
Location		2.415	(2)	.091
Rural	8.72			
Urban	7.88			
Metropolitan	7.14			
Gender		4.383	(1)	.037
Male	8.25			
Female	6.97			
Program Placement		0.764	(1)	.383
Resource Room	7.84			
Seif-Contained	7.48			
Manner of Exit from High School		0.609	(1)	.436
Diploma	7.95			
Certificate	6.85			
Vocational Education		0.888	(1)	.347
Yes	8.16			
No	7.27			
High School Job		2.196	(1)	.139
Yes	8.28			
No	6.73			
School Non-summer Job		4.419	(2)	.013
No	6.81			
Yes, Subsidized	8.37			
Yes, Unsubsidized	8.73			
School Summer Job		2.545	(2)	.080
No	7.09			
Yes, Subsidized	8.41			
Yes, Unsubsidized	8.70			

TABLE 11-B

Analysis of Variance of Time Employed Since High School by Control and Work Experience Variables Vermont Study

Predictor Variable	Mean Percent Time Employed Since High School by Variable Level	F	(df)	p-value
Location		1.198	(2,281)	.303
Rural	43.9%			
Urban	52.0%			
Metropolitan	49.4%			
Gender		33.832	(1,282)	.001
Male	58.0%			
Female	32.4%			
High School Program		16.175	(1,257)	.001
Resource Room	54.6%			
Special Class	35.3%			
Manner of Exit from High School		4.606	(2,281,	.011
Graduated	52.1%			
Left (18 & over)	30.2%			
Dropped (under 18)	49.1%			
Vocational Education		1.311	(1,275)	.253
No	45 9%			
Yes	51.1%			
Work Experience Program		0.800	(1,282)	.372
No	50.2%			
Yes	45.8%			
Part-time Job During High School		56.375	(1,280)	.001
No	34.3%			
Yes	64.6%			
Summer Job During During High School		54.645	(1,280)	.001
None or subsidized	33.7%			
Nonsubsidized	63.3%			

TABLE 12

Exceptionality by Current Employment and Continuing Education Status

	Employment Status		Continuing Education Status	
	Unemployed	Employed	Not Enrolled	Enrolled
Mentally Retarded	26	55	73	7
LD	39	102	163	33
SEM	15	49	51	13
Physically Impaired	12	10	14	8
	Chi square=15.83, df=3 p=.0012, N=368		Chi square=10.27, df=3 p=.0164, N=362	

TABLE 13

Program Placement by Current Employment and Continuing Education Status

	Employment Status		Continuing Education Status	
	Unemployed	Employed	Not Enrolled	Enrolled
Resource Room	68	239	249	53
Self-Contained	9	25	32	1
Other	15	12	20	7
	Chi square=14.81, df=2 p= .0006, N=368		Chi square=6.19, df=2 p= .0453, N=362	

TABLE 14

Distributions of Selected Demographic Variables

Variable	Frequency
Race (N=415)	
American Indian	3
Black	216
Asian	2
Hispanic	8
White	186
IQ (N=415)	
50-59	12
60-69	41
70-79	141
80-89	128
90-99	57
100-109	22
110-125	7
Missing	7
Concentration Level of Vocational Preparation (N=415)	
Concentrator	180
Limited Concentrator	35
Sampler	195
Non-participant	4
Missing	1

TABLE 15

Continuing Education Status of Former Students

School or Training Program Program (N=415)	Frequency
College Full-Time	20
College Part-Time	5
Other Training Program	17
Unspecified or Other	19
Not Currently Attending	301
Missing	53

TABLE 16

Exceptionality by Months Employed
Since High School

Exceptionality	None	.12 to 3.75 mos.	4.0 to 7.75 mos.	8.0 to 11.5 mos.	12 mos. or longer
Mentally Retarded	11	18	14	12	15
LD	16	21	32	72	54
SEM	5	11	9	26	13
Physically Impaired	6	3	3	5	2

Chi square=22.38, df=12

p=.0336, N=358

TABLE 17

Program Placement by Months Employed Since High School

Program Placement	None	.12 to 3.75 Mos.	4.0 to 7.75 Mos.	8.0 to 11.5 Mos.	12 Mos. or Longer
Resource Room	28	40	48	110	74
Self-Contained	3	7	6	8	9
Other	7	6	4	7	1

Chi square=16.63, df=8

p=.0342, N=358

TABLE 18

Vocational Credits by Months
Employed Since High School

Vocational Credits	None	.12 to 3.75 Mos.	4.0 to 7.75 Mos.	8.0 to 11.5 Mos.	12 Mos. or Longer
None	2	1	1	0	0
.50 - 4.0 Credits	12	14	20	29	17
4.25- 8.0 Credits	14	19	16	30	32
8.25- 12.0 Credits	8	9	15	47	22
12.25- 17.0 Credits	1	6	5	17	10

Chi square=27.16, df=16

p=.0397, N=347

TABLE 19

Vocational Concentration by Months Employed Since High School

Concentration Level	None	.12 to 3.75 mos.	4.0 to 7.75 mos.	8.0 to 11.5 mos.	12 mos. or longer
Concentrator	12	15	26	67	44
Limited Concentrator	4	6	6	6	6
Sampler	20	30	25	52	34
Nonparticipant	2	1	1	0	0

Chi square=22.38, df=12

p=.0335, N=357

TABLE 20

Vocational Credits by Employment Status: Non-significant Results

Cross-tabulations	Chi square	df	p value
MENTALLY RETARDED			
Credits by Current Employment	4.18	4	.3826
Credits by Wages	1.68	6	.9463
Credits by Months Employed Since High School	16.12	16	.4513
LEARNING DISABLED			
Credits by Current Employment	6.78	4	.1484
Credits by Wages	2.16	6	.9045
SEM			
Credits by Current Employment	1.12	4	.8911
Credits by Wages	11.62	8	.1688
Credits by Months Employed Since High School	13.04	16	.6698
PHYSICALLY IMPAIRED			
Credits by Current Employment	3.79	3	.2848
Credits by Wages	1.88	2	.3918
Credits by Months Employed Since High School	16.97	12	.1506

TABLE 21

Vocational Concentration by Employment Status: Non-significant Results

Cross-tabulations	Chi square	df	p value
MENTALLY RETARDED			
Concentration by Current by Current Employment	2.23	3	.5271
Concentration by Wages	4.41	4	.3533
Concentration by Months Employed Since High School	9.23	12	.6828
LEARNING DISABLED			
Concentration by Wages	5.51	4	.2389
SEM			
Concentration by Current Employment	3.84	3	.2794
Concentration by Wages	2.89	6	.8231
Concentration by Months Employed Since High School	18.59	12	.0987
PHYSICALLY IMPARIED			
Concentration by Current Employment	1.65	1	.1990
Concentration by Wages	*	*	.8000
Concentration by Months Employed Since High School	3.14	4	.5350

* Fisher's Exact Test

TABLE 22

Vocational Credits By Months Employed
Since High School: Learning Disabled

	None	.12 to 3.75 Mos.	4.0 to 7.75 Mos.	8.0 to 11.25 Mos.	12 Mos. or Longer
No Credits	1	0	0	0	0
.50-4.0 Credits	6	5	9	17	9
4.25-8.0 Credits	3	9	12	15	18
8.25-12.0 Credits	5	4	10	31	15
12.25 - 17.0 Credits	1	3	1	9	10

Chi square=25.75, df=16

p=.0444, N=193

TABLE 23

Vocational Concentration by Current Employment: Learning Disabled

	Unemployed	Employed
Concentrator	15	86
Limited Concentrator	2	13
Sampler	21	63
Non-participant	1	0

Chi square=7.53, df=3

p=.0568, N=201

TABLE 24

Vocational Concentration by Months Employed
Since High School: Learning Disabled

	None	.12 to 3.75 Mos.	4.0 to 7.75 Mos.	8.0 to 11.25 Mos.	12 Mos. or Longer
Concentrator	5	6	17	39	31
Limited Concentrator	1	5	3	3	3
Sampler	9	10	12	30	20
Non-Participant	1	0	0	0	0

Chi square=25.27, df=12

p=.0136, N=195

TABLE 25

Special Education Service Intensity
by Current Employment

	Unemployed	Employed
None	1	6
.5 - 9.9 Hours	22	70
10 - 19.9 Hours	36	144
20 - 32.5 Hours	33	56

Chi square=9.81, df=3

p=.0202, N=368

TABLE 26

Method of Exit by
Current Employment

	Unemployed	Employed
Diploma	70	241
Certificate	22	35

Chi square=5.82, df=1

p=.0158, N=368

TABLE 27

Method of Exit by Wages

	Less than $3.35/hr.	$3.35-$5.00/hr.	Greater than $5.00/hr.
Diploma	15	127	52
Certificate	7	15	2

Chi square=12.69, df=2

p=.0018, N=218

TABLE 28

Transportation Variables and
Current Employment

Transportation Variable	Unemployed	Employed	X^2	df	p-value	N
Driver's Licence	55	233	23.94	1	.0000	367
No Driver's License	37	42				
Would/could Drive to work	32	190	31.08	1	.0000	367
Use Other Means	59	86				
Transportation Problems	32	43	14.39	1	.0001	367
No transportation Problems	60	232				

TABLE 29

Transportation Variable and Wages

Transportation Variables	Less Than $3.35/Hr.	$3.35-$5.00/Hr.	Greater Than $5.00/Hr.	X^2	df	p-value	N
Driver's License	15	116	53	12.94	2	.0015	218
No Driver's License	7	26	1				
Would/Could Drive to Work	10	96	43	8.54	2	.0140	218
Use Other Means	12	46	11				
Transportation Problems	9	22	3	14.85	2	.0006	218
No Transportation Problems	13	120	51				

TABLE 30

Transportation Variables and
Months Employed Since High School

Transportation Variable	None	.12-3.75 Mos.	4.-7.75 Mos.	8.-11.5 Mos.	12 Mos. or More	X^2	df	p	N
Driver's License	18	38	45	105	74	29.82	4	.0000	358
No Driver's License	20	15	13	20	10				
Would/could Drive to Work	9	31	27	84	65	38.66	4	.0000	357
Use Other Means	29	21	31	41	19				
Transportation Problems	15	18	19	16	6	32.94	4	.0000	357
No Transportation Problems	23	35	39	108	78				

TABLE 31

Course Taking Patterns and
Employment Status: Mildly Handicapped Students

Cross-Tabulation	Chi Square	df	p-value	N
Arts by Current Employment	3.29	2	.1926	289
Arts by Wages	7.21	4	.1255	185
Arts by Months Employed Since High School	8.96	8	.3456	282
Humanities by Current Employment	8.78	4	.0668	289
Humanities by Wages	2.35	8	.9684	185
Humanities by Months Employed Since High School	13.66	16	.6242	282
Math by Current Employment	5.04	2	.0806	289
Math by Wages	3.41	4	.4917	185
Math by Months Employed Since High School	7.63	8	.4708	282
Science by Current Employment	.01	1	.9247	289
Science by Wages	2.04	2	.3599	185
Science by Months Employed Since High School	2.06	4	.7236	282
Vocational Education by Current Employment	4.74	4	.3153	289
Vocational Education by Wages	7.58	8	.4757	185
Vocational Education by Months Employed Since High School	25.41	16	.0629	282

TABLE 32

Course Taking Patterns and Employment Status: Moderately Handicapped Students

Cross-Tabulation	Chi Square	df	p-value	N
Arts by Current Employment	4.62	2	.0994	79
Arts by Wages	5.94	4	.2038	33
Arts by Months Employed Since High School	7.05	8	.5308	76
Humanities by Current Employment	1.93	5	.8593	79
Humanities by Wages	15.08	10	.1292	33
Humanities by Months Employed Since High School	13.38	20	.8603	76
Math by Current Employment	4.09	2	.1292	68
Math by Wages	8.19	4	.0851	28
Math by Months Employed Since High School	4.50	8	.8091	65
Science by Current Employment	5.19	2	.0745	68
Science by Wages	6.83	4	.1454	28
Science by Months Employed Since High School	11.15	8	.1935	65
Vocational Education by Current Employment	1.57	4	.8142	68
Vocational Education by Wages	8.92	8	.3493	28
Vocational Education by Months Employed Since High School	14.95	16	.5285	65

TABLE 33

Skill Class of Current Job by Manner of Exit

Skill Class of Current Job	Manner of Exit		N
	Diploma	Certificate	
Skilled	26 (96.3%)	1 (3.7%)	27
Semi-skilled	162 (87.1%)	24 (12.9%)	186
Unskilled	48 (81.4%)	11 (18.6%)	59

Chi-square = 3.65699, d.f. = 2,

p-value=.1607

TABLE 34

Current Employment Status by Manner of Exit

Current Employment Status	Manner of Exit		
	Diploma	Certificate	N
Unemployed	70 (76.1%)	22 (23.9%)	92
Employed	241 (87.3%)	35 (12.7%)	276

Chi-square = 5.81952, d.f. = 1,

p-value = .0158

TABLE 35

Correlation of Selected Variables

Variable Pair	Correlation Coefficient	p-value	N
Mainstreaming, Current Employment Status	.1551	.003	368
Mainstreaming, Months Employed Since High School	-.0924	.081	358
Number of Hours Mainstreamed, Current Employment Status	-.1864	.000	367
Number of Hours Mainstreamed, Months Employed Since High School	.0898	.090	357
Vocational Preparation Concentration, Current Employment Status	.1827	.000	367
Vocational Preparation Concentration, Months Employed Since High School	-.1743	.001	357
Vocational Classes, Vocational Preparation Concentration	.4141	.000	367
Driver's License, Primary Disability	-.0822	.116	367
Driver's License, Race	-.1966	.000	367
Driver's License, Gender	.2844	.000	367
Driver's License, Current Employment Status	.2871	.000	367
Driver's License, Months Employed Since High School	-.2704	.000	358
Driver's License, Completion of Driver Education	.3899	.000	309

TABLE 36

Current Employment Related to
Concentration Level of Vocational Preparation

Concentration Level of Vocational Preparation (p=.0743)	Currently Employed		
	Percent Employed		Total N
			367
Concentrator	80.8	of	167
Limited Concentrator	75.0	of	28
Sampler	69.6	of	168
Non-participant	50.0	of	4

TABLE 37

Time To Find Current Job by Help to Find Current Job

Time to Find Current Job	Source of Help: Self-Family-Friend	Source of Help: Other	N
Less Than One Day	87 (91.6%)	8 (8.4%)	95
More Than One Day, Less Than One Month	71 (72.3%)	16 (14.7%)	87
One Month or Longer	44 (72.1%)	17 (27.9%)	61

Chi-square = 10.23996, d.f. = 2,

p = .0060

TABLE 38

Time to Find Current Job by School Job

Time to Find Find Current Job	School Job		
	Yes	No	N
Less Than One Day	77 (81.1%)	18 (18.9%)	95
Greater Than One Day, Less Than One Month	58 (66.7%)	2[illegible] '33.3%)	87
One Month or Longer	44 (72.1%)	17 (27.9%)	61

Chi-square = 4.94273, d.f. = 2,

p = .0845

TABLE 39

Time to Find Current Job By Skill Class of Current Job Controlling for School Job

• Those Having a High School Job:

Time to Find Current Job	Skill Class of Current Job			
	Skilled	Semi-Skilled	Unskilled	N
Less Than One Day	14 (18.2%)	46 (59.7%)	17 (22.1%)	77
Greater Than One Day, Less Than One Month	1 (1.8%)	44 (80.0%)	10 (18.2%)	55
One Month or Longer	2 (4.7%)	31 (72.1%)	10 (23.3%)	43

Chi-square = 12.67503, d.f. = 4, p = .0130

• Those Not Having a High School Job:

Time to Find Current Job	Skill Class of Current Job			
	Skilled	Semi-Skilled	Unskilled	N
Less Than One Day	4 (22.2%)	12 (66.7%)	2 (11.1%)	18
Greater Than One Day, Less Than One Month	1 (3.4%)	24 (82.8%)	4 (13.8%)	29
One Month or Longer	0 (0.0%)	12 (70.6%)	5 (29.4%)	17

Chi-square = 9.32181, d.f. = 4, p = .0535

TABLE 40

Skill Class of Current Job by School Job

Skill Class of Current Job	School Job		
	Yes	No	N
Skilled	22 (81.5%)	5 (18.5%)	27
Semi-skilled	135 (72.6%)	51 (27.4%)	186
Unskilled	45 (76.3%)	14 (23.7%)	59

Chi-square = 1.13605, d.f. = 2,

p = .5666

TABLE 41

Average Months Employed Since High School
by Race and Driver's Licence

	Average Months Employed Since High School			
	Race			
	White	N	Non-white	N
Has driver's license	9.014	148	7.374	132
Does not have driver's license	7.112	20	4.717	58

TABLE 42

Average Number of Credits Earned by Vocational Students in Arts, Humanities, Mathematics, Science, Vocational Education, and Computer Science Instructional Programs

Program	Average Credits	
	Vocational Ed. (DE.)	General Education
Arts	2.56	1.5
Humanities	7.94	5.9
Mathematics	2.72	2.0
Science	1.54	1.5
Vocational Education	7.04	4.4
Computer Science	0.08	0.1

TABLE 43

Concentration of Vocational Preparation

by Gender and Race/Ethnicity

Level of Vocational Preparation	Gender (N=414)		Race/Ethnicity (N=414)				
	Male	Female	American Indian	Black	Asian	His-panic	White
Concentrator	118	62	2	76	0	2	100
Vocational Ed., DE.	(65.6%)	(34.4%)	(1.1%)	(42.2%)	(.0%)	(1.1%)	(55.6%)
General Ed.	(45.4%)	(54.6%)		(10.2%)			(73.6%)
Limited Concen-trator	21	14	0	25	1	0	9
Vocational Ed., DE.	(60.0%)	(40.0%)	(.0%)	(71.4%)	(2.9%)	(.0%)	(25.7%)
General Ed.	(49.6%)	(50.4%)		(13.3%)			(17.4%)
Sampler	124	71	1	112	1	6	75
Vocational Ed., DE.	(63.6%)	(36.4%)	(.5%)	(57.4%)	(.5%)	(3.1%)	(38.5%)
General Ed.	(50.5%)	(49.5%)		(11.0%)			(14.9%)
Non-participant	3	1	0	3	0	0	1
Vocational Ed., DE.	(75.0%)	(25.0%)	(.0%)	(75.0%)	(.0%)	(.0%)	(25.0%)
General Ed.	(58.6%)	(41.4%)		(9.8%)			(18.6%)

TABLE 44

T-Tests of Comprenensive vs. Vocational

High School Students on Selected Variables

Variable	Students	Mean	t-value	p	df	N
IQ	Comprehensive Vocational	79.8 83.9	2.62	.009	375	312 65
Arts Credits	Comprehensive Vocational	2.7 2.1	-2.70	.007	369	316 55
Humanities Credits	Comprehensive Vocational	8.1 7.4	-2.75	.006	369	316 55
Math Credits	Comprehensive Vocational	2.6 3.3	4.12	.000	369	316 55
Vocational Credits	Comprehensive Vocational	6.1 12.2	13.26	.000	369	316 55
Longest high school job (in months)	Comprehensive Vocational	12.6 16.3	1.70	.090	228	189 41

TABLE 45

Chi Square Tests of Comprehensive vs. Vocational High School Students on Selected Variables

Variable	X^2	df	p	N
Race	6.27	1	.0123	384
Program Placement	17.51	1	.0000	384
Degree of Handicap	3.51	1	.0611	384
Special Education Service Intensity (Hrs./Wk.)	8.74	3	.0329	384
School Location	39.29	2	.0000	383
Concentration of Vocational Preparation	47.78	3	.0000	383
Town (of residence)	22.10	2	.0000	339

TABLE 46

T-Tests of Transitional vs. Non-Transitional High School Students on Selected Variables

Variable	Students	Mean	t-value	p	df	N
Special Education Service Intensity (hours/wk.)	Non-transitional Transitonal	13.27 15.02	-2.37	.018	379	258 123
Main-streamed Hours/Wk.	Non-transitonal Transitional	16.47 14.51	2.63	.009	378	257 123
Arts Credits	Non-transitional Transitonal	2.51 2.88	-2.50	.013	368	247 123
Humanities Credits	Non-transitonal Transitional	7.98 9.24	-3.76	.000	368	247 123
Math Credits	Non-transitional Transitional	2.69 3.10	-2.97	.003	368	247 123
Science Credits	Non-transitional Transitional	1.53 1.87	-3.45	.001	368	247 123
Vocational Credits	Non-transitional Transitional	7.38 6.59	1.90	.058	368	247 123
Months Employed Since Left School	Non-transitional Transitional	7.36 8.18	-1.61	.108	356	248 110

TABLE 47

Chi Square Tests of Transitional vs. Non-transitional High School Students on Selected Variables

Variable	X^2	df	p	N
Disability	8.98	3	.0295	381
School Location	34.54	2	.0000	380
Town (of residence)	20.56	2	.0000	367
School Type	55.14	3	.0000	381
Program Placement	13.34	2	.0013	381
Driver's Education Completed	3.57	1	.0587	322
Concentration of Vocational Preparation	10.94	3	.0121	380
Current Employment Status	4.95	1	.0262	368
Wages (weekly)	10.89	2	.0043	218

TABLE 48

Chi Square Tests of Race by Selected Variables

Variable	X^2	df	p
School type	12.658	3	.005
IQ	38.794	6	.000
Vocational Education Concentration	17.384	3	.006
Driver's License	15.201	1	.001
Transportation to Work	22.071	1	.001
Current Employment	13.099	1	.000
Current Job Title	26.341	6	.002
Months Employed Since High School	20.232	4	.000
Mathematics Credits	6.510	2	.038