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ABSTRACT

This report is the second in a series of reports on an eight-part study of South Carolina's vocational education system. The report describes the methodology, findings, and conclusions of a study of students' perceptions of and experiences with the vocational system. Part I reports the results of a written survey administered to nearly 1,000 high school seniors and juniors in 12 schools across the state. Part II summarizes the results of follow-up telephone interviews with more than 300 high school graduates across the state who completed vocational courses in 1983. Some findings of the in-school survey were that (1) enrollment patterns in occupational courses followed traditional patterns--the largest proportion of students had taken business education and trade/industry courses; (2) in business education, the participation of white students was twice that of blacks; (3) more than one-half of the students who had taken vocational courses planned to go on to college; (4) vocational courses were seen as more important by those who had taken them than by those who had not; and (5) more than half of the students who had not taken vocational courses said they did not have time for them or were not interested. The structured telephone interviews with former students revealed that (1) nearly 60 percent were working, 15 percent were in college, 9 percent were in the military, and 17 percent were unemployed (only about 10 percent were looking for work); (2) nearly three-fourths of the graduates were satisfied with their training; and (3) the employment history of former graduates was relatively stable. Recommendations were made to improve the state's vocational programs based on the study data. (KC)

A STUDY OF VOCATIONAL EDUCATION

Report #2

What Students Say About Vocational Programs

December, 1985

The Second in a Series of Seven Reports to the
South Carolina General Assembly

Prepared by the
State Council on Vocational and Technical Education
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EXECUTIVE SUMMARY

This report to the General Assembly, compiled and prepared by the State Council on Vocational and Technical Education, is the second in a series of reports on an 8-part study of the state's vocational education system, as mandated by the EIA of 1984. The report describes the methodology, findings, and conclusions of a study of students' perceptions of and experiences with the vocational system. Part I reports the results of a written survey administered to nearly one thousand high school seniors and juniors in twelve schools across the state. Part II summarizes the results of follow-up telephone interviews with over 300 high school graduates across the state who completed vocational courses in 1983.

The survey of **in-school students** found that:

* Among those included in the sample, the rate of participation in occupational vocational courses was highest in the Piedmont and Upper-Central regions of the state, in small and medium-sized schools, and in predominantly black high schools.

* For students included in the survey, enrollment patterns in occupational courses followed traditional patterns: the largest proportion of students had taken Business Education and Trade/Industry courses. The participation of white students in Business Education courses was nearly twice that of blacks. Only about 15% of all students surveyed had taken Industrial Arts, and only 18% had taken Prevocational courses; most of these students were male.

* Students learn about vocational courses primarily through information given out at school, followed by guidance counselors and friends. Parents were a source of information for only a small percent of students surveyed.

* Among students who had taken occupational vocational courses, over one half were planning to go on to college; less than one third planned to get a job or continue in a current job. Among students who had taken no occupational courses, three-fourths planned to go to college; only one out of ten planned to go immediately to work. More females and white students planned to go to college than did males or blacks.

* Parents and relatives were reported to be of more help to students in making post-graduation plans than were counselors or placement coordinators.

* Most students felt good work habits/attitudes and basic reading/writing/math skills were of greatest importance in getting and holding jobs. Occupational skills were seen as more important by those who had taken vocational courses than by those who had taken no occupational courses.

* Most students felt occupational vocational courses do a good job of preparing high school graduates for employment.

* Over one half of the students who had never taken an occupational course said other school requirements and time/schedule conflicts had prevented them. Nearly half also said they had no interest in vocational courses or felt they didn't need them.

* Over one half of the students who had taken occupational courses gave "personal interest" as the reason for enrolling; nearly one half said they enrolled to get occupational training for employment. Only a small percent gave other reasons for enrolling in occupational courses.

* Students who had taken occupational courses gave high ratings (an average grade of "B") to all aspects of their vocational experience.

Part II of the report, findings from the follow-up telephone survey of former students who had completed occupational vocational courses, began with a brief review of the findings of several national follow-up studies. These studies of the long-term effects of vocational education have found that: across the nation, nearly three-fourths of all occupational training graduates are in related employment or continuing their education; vocational graduates experience lower unemployment rates than graduates of general high school programs; well over half of those who completed occupational programs are using their skills; most are employed in occupations related to their high school vocational training; and fewer vocational graduates are self-employed than graduates of other high school curricula. A consistent finding from these national studies is that labor market experiences are highly dependent upon the level of concentration in occupational program areas.

The structured telephone interviews with former students revealed that:

* Among the former students contacted, nearly 60% were working full or part-time, 15% were in college, 9% were in the military, and 17% were unemployed (by choice or seeking work).

* Females and blacks reported higher rates of unemployment, but they were also attending college at a higher rate than were whites or males.

* The highest employment rates were reported by students who had completed courses in Trades/Industry, Agriculture, and Occupational Home Economics. The highest rates of college attendance were reported by graduates who had completed Health Occupations, Business Education, and Marketing/Distribution courses. The highest unemployment rates were reported among students who had completed Occupational Home Economics, Marketing/Distribution, and Health Occupations courses -- areas with the greatest employment potential.

* Among those who were working full time, the rate of employment in skilled labor jobs exceeded the rate for the state in general; the employment rate in skilled labor jobs was much higher for whites than for blacks. The employment pattern of those who had completed Agriculture programs was very similar to that of Trade/Industry completers. Over 60% of those employed full time were in training-related jobs, and nearly two-thirds of these people said their occupational training helped in getting those jobs.

* Nearly 85% of those in training-related employment said the equipment or machines used on the job were similar to that on which they had been trained; 95% said the techniques and procedures used were similar. Nearly all said they were using their vocational skills on the job.

* Trade/Industry graduates in training-related jobs reported the highest salaries; students who had completed Occupational Home Economics courses reported the lowest average salaries.

* Nearly 70% of those in training-related employment said they had received less than 40 hours of on-the-job training; over one third of those who had completed Trades/Industry courses reported receiving no OJT at all.

* Among those in jobs unrelated to their area of training, most said they were unable to find related employment, no longer wanted that kind of work, or had lost interest in the area. Nearly one-third of these people had, at one time, worked in a training-related area.

* Among those working part-time, one half reported using the vocational skills acquired in high school in their current job.

* Of those who were in college full or part-time, slightly more than half were in four-year colleges and nearly 40% were in technical schools. About one half were continuing their education in an area related to their high school vocational coursework, and nearly three-fourths said their high school occupational courses were helpful in their current areas of study.

* Among those who reported being unemployed at the time of the interview, nearly one half were not seeking work; the remainder were unable to find a job or had been laid off. In all, only about 10% of those interviewed were unemployed but seeking work, a relatively low rate for this age group.

* Students who had taken occupational vocational courses gave high ratings to all aspects of their training, with the exception of job placement assistance and special services for handicapped/disadvantaged.

* Former students who had taken Agriculture, Health Occupations, or Trade/Industry courses reported feeling less well prepared in basic academic skills than did students who had completed other programs.

* About one in every five students who took occupational courses reported participation in a co-op (work-study) program; three-fourths of these people said the experience had been helpful in finding a job.

* Relatives and friends were of most assistance in finding jobs; a relatively small percent of those interviewed said counselors or placement personnel had been of most help.

* The employment history of former vocational graduates was relatively stable. Most of those interviewed had held only one or two jobs since graduation.

* Nearly three out of every four students who had taken occupational vocational courses said they would repeat their training if they were in high school again. Among those who would not repeat their training, over one half said they had lost interest in the field or changed their minds. Only 15% of these people said they would not repeat the same training because of lack of job opportunities, and only 10% were dissatisfied with the training received.

Based on the findings of these two studies, the State Council proposed several recommendations. These included:

1. The need for an in-depth study of Prevocational and Industrial Arts courses to examine their purposes and develop strategies for expanding their content and increasing female enrollments.

2. The need for a state-wide promotional campaign that would target information to parents about vocational education opportunities for their children.

3. The need to examine the role of guidance counselors in providing career planning assistance to students at an appropriate time.

4. In light of the variety of reasons why students select occupational courses, a wider range of appropriate outcome measures (in addition to training-related placement) should be developed.

5. The need to carefully monitor the impact of increased graduation requirements and other enrollment barriers on vocational education enrollments.

6. The need for increased efforts to ensure race and sex equity across all vocational programs.

7. The need to clarify the purposes and objectives of each occupational program, and to develop relevant outcome measures.

8. The need to examine the causes of poorer placement rates in some vocational programs.

9. The need to improve job placement assistance being provided to students in occupational vocational programs.

BACKGROUND

The South Carolina Council on Vocational and Technical Education is a 13-member board appointed by the Governor to meet the federal requirements of the Carl D. Perkins Vocational Education Act (P.L. 98-524). The majority of the members of the Council represent the private sector. The Council operates as a state agency, with a small staff, and is funded by a federal allocation and a state appropriation. The State Council has responsibility for evaluating and making policy recommendations to the vocational and technical education systems, as well as the Job Training Partnership Act (JTPA) program. Compliance with these duties is required to ensure the state's eligibility to receive federal funds for vocational education.

The Education Improvement Act of 1984 (Subdivision A, SubPart 5, Section 2) directed the State Council on Vocational and Technical Education to conduct an intensive study of how the state's vocational education system can best prepare young people with skills employers will require between the years 1990 and 2000. The information generated by the study will also assist the General Assembly and the Governor in reviewing vocational education in Grades 9 through 12, as part of a statewide reassessment of job training efforts.

For the purpose of this and subsequent reports, the term "vocational education" is defined in South Carolina as an instructional program designed to provide high school students with skills needed for paid or unpaid employment, or for additional preparation for a career field. Vocational programs fall into six major occupational fields and several non-occupational fields. The occupational fields include: Agriculture, Marketing and Distributive Education, Secondary Health Occupations, Occupational Home Economics, Business Education, and Trade and Industry. Programs considered non-occupational are: Consumer and Homemaking Education, Prevocational, Industrial Arts, and Personal Typing or Notehand courses.

Although the stated purpose of the study was to project future job markets and skills, and recommend ways in which the vocational education system can best meet these needs, the wording of the Act specified eight (8) key elements about which information was requested:

1 - ENROLLMENT PATTERNS: data on and analysis of students' use of the vocational education system;

2 - INFORMATION MANAGEMENT: recommendations for the creation of a new management information system that would provide more timely,

accurate, and useful information on vocational enrollments, completions, and placements;

3 - STUDENT CHARACTERISTICS: a demographic and achievement profile of vocational students;

4 - EMPLOYER PERCEPTIONS: a report of employers' expectations of and experiences with the vocational education system;

5 - STUDENT PERCEPTIONS: a report of students' perceptions of and experiences with the vocational education system;

6 - NEEDS OF LOW ACHIEVERS: recommendations for how the vocational system can best meet the training and employment needs of low achievers;

7 - IMPROVED COORDINATION: recommendations for how the programs of the vocational education system can be better coordinated with other education, training, and employment agencies; and

8 - LABOR PROJECTIONS: a report on the state's labor needs for the coming decade that can be met by vocational program graduates.

Only the last element, labor projections, addressed the original charge in the legislation. Therefore, it was the Council's understanding that the eight specified elements of the study constituted a framework for collecting information which could then serve as a basis for more comprehensive recommendations. For this reason, the overall approach taken in the study was one of meeting the requirements of each element even though, collectively, they might surpass the general charge. The Council's intent is to provide objective, descriptive information and constructive recommendations, not to evaluate the vocational education system.

Reports will be issued serially, as each element of the study is completed, with an overall completion date of April, 1986. Each report consists of both a detailed description of study activities and findings, and a brief summary. A final report will contain the combined findings from all study elements and a set of comprehensive recommendations.

This report to the General Assembly documents the basis, methods, results and recommendations of study element #5 - STUDENT PERCEPTIONS. The report addresses students' perceptions of and experiences with vocational programs, based on data collected through surveys of both current public school students and former vocational graduates.

PART I:
CURRENTLY ENROLLED STUDENTS

Introduction

Just as manufacturers must consider the needs and reactions of consumers to various products, educators and policy makers must be concerned with the opinions and evaluations of students, the "consumers" of educational programs. The assessment of students' perceptions of and experiences with vocational courses can help to determine motivations for enrolling, make changes in courses or programs, strengthen student services, identify enrollment barriers, and target promotional information to various groups.

The major areas believed to be of concern to educational policymakers were:

* For what reasons do students select or fail to select vocational training?
* How do students learn about vocational program offerings, and who or what is of most help in making career plans?
* What characteristics do students see as most important in getting and keeping a job?
* How do vocational students rate the quality and adequacy of their programs?
* How well do vocational students feel they are being prepared for employment?

Such questions were the focus of a brief survey of currently enrolled students. In addition, there was some interest in learning if other factors, such as economy of the area or student demographics, played a role in the choice to enroll in vocational courses or programs.

Methods Used in the Study

Although the EIA study requirements proposed that data on current students' perceptions of and experiences with the vocational system be collected through interviews, this method was impractical for several reasons. Access to high school students for interview purposes is difficult, particularly now that school free periods are very limited. Structured interviews are costly, time-consuming, and difficult to standardize with this age group. It was decided that given the timing of the study (end of the school year), the best method of collecting information from a large number of students in a short time period would be a written survey.

Students

One of the central questions in the study was why students selected or failed to select vocational courses. For this reason, the sample of students to be surveyed had to include both vocational and non-vocational students. For the purposes of the study, a "vocational" student was one who reported having taken or who was currently enrolled in an occupational vocational course or program. A "non-vocational" student was one who reported never taking an occupational vocational course or program. Those who had taken only non-occupational Homemaking, Industrial Arts, Prevocational, or Personal Typing courses were considered non-vocational students. This was a slight deviation from the way in which the terms are normally used (usually, both occupational and non-occupational courses are considered "vocational"), but it was more consistent with the General Assembly's use of the term in the EIA, where job placement is given heavy emphasis.

It was also important to restrict the study to students who had experience with the vocational system, or who were unlikely to enroll in vocational courses if they had not already done so. For this reason, the study focused primarily on high school seniors who had access to a variety of vocational programs.

Schools

Twelve high schools were selected for participation in the study. Schools were chosen to represent various combinations of enrollment size, race predominance, area of the state, and economy of the county in which the school was located. To ensure a high percentage of "vocational" students among those to be surveyed, all schools selected were "feeders" to local vocational centers. Knowledgeable staff in the State Office of Vocational Education and relevant county/school district rankings were used to make the final selections. Appendix A contains a list of the participating schools and their characteristics.

Once the sample of schools was selected, each district Superintendent and high school Principal was contacted by mail and/or telephone to explain the purposes of the study and to solicit their cooperation. In most cases, the Principal designated someone at the school (usually a counselor) to work with Council staff in making the necessary arrangements; in a few cases the Principal assumed this responsibility. Because the survey was to be brief and capable of being administered during the short homeroom period, all of the schools were willing to cooperate.

Arrangements at each school included setting a specific date to administer the survey, designating between two and five homerooms (depending upon senior enrollment) during which the form could be distributed and completed, and notifying homeroom teachers. Homerooms were selected largely at random, with the stipulation that

they contain both vocational and non-vocational students. Since most schools use an alphabetical system for assigning students to homerooms, a relatively representative sample was assured. To help reduce other sources of bias, Mondays and Fridays were avoided in scheduling schools for administration of the survey.

Survey Form

In designing the survey form, three requirements were essential: it had to be very brief, easy to read, and simple to complete. Since a large number of students were to be involved, it also had to be formatted for easy tabulation of responses.

The decision was made to exclude items about the kinds of courses students would like to have taken. Although such questions yield interesting information, they require the use of rather long course lists, and similar data are available in routine needs assessment studies. It was also decided to avoid policy issues, such as what the purpose of vocational education should be or for whom it should be targeted, as responses to these questions tend to be highly unreliable when respondents lack the knowledge necessary to make such judgments.

Ten fixed-choice questions were developed and "pre-tested" with approximately 45 students at a local high school. Several item revisions were made on the basis of these results that improved readability and understandability. The final version of the survey form is contained in Appendix B.

Survey Administration

Nearly one thousand students were surveyed during late April and early May. In all but two of the participating schools, the survey was administered by Council staff and trained proctors. The training and use of proctors, most of whom were retired teachers, ensured consistency in the administration of the survey and provided additional assurance of response anonymity. Two schools volunteered to give the survey themselves, and detailed instructions were provided to staff who were assigned this task.

Following some brief instructions on what was meant by "vocational" and "non-vocational" (i.e., occupational versus non-occupational) and the kinds of courses included in each program area, students were given about eight minutes to complete the form. Participants were reminded of anonymity and encouraged to be frank and honest. The proctors were available in each room to answer questions. Everyone was able to complete the form within the homeroom period (usually ten minutes). Students were allowed to keep the pencils in appreciation of their participation.

Student participation was good at all schools. Since very few forms were found to be unuseable, the students obviously took the survey seriously. Teachers were also very cooperative, and their presence in the classroom helped to keep students focused on the items.

Limitations of the Study

Before discussing the findings of the study, it is important to note its limitations. Schools selected for participation in the study were not intended to be representative of the state. The wide variation in school size, location, composition, and vocational emphasis could not possibly be represented in a study of this size. Rather, the emphasis was on those schools in which at least 50 percent of the students could be expected to have taken a vocational course. This emphasis was necessary to ensure an adequate sample size. However, no distinction was made on the survey form regarding the location (high school or vocational center) at which students had taken their vocational courses.

Every attempt was made to ensure that students participating in the study understood terms such as "vocational education" and "occupational courses" (e.g., through item wording, instructions by proctors). But there is no assurance that all students achieved the same level of understanding, or that their definitions matched those of the investigators.

Students were encouraged to complete all the items on the survey that pertained to them, but some items were skipped. For this reason, all sub-group analyses reflect "the number of students who responded to the item", indicated by N=(number), and may not equal the total number of participants. In other cases, students were allowed to check more than one response option. This resulted in "duplicated" counts of some response options, with totals exceeding 100 percent.

Findings

All Students Surveyed

Of the 956 students who participated in the survey, 49 percent were female (51 percent male), and 57 percent were white (43 percent non-white -- predominantly black). These percentages parallel fairly well the typical distribution of all secondary enrollments. Since the study focused on students who were advanced enough to have had experience with the vocational education system, 91 percent of those who

completed the survey were in the twelfth grade; only 9 percent were eleventh graders. Representation by region of the state is shown in the following table.

Table 1: Survey Participants by Region of the State

	Number of Schools	Number of Students	Percent of Total Sample
Coastal	3	225	24%
Midlands	6	479	50%
Piedmont	1	73	8%
Upper-Central	2	179	19%

Because of the small percentage of students in the Piedmont region (Greenville-Spartanburg) who take their occupational courses at vocational centers, relative to other areas of the state, only one school in this region was included in the study. The "upper-central" region included York and Chester counties.

Participation in Occupational Courses

Three-fourths (75%) of all students who completed the survey said they had taken at least one course, in one or more of the six occupational vocational areas (e.g., Business Education, Trade/Industry, etc.). Only 25% reported never taking an occupational course, although some of these students had taken Personal Typing, Pre-vocational, or other non-occupational vocational course. There were no major differences between the percent of males and females who reported taking occupational courses (73% and 76%, respectively). There was a slight difference between the percent of non-white (78%) and white (71%) students who had taken one or more occupational courses.

To determine if rates of participation in occupational programs vary across the state, the 12 participating schools were classified according to their location in one of the four generally-accepted regions. Table 2 shows the percent of students surveyed in each region who reported they had taken (or were currently enrolled in) occupational vocational courses.

Table 2: Participation in Occupational Courses by Region of the State

	Number Surveyed	% Who Took Occup. Courses
Coastal	225	62%
Midlands	479	77%
Piedmont	73	81%
Upper-Central	179	82%

The percent of students who reported taking occupational courses was lowest in the Coastal area, and considerably higher in the Piedmont (Greenville-Spartanburg) and Upper-Central (York-Chester) regions. It is interesting to note that while high schools in the Piedmont area feed only a small percent of their students to area vocational centers, the rate of student participation in vocational education in this region is high. Despite the industrialization of the Piedmont region and high student demand, enrollments at vocational centers are apparently limited by other factors (e.g., funding and administrative policies in feeder high schools).

To determine if rates of participation in occupational courses is related to the size of the "home" school attended, participating schools were grouped into four size categories. Table 3 compares the percent of students who reported taking one or more occupational courses in each of the size groupings.

Table 3: Participation in Occupational Courses by School Size

	Number Surveyed	% Who Took Occup. Courses
Small (under 800)	167	85%
Medium (800-1000)	219	88%
Large (1000-1700)	183	66%
Very Large (over 1700)	387	66%

A higher percentage of students in small and medium sized schools reported participation in occupational courses than did students attending schools classified as large or very large. A variety of factors associated with school size (economy, urbanization, availability of postsecondary schools) may account for these differences, but they point out the need and demand for access to occupational training in smaller schools.

To determine if the rate of participation in occupational courses is related to general economic conditions in school districts, the 12 schools were classified according to whether they fell above, near, or below the state's median ranking for percent of students eligible for free or reduced-fee lunches. A comparison of the percent of students who reported taking one or more occupational courses in each of the three school categories revealed only slight differences. The percentages varied from 77 percent (schools above the median on proportion eligible for free or reduced lunch) to 71 percent (schools below the median).

Differences did emerge when participating schools where grouped into three categories of race predominance (more than 65 percent of high school enrollment of a given race): white, non-white, and balanced. This comparison is shown in Table 4.

Table 4: Participation in Occupational Courses by Race Predominance of School

	Number Surveyed	% Who Took Occup. Courses
Predominantly White Enrollment	344	69%
Predominantly Non-White Enrollment	291	80%
About Equal in Enrollment	321	75%

In comparison to the respondents in schools with predominantly white enrollment, a larger percent of students surveyed in predominantly black schools said they had taken at least one occupational course. In schools with a near equal enrollment of white and black students, 75 percent of those surveyed had taken occupational courses. The distribution of these students across occupational areas is discussed in the next section.

There was also a slight difference in rates of participation in occupational courses when responses were analyzed according to whether or not students were

bussed to a vocational center. In schools where bussing was necessary (vocational center was geographically separate from the high school), 71 percent of the survey respondents reported taking occupational courses. When the vocational center was attached to the high school or in close proximity (no bussing), 79 percent of the students surveyed said they had taken occupational courses. This analysis, however, did not take into consideration the amount or type of occupational training offered at the home high school or any administrative or scheduling policies that might have affected attendance at a vocational center.

Occupational Areas

Among the 713 students who reported taking occupational vocational courses, 81 percent said those courses had been taken in only one area (e.g., Business Education, Trade and Industrial, etc.). The remaining 19% had taken courses in two or three different occupational areas (usually Trade/Industrial and Agriculture, or Business Education and Marketing/Distribution).

Table 5 compares occupational vocational enrollments for 1984-85, as reported by the Vocational Education Data System (VEDS), with the distribution of students surveyed. Note that column totals for the sample population exceed 100 percent because students could indicate courses taken in more than one area. Also, subgroup sample sizes may not equal the total sample size due to missing data.

Table 5: Distribution of Students Across Occupational Areas

	VEDS Enrollment 1984-85	Total Sample (N=713)	Males (N=355)	Females (N=351)	Non-white (N=317)	White (N=381)
Agriculture	11%	12%	19%	5%	9%	14%
Marketing/Distribution	5%	12%	8%	17%	16%	9%
Health Occupations	2%	5%	2%	7%	7%	2%
Occup. Home Economics	2%	17%	11%	23%	25%	11%
Business Education	53%	42%	25%	59%	29%	53%
Trade/Industry	27%	36%	59%	11%	38%	34%

Compared to 1984-85 VEDS-reported enrollments, students who participated in the survey reported taking more Marketing/Distribution, Occupational Home Economics, and Trade/Industrial courses. A smaller percentage of students reported taking Business Education courses than 1984-85 enrollments indicated. In making these comparisons,

several factors must be considered: the sample consisted mainly of seniors, while VEDS occupational enrollments reflect all high school students; VEDS enrollments reflect unduplicated counts (students taking courses in more than one area simultaneously are counted in only one), while students in the survey reflect duplicated counts; and students seemed less clear about whether or not a particular business education course was "occupational." Taking these factors into account, Table 5 suggests several important findings:

a) The second column of the table reflects occupational training experiences as reported by students who were about to graduate. While based on only a small percent of high school enrollments, these findings suggest differences in occupational program participation between grade levels. Analysis of VEDS enrollments by grade level (9 & 10 versus 11 & 12) bears this out -- most vocational courses are taken in the junior and senior years. Thus, the distribution of vocational enrollments looks somewhat different when only the upper grades are analyzed.

b) The second column also reflects occupational training experiences as reported by students who had considerable access to occupational programs offered at vocational centers. Again, even though based on a relatively small sample, a comparison between VEDS and sample data suggests that access to a broader range of occupational programs affects patterns of participation that are not apparent when enrollments are combined across all schools.

c) Participation in occupational programs, as reported by the students surveyed, follows traditional patterns: the largest percent of students reported taking courses in Business Education and Trade/Industry. Males had higher participation rates in Trade/Industry and Business Education, while the largest percent of females reported taking courses in Business Education, followed by Occupational Home Economics.

d) Among white students surveyed, occupational training tended to cluster in the Business Education and Trade/Industry areas, while black students reported participation in a broader range of areas. Also, the percent of white students who had taken Business Education courses was almost twice that of black students.

Non-Occupational Areas

Of the 956 students surveyed, 143 (15%) reported taking Industrial Arts and 168 (18%) had taken a Prevocational course. Participation rates in these courses, as well as Personal Typing, and Remedial English or Math are shown in Table 6. As this summary shows, Prevocational and Industrial Arts courses are attracting primarily males, as less than 10 percent of all females surveyed said they had taken either of these courses.

Although not reflected in Table 6, it was found that among the 168 students who reported taking a Prevocational course, 92 percent also reported taking one or more occupational courses.

Table 6: Participation Rates in Non-Occupational and Remedial Areas

	Indust Arts		Pre-Voc		Typing		Remedial	
	N	%	N	%	N	%	N	%
All Students	143	15%	168	18%	316	33%	54	6%
Males Only	112	23%	127	26%	134	27%	28	6%
Females Only	30	7%	39	8%	181	39%	26	6%
Non-White Only	61	15%	100	25%	119	29%	38	9%
White Only	80	15%	65	12%	195	37%	14	3%

The percentage of students who said they had taken Remedial Math or English was found to be very low, but the proportion was higher for non-white students surveyed than for white students. An additional analysis of the responses of the 54 students who reported taking a remedial course showed that 42 (78%) of them had also taken one or more occupational courses.

How Students Learn About Vocational Offerings

Students in the survey were asked to indicate how they learned about vocational courses and programs. Their responses are shown in Table 7. Since many students checked more than one source, the column totals exceed 100 percent. In this and subsequent tables, "vocational students" refers to those who said they had taken at least one occupational course. "Non-vocational students" refers to those who said they had never taken a course in any of the six occupational areas.

Table 7: Reported Sources of Information About Vocational Programs

	All Students (N=956)	Vocational Students (N=713)	Non-vocational Students (N=243)
Information at School	56%	58%	51%
Guidance Counselor	34%	37%	26%
Friends	30%	32%	24%
Printed Materials	18%	18%	18%
Parents or Relatives	7%	7%	6%
Other Sources	1%	1%	1%
Had No Information	5%	1%	14%

The highest percent of students reported learning about vocational offerings through information given out at school. Since this category was so general, however, it could include those who received information from school friends, teachers, bulletin boards, etc. Other sources that were frequently singled out were counselors and friends. Parents and relatives were a source of information for only a small percent of the students in the survey. Noteworthy is the finding that 14 percent of the students who reported taking no occupational courses said they had no knowledge of them.

Post-Graduation Plans

Of interest in the study was the relationship between participation in occupational training and what students planned to do after graduation. Student responses to the item about post-graduate plans are shown below.

Table 8: Post-Graduation Plans of Students Surveyed

	All Students (N=810)	Vocational Students (N=590)	Non-vocational Students (N=220)
Continue education	59%	53%	76%
Get full or part-time job	18%	21%	8%
Join military	14%	16%	11%
Continue in present job	7%	8%	4%
Other (stay home, travel)	2%	2%	--

As would be expected, a larger percent of students who had taken occupational training said they planned to go to work after graduation, and a smaller percent planned to continue their education, than did students who had taken no occupational training. However, a surprisingly high proportion of students who had taken occupational courses were planning to continue their education. Only 29 percent could be considered "working or available for work" upon graduation. However, since students were asked to select only one option, it is not possible to determine the number of students who will actually work and go to school.

Although not reflected in Table 8, there were some sex and race differences regarding post-graduation plans. Compared to males, a much higher percentage of the females surveyed said they planned to continue their education (70% of the females

compared to 49% for males), but a considerably lower percent planned to join the military (4% of the females versus 25% of the males). Compared to non-white students surveyed, a higher percentage of white students said they planned to continue their education (66% of the white students versus 50% of the non-white students), and a lower percent planned to join the military (8% of the white students surveyed; 24% of the non-white students).

Assistance With Post-Graduate Plans

Table 9 summarizes student responses to the questions about who or what had been of most help in making post-graduation plans. Since students were allowed to select all options that pertained to them, column totals exceed 100 percent.

Table 9: Reported Sources of Assistance in Making Career Plans

	All Students (N=956)	Vocational Students (N=713)	Non-vocational Students (N=243)
Parents or Relatives	56%	54%	64%
Guidance or Placement Counselor	14%	15%	11%
Friends	10%	9%	11%
Teachers	10%	11%	7%
Other (self, employer)	11%	11%	13%
No Plans Made Yet	9%	10%	7%

With few significant differences between vocational and non-vocational students, the largest percent of all students surveyed said their parents or relatives had helped most in deciding what to do after graduation. According to Table 7, however, only a small number (7%) of students said parents and relatives were a source of information about vocational programs.

Another important finding in Table 9 is that while assistance in developing career plans is thought to be a primary responsibility of guidance and placement counselors, they were cited as a major source of help by only a slightly higher percent of students than were friends, teachers, and employers.

Student Perceptions of Employability Factors

What do students, particularly those receiving occupational training, perceive as the most important thing to be taught in high school that will help them find and keep jobs? When asked this question, students were instructed to select the most important aspect, but many of the respondents checked more than one option, indicating they felt several aspects were equally significant.

Table 10: Student Perceptions of Employability Factors

	All Students (N=956)	Vocational Students (N=713)	Non-vocational Students (N=243)
Good work habits/attitudes	49%	50%	47%
Ability to read/write/ follow directions	32%	32%	34%
Occupational skills	23%	26%	13%
Work-study experience	20%	22%	15%
College degree (*)	12%	10%	16%
Ability to adapt to changes in job or business	1%	1%	1%
Other factors	8%	8%	9%

(* Worded somewhat differently on survey form)

In agreement with the findings of most employer surveys, about one half of the students surveyed said "good work habits and attitudes" was one of the most important things to be taught in high school to help in finding and keeping a job. Another one third placed importance on basic abilities (e.g., reading, writing). In comparison to students who had taken no occupational courses, a larger percent of vocational students felt "occupational skills" and some work experience were among the most important things to be taught in high school. This finding was expected. What is surprising is that "occupational skills" was not selected by the majority of vocational students; it ranked third. This finding suggests there may be important differences between students with regard to their expectations and intentions when they enroll in vocational courses.

The ability to adapt to changes in jobs and businesses was viewed as an important worker characteristic by only one percent of all the students surveyed. Apparently this concept, which is growing in popularity among employment analysts, is still a new one to high school seniors and juniors, and many of the respondents may not have understood the term.

Vocational Preparation for Employment

Regardless of their experience with vocational courses, students were asked to indicate how well they thought vocational programs prepared high school graduates for employment. Overall, the ratings were high.

Table 11: Student Ratings of Adequacy of Vocational Preparation

	All Students (N=950)	Vocational Students (N=709)	Non-vocational Students (N=241)
Very well	46%	53%	26%
Pretty well	44%	43%	47%
Not very well	1%	1%	1%
Not at all	--	--	--
Don't Know	9%	3%	25%

Ninety percent of those surveyed thought vocational programs prepared students "very well" or "pretty well" for employment. In comparing the response rates of students who had taken occupational courses with those who had not, it must be kept in mind that 25 percent of the latter group ventured no judgment.

Reasons for Not Taking Occupational Courses

The 243 students surveyed who said they had taken no occupational vocational courses were asked to indicate their reasons. Over one half (58%) indicated that "other (graduation) requirements prevented" them, or that they had "time/schedule conflicts." The concern of vocational educators and administrators that increased graduation requirements will further restrict students from enrolling in occupational courses appears to have some basis in these results.

Another 38% of these students said they had either "no interest" or felt they "didn't need" vocational courses. Only two percent of the respondents said they failed to enroll because occupational courses were of "poor quality." Another two

percent indicated they didn't know about these courses. Thus, while course quality does not appear to be a concern among students, counseling about the need for or appropriateness of vocational courses for some students may be insufficient.

Reasons for Taking Occupational Courses

Of all students surveyed, 713 (75%) reported they had taken one or more courses in one or more occupational vocational areas. Of these, 696 responded to the question about why they had taken occupational courses. Some of the respondents checked more than one reason. Over one half (53%) indicated they had enrolled because of "personal interest," and 47 percent said they wanted to get "occupational training for work." A much smaller proportion of respondents said a counselor had suggested the course (9%), or that they enrolled because their friends were taking the same course (6%). About 3 percent of the vocational students cited "less homework" as a reason for taking occupational courses; another 3 percent said they didn't know why they had chosen a particular course.

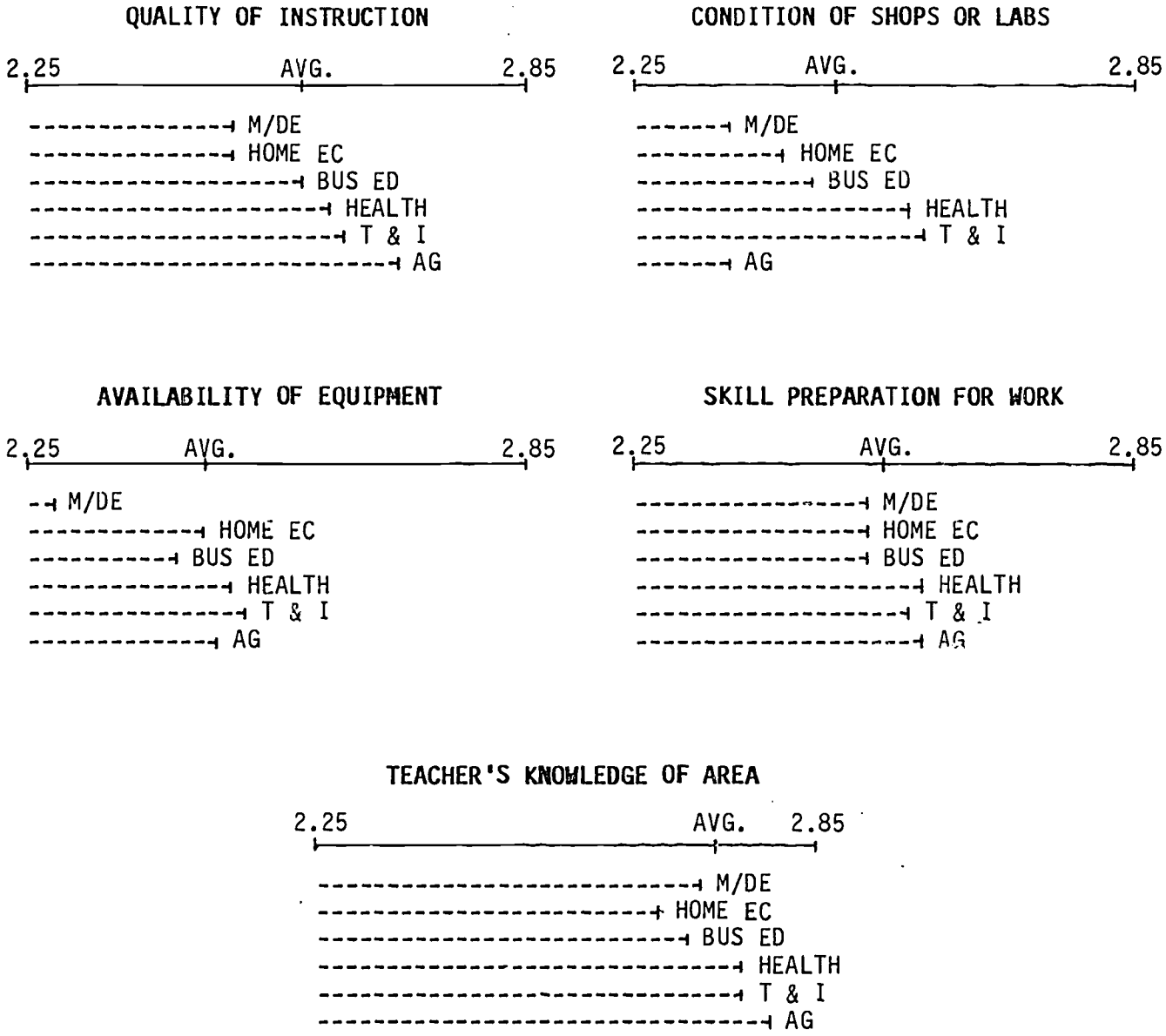
When responses were compared across the six occupational areas, there were few differences. In five of the six occupational areas, "personal interest" was the reason indicated by the largest percent of students surveyed. These percentages ranged from 58 percent for students taking Business Education courses, to 65 percent for those who had taken Health Occupations courses. Only in the Trade/Industry area did the largest percent of students check "occupational training" as the reason for taking these courses.

While there were no significant differences between males and females regarding reasons for taking occupational courses, there were some slight race differences. The largest percentage of black vocational students (53%) gave "training for work" as a reason for taking occupational courses, followed by "personal interest" (45%). The reverse was true for white students: 60 percent said they took occupational courses out of personal interest; 44 percent cited occupational training for work.

Rating of Occupational Courses

Students who had taken at least one occupational course (713 out of 956) were asked to give an overall rating of course(s) taken, on five dimensions: Quality of Instruction, Condition of Shops or Labs, Availability of Equipment, Skill Preparation for Work, and Teacher's Knowledge of the Area. A simple rating scale of "excellent", "fair", and "poor" was used. Since this scale was biased to the positive, a meaningful analysis required converting the ratings to a numerical scale (3,2,1), computing the average rating on each of the five dimensions, and showing the relative standing of each occupational area on the five dimensions. The results of this analysis are shown in Figure 1.

Figure 1: Student Ratings of Occupational Courses on Five Dimensions of Quality



(Averages calculated on following subgroup sample sizes: Overall=668; Agriculture=82; Marketing/Distribution=77; Health Occupations=30; Home Economics=109; Business Education=287; Trade/Industrial=243)

Since the numerical range was restricted to three points, small differences between average ratings can be significant. Figure 1 shows that the average ratings for Health Occupations and Trade/Industry courses were consistently above the overall average. With the exception of "Condition of Shops or Labs," this was also true for Agriculture courses. Student ratings for Business Education, Marketing/-Distribution, and Occupational Home Economics fell consistently at or below the overall average ratings.

Also significant was the amount of variability (or "spread") in average ratings on each of the five evaluative dimensions. There was considerably more spread in ratings given for "Quality of Instruction" and "Condition of Shops or Labs" than on the other three dimensions. Greater variability is an indication that either a) students within each program area disagreed more about the Quality of Instruction and Condition of Shops/Labs than they did about the other three aspects of their training, or b) there are greater differences between programs with regard to Quality of Instruction and Condition of Shops/Labs.

Tests for significance showed that the rating spread for "Quality of Instruction" was due to disagreement among students, not actual differences between programs. This makes intuitive sense. Students are more likely to disagree about quality of instruction than any other aspect of their coursework.

Tests for significant differences regarding "Condition of Shops/Labs" confirmed what is visually apparent. Students who had taken Agriculture courses consistently rated the condition of shops and labs significantly lower than did students who had taken Trade/Industry, Health, or Business courses. Although the condition of shops and labs was rated equally low by Marketing/Distribution students, this was due to only a few students who gave very low ratings, pulling down the average.

Conclusions and Recommendations

1. A low percentage of students, particularly females, are participating in Prevocational and "career search" courses. This may be due to the fact that these courses continue to focus on a narrow range of occupations, and/or there is not enough promotion regarding the role and value of these courses.

   RECOMMENDATION: An in-depth study of Prevocational courses should be undertaken to determine how effective they are in exposing students to occupational alternatives and opportunities, and how they impact on special populations. The study should also focus on how well Prevocational courses cover the range of occupations relevant to the coming decade.

2. A low percentage of students, particularly females, are participating in Industrial Arts courses.

   RECOMMENDATION: An in-depth study should also be conducted on the status of Industrial Arts. The study should: a) identify ways to improve the link between Industrial Arts and career and economic opportunities in the state, and 2) identify ways to expand the content and focus of Industrial Arts to make it more attractive to a wider range of students. Recent trends indicate a movement away from Industrial Arts as a prevocational experience only for students headed for trade and industrial programs to "technology education" that is more in tune with the direction of the national economy.

3. Parents are a major source of influence on students in determining post-graduation plans, yet they are one of the least likely sources of information about vocational education. This lack of awareness about vocational programs is a barrier to attracting some types of students. Many people continue to associate vocational education only with trade and industrial training. They do not realize that vocational education today also involves training people for jobs in business and governmental agencies, retail establishments, and health care facilities, as well as preparing students for advanced training.

   RECOMMENDATION: Awareness of vocational programs should be dramatically increased through a statewide information campaign directed at junior high school students and parents. The Carl Perkins Act requires that information about vocational programs be provided to handicapped and disadvantaged students, and their parents, before these students enter the ninth grade. This information could be provided to all eighth graders and their parents. The information should be standardized to ensure that all students and their parents are fully and correctly informed about vocational education programs available in high school.

4. Most students do not view counselors as a major source of assistance to them in making career plans. Rather, parents and relatives are most influential. This has major implications for vocational education if students are to make realistic career plans.

   RECOMMENDATION: To examine the role of counselors in providing assistance to students, and the adequacy of these services in helping students make informed curriculum and career decisions.

5. Only about one out of every five vocational students plans to enter employment immediately after graduation from high school. This calls into question the appropriateness of using job placement as the sole criterion for program continuation.

   RECOMMENDATION: Since many students plan to go on to college or enter the military, there is a need to look at the adequacy of articulation with TEC and other colleges, and the transferability of skills to military training programs as alternative criteria for evaluating some vocational education programs.

6. Rates of participation in occupational vocational courses appear to be affected by other academic course requirements, class scheduling conflicts, and a variety of factors that may take precedence over student needs and interests.

   RECOMMENDATION: There is a need to examine carefully how increased graduation requirements, administrative policies, faculty and parental attitudes, promotional efforts, local employment practices, or other factors are facilitating or hindering student participation in occupational vocational education.

7. Enrollments in occupational vocational courses continue to follow traditional patterns by race and sex.

   RECOMMENDATION: Continued efforts are needed to increase sex and race equity across occupational programs. The information from this study could be used as a "benchmark" against which to assess the success of newly funded efforts in the area of sex equity.

8. Only a small percentage of students taking occupational training are receiving remediation. Either vocational students have a limited need, they do not have access to relevant remediation programs, or they simply do not identify their courses with this term.

   RECOMMENDATION: The need for specific areas of remediation among vocational students should be assessed, and strategies should be developed for providing remediation in a way that will not further restrict occupational training opportunities.

PART II:
FORMER STUDENTS

Introduction

Assessment of former students' perceptions of and experiences with vocational programs is typically carried out in the larger context of evaluating the outcomes of vocational education in general. In addition to obtaining students' opinions about the quality of instruction and adequacy of preparation for work, most studies also assess former students' experiences in the job market: work and unemployment history, relatedness of work to training, salaries, job satisfaction, and a variety of other outcomes.

Determining the impact of training on students at some point after graduation is usually done through follow-up or "placement" surveys. These studies typically focus on placement status (e.g., employed, in school, unemployed, in the military, etc.), relatedness of employment to field of training, earnings, and student opinions about the quality of training received. States receiving federal funds for vocational education are required to conduct placement surveys of graduates each year. In addition, several national studies have examined the short and long term effects of participation in vocational programs.

Up until this year, South Carolina's Office of Vocational Education (OVE) conducted an annual placement survey of a 50 percent sample of non-returning students (graduated or otherwise left school) who completed vocational courses the previous year. A mail questionnaire asked former students to indicate: current status (employed, unemployed, in school, etc.), relatedness of employment to vocational training received in high school, overall quality of training, salary, and current employer. One half of the state was surveyed each year, with a response rate of about 30 percent. It is not known how well those who returned completed surveys represented the entire pool of vocational graduates, but bias is more likely to occur when response rates are relatively low.

In order to obtain more accurate and comprehensive information, the OVE instituted a teacher-based follow-up system in school year 1983-84. The form used to collect information was later modified in accordance with EIA requirements. Schools are now provided with a computer-generated list of the total number of students who completed each vocational course, as reported the previous year. The school indicates the number of completers in each course who were available for placement and who are now placed in area for which trained, placed in unrelated employment, of unknown status, in the military, or attending postsecondary schools.

Although the new reporting system provides data on virtually all placements, it also has serious constraints. No distinction is made between students who completed a sequence of courses (i.e., a program) and those who may have completed only one or two courses. There are no uniform definitions concerning placement categories such as "available for placement" or "placed in area for which trained." For example, is a student who completes an occupational program in food services, but who chooses not to work, available or unavailable for work? (The category "unemployed" does not allow for distinctions between those looking for work and those who choose to be unemployed.) Is a graduate of a diesel mechanics course who takes employment as a truck driver working in a related or unrelated field? The current system allows for wide variation among those reporting the data with regard to how various categories are defined and reported.

The Carl Perkins Vocational Education Act of 1984 now places responsibility for follow-up of graduates with each Local Education Agency (LEA). Results of placement surveys must be submitted annually to the State OVE and will be used to determine whether or not a program is meeting the new Act's placement criterion for continuation. The criterion is that over a three year period, an average of 50 percent of the vocational completers available for employment must be placed in the area for which they were trained, or a related area. While the OVE will provide technical assistance, it is not yet known what methods or definitions will be used by LEAs in conducting annual placement studies, nor how comparable the results will be when combined state-wide.

Findings from Previous Follow-up Studies

Measuring the effects and benefits of completing a vocational curriculum is difficult. Often, the effects of participation cannot be easily separated from factors that originally led students to select certain training. In addition, many factors other than vocational training influence the status of graduates once they leave high school. The family background and academic ability of students, the areas in which they live, the quality of programs, and local labor market conditions all influence students' subsequent attainments. Assessing the short term effects of vocational education is further limited by the difficulties of classifying students as "vocational," the diversity of courses in different occupational areas, the unreliability of determining the relatedness of jobs to training areas, and the lack of information about benefits students may derive from occupational training other than direct placement. The difficulty increases when the effects to be studied are long term.

Longitudinal surveys, which follow students over time, are costly and time consuming. For this reason, few if any states conduct this type of follow-up, but several national studies have been done. Findings from these national studies strongly suggest that the long-term effects of vocational education differ in some important aspects from short-term effects.

Short Term Effects of Vocational Education

In general, national studies of short term effects have shown several immediate positive benefits of vocational education. These programs aid the transition from high school to work and result in certain labor market advantages in the first few years after high school. These advantages include higher initial earnings, greater job satisfaction, and readier employment. However, some writers have contended that while vocational training may indeed lead to positive short-term advantages, it limits longer term opportunities by tracking young people into low-status, low-paying jobs with few chances for advancement. Such long-term effects of vocational education are discussed in the next section.

The most recent Accountability Report issued by the State OVE[1] showed that among 1983 completers and leavers of vocational programs, 67 percent were pursuing additional education, slightly less than 2 percent had joined the military, and about 31 percent were available for placement in a job. Of those available for placement (total of 31%), 7 percent were working in jobs related to their training area, 10 percent were working in unrelated areas, and 13 percent were unemployed (either seeking or not seeking work). These figures are fairly well in line with a national study[2] which found that in 1980, over 70 percent of all vocational graduates had found related employment or were continuing their education, and that 18 percent were employed in other areas or in the military.

Long Term Effects of Vocational Education

A number of national education studies have examined the long term benefits of vocational education. All of these studies surveyed vocational students 5-15 years after graduation, involved over a thousand graduates, included matched comparison groups of graduates of general curricula, and looked at a variety of outcomes. The findings of these studies can be summarized in five major categories: employment, earnings, pursuit of further education, studen perceptions, and other effects. The research limitations and difficulties discussed above (see page 27) must be kept in mind, however, when reviewing and drawing conclusions from these findings.

Employment: Labor supply and demand, type of program completed, economic conditions, local availability of work, and individual attributes such as academic aptitude, race, sex, work attitudes, and age all affect the employment outcomes of vocational graduates. Given these sources of influence, several longitudinal studies[2,3,4] have found that:

* Vocational graduates are successfully placed. In 1980, over 70% of all vocational completers had found related employment or were continuing their education.

* Vocational graduates experience lower unemployment rates. The unemployment rate among vocational graduates has been found to be 6% lower than the general population in this age group, and lower than the rate for general curriculum graduates.

* Vocational graduates use the skills they learned in high school. About 60% of the graduates reported using their vocational skills a fair amount or a great deal. There was even greater use of skills if they had gone on to a post-secondary vocational or technical program.

* Vocational graduates, in general, are employed in occupations related to their training specialty.

* Some vocational programs lead to more training-related employment than others. Women in Business/Office programs and men in Trades/Industrial programs are more likely than other vocational graduates to find training-related employment in their first jobs.

* Placement assistance is an important factor. Obtaining training-related employment is directly related to whether or not a student receives placement assistance and training in job search skills.

* Fewer vocational graduates are self-employed than graduates of a general curriculum.

* Vocational graduates are not necessarily in low status jobs. Job status is more dependent upon the type of program completed, sex, and whether or not the person completed postsecondary training.

Earnings: National studies have produced mixed results for earnings. Some show no significant differences in earnings between vocational and non-vocational graduates. One study[5] showed vocational graduates had earnings 13 percent higher than those of non-vocational students, and a study of vocationally trained military veterans[6] showed that those who used their vocational preparation received significant benefits in long-term earnings. However, another study[3] found the reverse: vocational and general curriculum graduates earned about the same wages on their first jobs, but over time, male and female vocational graduates earned more than their general curriculum peers. Most longitudinal studies have shown that there are some long term

differences in earnings, but they are slight. Where long range differences do show up, they are usually program-specific. For example:

* Graduates of trade and industrial programs (both males and females), female graduates of business programs, and males who complete marketing programs earn more than other vocational graduates.

* Men tend to earn more than women, but this is true of the labor market in general.

* Higher earnings are more likely to be associated with the completion of additional training.

Further Education: At least one national study[7] has looked at the effect of vocational education in reducing high school dropout rates. The investigation found that vocational education tends to keep highly dropout-prone students in school between the 9th and 10th grades, and between the 11th and 12th grades. However, it does not have the same effect between the 10th and 11th grades -- the age (16 years) at which students are no longer required to attend school.

Do vocational graduates go on to postsecondary education? A 1982 study[8] found that former vocational students were found in a variety of educational programs beyond high school. Those who "concentrated" in a vocational program were more likely to be in postsecondary programs of two years or less than in four year colleges.

Student Perceptions: Students perceive vocational education as a positive part of their education and a valuable asset in their lives after graduation. Two recent longitudinal studies[3,9] have shown that:

* Most vocational graduates feel their preparation had been important in landing their first jobs.

* Vocational graduates view their education as more relevant in terms of job expectations than do graduates of general or college-prep curricula.

* Vocational students report greater satisfaction with their jobs than do graduates of other curricula.

* Business/Office, Marketing, and Trades/Industrial graduates are more satisfied with their preparation for the job search than general curriculum graduates.

* Vocational graduates are more likely than general curriculum graduates to say they would choose the same curriculum again, even after experiencing the job market for several years.

Other Benefits: In addition to demonstrating certain long range employment and earnings advantages, vocational education provides several other important benefits.[2] Primarily, it offers an alternative approach to learning: students can apply a range of classroom-acquired knowledge and skills in the performance of real life tasks.

Others contend that vocational education increases educational options, enriches a college-bound student's background, prepares people for high-tech postsecondary programs, helps students discover their talents and interests, gives graduates a wage-earning potential to support themselves in college, improves the academic grades of some students, and gives students who are not mature or sure enough for college the skills to get jobs and a sense of direction.

In terms of personal development, vocational education is believed to increase self-confidence and control because students acquire "hands-on" experience with the techniques and equipment used in actual work settings. Others feel vocational education teachs creative expression, integrity, social skills, leadership, and a more positive attitude toward school.

Factors That Affect Outcomes of Vocational Education

In the Council's Report #1 to the General Assembly, it was pointed out that "level of concentration" in a particular area is an important factor in evaluating the benefits of vocational education. A 1981 study of students with varying participation in secondary vocational education[8] showed that employment experiences depend upon how much training has been received. The findings showed that "concentrators" -- those who took six or more credits in an occupational area -- were more likely to be in training-related employment and to be working in conventional jobs. Female concentrators earned more than those who took no vocational courses. And Business/-Office graduates were more likely to be out of work voluntarily, while Trade/Industry graduates were more likely to be unemployed but looking for work.

An increasing number of national studies[10,11,12] are finding the same effect: the labor market experiences of vocational students are highly dependent upon the degree of concentration in a program area. This has been found to be true with regard to participation in the labor force, unemployment rates, weeks of unemployment, relatedness of work to training, and annual income. Undoubtedly, the degree of concentration in an occupational area is a reflection of the student's intention when enrolling in a program, and these factors (degree of concentration and student intention or self-selection) affect the outcomes of vocational education to a greater extent than is usually recognized.

Focus of the South Carolina Study

The preceding review has shown that the assessment of the impact of vocational education on students has traditionally placed heavy emphasis on placement of graduates. Yet these studies consistently demonstrate that placement is affected by many factors that are rarely considered. The point all of these studies have made is that the effects of vocational education must be measured in terms of which objectives, for what type of students, in what type of programs, over what period of time? Since South Carolina still focuses primarily on enrollment and placement data as the basis for assessing the impact of training on students, the survey reported below follows that general trend. However, in addition to basic placement information, the study addressed questions such as:

1. What are the relationships between student characteristics (race, sex, area of residence) and selection of programs, satisfaction with training, and placement status?
2. In what areas are former graduates working and how are these related to programs offered and labor trends?
3. How well do vocational graduates feel they were prepared in basic and job specific skills?
4. How do graduates perceive the quality of the training and guidance they received?
5. How transferable have skills learned in school been to their current jobs or course of study?
6. For what reasons are they unemployed?
7. Among those who are working, how much on-the-job training did they receive, and is this amount related to the type of program they completed?
8. Who or what was of most assistance in locating jobs?

To answer these questions, interviews were conducted with nearly 350 high school graduates who completed occupational vocational programs in 1982-83.

Methods Used in the Study

Since face-to-face interviews with former vocational graduates are costly, difficult to standardize, and even more difficult to schedule, a structured telephone interview was selected as the best alternative. Although interviews tend to be more

reliable and valid than mail questionnaires, they do have certain drawbacks: interviews are more expensive, the number of people who can be included is substantially limited by time and cost, and biases can occur in reaching certain groups. Despite these limitations, it was clear that interviews would still yield the most comprehensive information.

In using interviews to collect information, three elements were required to ensure the validity of the data:

1. application of random selection procedures to ensure the representativeness of the sample to be interviewed;

2. development of a structured interview format to ensure uniformity and reduce bias in collecting information; and

3. use of trained interviewers to avoid unconscious interjection of biased interpretations, "leading questions," and incorrect perceptions.

Since some of these requirements could not be met within the resources of the State Council, it was decided that Metromark Market Research, Inc. would conduct the actual interviews, using their bank of telephones and trained interviewers. This Columbia-based company has had considerable experience in conducting telephone interviews, some of which were in the field of education.

Sample of Students

The study was restricted to "non-returning" (graduated or otherwise left school) students who had completed occupational vocational courses in school year 1982-83. The selection of this particular group offered a balance between completers who had been out of school long enough to achieve some employment stability, but whose contact information was still relatively accurate.

After obtaining the necessary permission to release student information, the State Office of Vocational Education generated a computer list of each completer's name, address, phone number, and course area from its VEDS (Vocational Education Data System) data file. Information was available on completers for only one half of the state (50% of all counties, on a random basis). The master list, which contained over 6500 names in alphabetical order, was the sole source of information for contacting former graduates.

In designing the study, the sample size could only be estimated. Considering the funds available to conduct the study, the length of the interview, and the difficulty in locating respondents in this age group, Metromark initially estimated that about 250 interviews could be completed. This number was increased substantially through item revisions and efficiency measures instituted by Metromark.

Conduct of the Interviews

Council staff and consultants developed the interview items and arranged the item sequencing. Since a different series of questions was be asked depending upon the person's status (employed, in school, etc.), a number of "branching" sequences were developed. The items were pre-tested by Metromark on a sample of 28 former graduates, and revisions and refinements were made.

In late May, a training session was held by Metromark with approximately 14 interviewers and supervisors to orient them to the interview form, particulary the branching sequences. The interviewers represented a good cross-section by sex, age, race, and background; all had previous experience with similar surveys.

From the VEDS-generated master list, 200 pages (10 names per page) were randomly selected and distributed to the telephone interviewers. Each interviewer started at the top of a page and telephoned each person in succession. The following rules were observed:

IF:	THEN:
Phone number absent or incorrect	Attempt to obtain correct number
Busy signal or no answer	Repeat call later (up to 3 times)
Phone disconnected	Note and proceed
Person unavailable	Obtain call-back information (if possible) and repeat call
Person in military	Note and proceed
Person reached	Conduct interview

Of the 2000 names initially drawn, 1921 were actually considered during the time allotted for the interview sessions. Of these, 259 (13%) had missing or incomplete telephone numbers, so no contact could be attempted. A breakdown of the total number of attempted contacts and their disposition is contained in Appendix C. Of the 1662 attempted contacts, 344 (21%) resulted in complete, valid interviews. As Appendix C indicates, a tremendous effort was made to contact former graduates and ensure a representative sample.

All calls and interviews were completed between May 30 and June 2, usually during early evening hours (one session was conducted on a Saturday afternoon). Along with Metromark's supervisors, Council staff randomly monitored the interviews as they were being conducted. Interviewers who might have misunderstood an item or a response were immediately coached. Each form was edited immediately after an interview to ensure completeness. All forms were then turned over to the State Council for analysis.

In general, the interviews went smoothly, and were completed in a shorter period of time than had been estimated. The average length of each interview was seven minutes. Due to its length, the interview form is not appended to this report; it can be obtained from the State Council office.

Limitations of the Study

Before discussing the results of the study, it is well to keep in mind its scope and limitations. The interviews were conducted with non-returning vocational "completers" -- those who dropped out, transferred, or otherwise left before completing a course were necessarily excluded. The study did not address completers of non-occupational courses, since this was beyond the scope of the study. Also, the study was restricted to occupational completers in 1982-83; the findings may or may not be comparable to those that would be obtained from an earlier or later group of former students. Also, the contact sheets were compiled from VEDS records, which do not distinguish between those who completed a sequence of courses in a given area, and those who took only one or two courses.

An obvious concern in a study such as this is the reliability of the findings: can they be generalized to the entire population of occupational completers? Since previous state-wide follow-up studies have used different sampling and survey methods, there are no benchmarks for determining the consistency of findings. Up until this year, follow-up (or "placement") studies conducted by the State Office of Vocational Education (OVE) involved mail questionnaires with a 50 percent sample of completers and leavers of occupational programs, with a return rate of about 30 percent. This resulted in a net sample of about 15 percent. In 1984, the State OVE instituted a teacher-based follow-up reporting system in which school staff are responsible for indicating the status of all of the previous year's occupational completers. The findings reported here are based on telephone interviews with about a 10 percent sample of occupational completers.

For the interested reader, Appendix D contains a comparison of the results obtained using these three different methods, and the advantages and drawbacks of each. It is sufficient to say here that the results obtained through interviews closely parallel those obtained from teacher reports. Both differ from mail survey results. Factors such as the accessibility of certain groups of students, the mode of communication (written versus oral), the time lapse between graduation and follow-up, and the source of information (students versus staff) undoubtedly affect response rates, results, and the comparability of findings. The fact that the results of this study closely match those of teacher reports adds validity and reliability to the findings.

Representativeness of the Sample

Of the 3,950 students who completed occupational vocational courses in 1982-83, nearly 10 percent were interviewed. A comparison of the distribution of all 1982-83 completers and those students who participated in the study is shown in Table 12. The source of information for total completions (first column) was the VEDS. However, the area in which students in the sample had taken occupational courses was determined by asking the respondents themselves.

Table 12: Distribution of Students Surveyed by Program, Race and Sex

	All 1982-83 Completers (N=3950)	Total Sample (N=344)	Males (N=157)	Females (N=187)	Non-White (N=181)	White (N=163)
Agriculture	10%	8%	17%	1%	9%	7%
Marketing/Distribution	12%	6%	1%	10%	9%	3%
Health Occupations	3%	4%	--	7%	4%	4%
Occup. Home Economics	3%	6%	1%	11%	9%	3%
Business Education	38%	30%	6%	50%	26%	34%
Trade/Industry	34%	46%	75%	21%	43%	49%

Compared to total occupational completions in 1982-83, the sample of students interviewed was roughly representative. The survey sample was slightly over-represented by those who had completed Trade/Industry courses; those who had completed Marketing/Distribution and Business Education were somewhat under-represented.

Of the 344 respondents, 46 percent were male (54% were female), and 47 percent were white (53% were non-white -- all but 3 were black). These percentages do not vary substantially from the 1982-83 VEDS completer report.

Among the former students interviewed, 47 percent had taken their courses at a high school; the remainder had received their training at a vocational center. The majority of those who had completed courses in Agriculture (96%), Business Education (70%), and Marketing/Distribution (67%) had taken their instruction at a high school. The majority of respondents in Trade/Industry (73%), Occupational Home Economics (81%), and Health Occupations (71%) had taken their courses at a vocational center.

Status of Students Surveyed

The self-reported status of students who were contacted is shown in Table 13. It should be noted that although 34 former students (9% of the sample) were determined to be in the military, all were unavailable for interviews, and therefore are excluded from all analyses of interview items.

Table 13: Self-Reported Status of Students Surveyed

	Total Sample (N=378)	Males (N=187)	Females (N=191)	Non-White (N=181)	White (N=163)
Working full time	45%	57%	34%	40%	60%
Working part time	6%	4%	7%	5%	8%
Working while in college	8%	6%	9%	7%	10%
Continuing education	15%	7%	24%	23%	10%
Unemployed, not in college	17%	10%	25%	25%	12%
In Military	9%	16%	2%	**	**

** Data not available on race of those currently in the military
Due to rounding, totals may not equal 100 percent

Of the 378 former students who were contacted, 221 (59%) said they were currently employed full or part time. Of the 29 people who were working while in college, 17 were employed for the summer break only, and 12 were working in regular part time jobs to support themselves while attending college. Another 58 former students (15%) were in college, but not currently working. Sixty five (17%) of those contacted said they were neither employed nor in school.

Males reported higher rates of full time employment and military service than did females, while a higher proportion of females were in college or unemployed. Non-white graduates reported higher rates of unemployment and college attendance, and lower rates of employment, than did white respondents.

Differences across occupational groups with regard to the status of former students two years after completion is shown in Table 14. Again, for the purpose of status comparisons only, former students who are now in the military (but who were not interviewed) are included.

Table 14: Status of Former Students by Area of Occupational Training

	N	Employ Full	Employ Part	Employ/ College	College Only	Unemploy	In Military
Agriculture	30	57%	3%	10%	7%	17%	7%
Business Education	111	31%	9%	14%	27%	13%	7%
Marketing/Distrib	22	23%	5%	9%	27%	32%	5%
Health Occupations	14	29%	-	14%	29%	29%	-
Occup Home Economics*	21	48%	5%	-	10%	38%	-
Trade/Industry**	180	56%	5%	4%	8%	15%	13%
OVERALL	**378**	**45%**	**6%**	**8%**	**15%**	**17%**	**9%**

* Includes Food Services (12), Child Care (7), and Instit. Management (2)
** Includes Construction Trades (50), Cosmetology (9), Precision Production (60), and Mechanics & Repairers (61)

Due to rounding, totals (across) may not equal 100 percent

The highest rates of employment (full and part time) were reported by former students who had completed courses in Agriculture, Trade/Industry, and Occupational Home Economics. A significant proportion of respondents who had taken Business Education, Marketing/Distribution, and Health Occupations were continuing their education.

The highest unemployment rates were found among former students who had completed Occupational Home Economics, Marketing/Distribution, and Health Occupations courses -- service occupation areas that also have high turnover or employment separation rates. A further analysis of Home Economics showed that the relatively high unemployment rate was due largely to a number of former students who had taken food services courses. In Trade/Industry, the unemployment rate was due largely to a number of former students who had completed precision production (especially industrial sewing) and cosmetology courses. Specific reasons for unemployment are discussed in a later section.

These findings suggest that some programs (Agriculture, Occupational Home Economics, and Trade/Industry) may be more "job preparatory" than others. Programs such as Business Education, Marketing/Distribution, and Health Occupations appear to have a more dual function: preparing students for both immediate employment and further education and training.

Full Time Employment

Of the 344 former students who were actually interviewed, 221 (or 64%) said they were currently employed. Of these, 170 (77% of all employed) reported working full time. The following subsections report the findings from a series of questions asked only of this group.

Types of Work: Full time employed respondents were asked to describe briefly their current jobs. Responses were then classified into eight major occupational groups. The eight groups roughly parallel those used by the Employment Security Commission (ESC) to classify state-wide employment.

Table 15 compares the reported occupations of the interview respondents with total state employment in 1980 (the most recent year for which data are available). The sample group is further divided by race and sex. For the purposes of the study, "skilled labor" included trade and craft jobs (construction, mechanics, precision work); "unskilled labor" included driving, digging, loading, etc.; "service" included those employed as child care workers, cooks, waitresses, hairdressers, nursing aides, etc.; and "plant production" included jobs such as assembly, sewing, packing, and inspecting. The ESC category of "professional and technical" (e.g, doctors, lawyers, engineers, etc.) was omitted because no respondents were classified into this group.

Table 15: Type of Work Reported by Survey Respondents Who Were Employed Full Time

	State Employ (1980)*	Total Sample (N=169)	Males (N=105)	Females (N=64)	Non-White (N=72)	White (N=97)
Skilled labor (c[illegible])	13%	32%	49%	5%	19%	41%
Plant production	21%	19%	17%	22%	19%	19%
Secretarial/office	16%	11%	1%	28%	8%	13%
Unskilled labor	8%	12%	19%	2%	18%	8%
Service	15%	11%	4%	22%	17%	6%
Sales/clerk/cashier	5%	9%	2%	20%	11%	7%
Managerial/self emp	8%	4%	5%	2%	1%	5%
Farming/landscaping	1%	2%	4%	-	6%	-

* Source: S.C. Employment Security Commission, Labor Market Information, 1985

According to these results, a much higher percentage of survey respondents were working full time in skilled labor occupations than would be expected on the basis of state-wide employment. This suggests that occupational vocational education, particularly Trade/Industry programs, is making a substantial contribution to the state's skilled labor force. Similar but slighter trends also can be seen in the categories of unskilled labor and sales. The opposite was found with regard to secretarial/office work and service occupations: compared to state-wide employment, former students were under-represented in these categories. The differences, however, are small and may be insignificant if a larger sample were drawn.

Nearly half of the full time employed males reported working in skilled labor jobs. A larger proportion of females than males were working full time in secretarial, service, and sales jobs; a much smaller percent were employed in skilled and unskilled labor occupations. A larger percent of non-white than white respondents were employed in unskilled labor and service occupations; a much smaller proportion were in skilled labor jobs. All of the survey respondents who reported full time employment in farming, landscaping, or agribusiness were black males.

For the most part, full time employed graduates tended to be working in areas that matched their area of training. Trade/Industry completers tended to be working in skilled, unskilled, and plant production jobs. Respondents who had completed Business Education courses were working primarily in secretarial and sales clerk positions. The majority of those who had completed Occupational Home Economics courses were employed in service-oriented jobs.

The exception to this pattern were students who had completed Agriculture courses. Although some of these former students reported their current jobs as "related" to their training, none of them were actually working in farming or agribusiness jobs. The employment pattern for respondents who had completed Agriculture courses was similar to that of Trade/Industry completers (i.e., skilled, unskilled, and plant production jobs). Those who <u>were</u> working in agriculture-related jobs reported taking Trade/Industry courses. Also, of the four interviewees who had completed Health Occupations courses and who were now employed full time, only one was functioning in a training-related job.

<u>Relatedness of Work to Training:</u> Respondents who reported being employed full time were asked how related their current work was to the area in which they had received occupational training in high school. Of the 169 people questioned, 103 (61%) said their current job was either "somewhat" or "very" related to the occupational courses they had taken. Overall then, about 30 percent of all former students contacted (103 out of 378) were working full time in "training-related employment."

The remaining 66 people (39% of those employed full time) said their current jobs were "not at all" related to their high school vocational courses. The highest rates of unrelated employment were in Trade/Industry (47% of full time employed respondents who had completed courses in this area), Health Occupations (2 out of 4 respondents), and Agriculture (31% of completers now working full time). However, although these 66 former students reported their jobs as being unrelated, some of them were using skills learned in their high school vocational classes.

Role of Training in Getting Jobs: Respondents who reported working in jobs that were somewhat or very related were asked if their vocational training had helped in obtaining their current jobs. Of the 103 people who responded to this question, 66 (64%) said the occupational training they had received helped "definitely" or "somewhat" in getting the job. The remaining 36 percent said vocational training had not played a role; the majority of them (25 out of 37) had completed Trade/Industry courses.

Similarity of Equipment and Procedures: Graduates who reported working in a related area were also asked to rate the similarity between the equipment and machines they had been taught to use in their high school vocational courses and what they were using in their current jobs. Another item asked them to make a similar comparison regarding how they had been taught to do things. Responses to these questions are shown in Table 16.

Table 16: Reported Similarities Between Occupational Training and Current Jobs

	Equipment/ Machines		Techniques/ Procedures	
	N	%	N	%
Very Similar	38	37%	42	41%
Somewhat Similar	46	45%	53	51%
Not At All Similar	19	17%	8	8%

About 40 percent of those in related employment said that both the equipment on which they had been trained and the procedures they had been taught to use were "very similar" to what they experienced in their jobs. About one half of the respondents said equipment and procedures were "somewhat" similar. When these responses were

analyzed across the six occupational programs, the only areas in which a number of respondents said the equipment used in vocational courses and on the job was not similar were Business Education (6 out of 25 respondents) and Trade/Industry (10 out of 53 respondents), largely construction trades and precision production completers.

Use of Vocational Skills: The same group of respondents (employed full time in related jobs) was asked how much they were using the occupational skills taught in high school in their current jobs. Of the 102 students who responded to this question, one half said they were using their vocational skills "very much" and another 43 percent said their skills were being used "to some extent." Only seven people who were working in a related area said they currently were not using their vocational skills on the job.

Monthly Earnings: Using a combination of questions, it was possible to calculate the approximate monthly gross earnings of former graduates working in training-related jobs. The average monthly salary of the 102 respondents was $798. This compares favorably with the state's 1983 per capita income of $746 per month.(13) The table below shows the reported average monthly earnings for survey respondents across occupational areas of training.

Table 17: Reported Monthly Earnings of Those in Training-Related Employment, by Area of Training

	N	Approx. Monthly Salary
Agriculture	11	$864
Business Education	24	644
Occup. Home Economics	8	481
Marketing/Distribution	4	650
Health Occupations	2	800
Trade/Industry	53	906

On the average, students who had completed Trade/Industry courses, and who were now in training-related jobs, reported earning the highest monthly salaries. This was followed closely by Agriculture completers, whose employment patterns tended to parallel those of students who had taken Trade/Industry courses. While only two Health Occupations completers were included in this group of respondents, both

reported monthly incomes around $800. According to these findings, students who had completed Occupational Home Economics were earning the lowest monthly salaries.

When these results were further analyzed, it was found that males reported monthly salaries that were significantly higher than those reported by females ($920 versus $623 for females). The average monthly salary for non-white respondents was $712, compared to $851 for white respondents. These results are in line with many other salary surveys that show females and non-whites earn lower salaries than white males, for a variety of reasons (e.g., types of jobs held, tenure in job, etc.).

Amount of On-the-Job Training Received: Respondents who were employed full time in training-related jobs were also asked to indicate the amount of on-the-job training (OJT) they had received when they were first employed in their current jobs. The responses of the 103 former graduates in this group are summarized in Table 18. For summary purposes, total amount of OJT was calculated by multiplying hours of OJT per week by the number of weeks in training, and clustering the products into four major ranges.

Table 18: Amount of On-the-Job Training Reported by Those in Training-Related Employment, by Area of Training

		AMOUNT OF OJT			
	N	None	40 hrs or less	41-160 hrs	More than 160 hrs
Agriculture	11	27%	36%	42%	9%
Business Education	25	24%	48%	24%	4%
Occup Home Economics	8	13%	63%	13%	13%
Marketing/Distribution	4	--	75%	--	25%
Health Occupations	2	--	50%	50%	--
Trade/Industry	53	36%	26%	21%	17%
Average		28%	38%	22%	13%

On the average, 66 percent of the respondents working full time in training-related areas required less than 40 hours of OJT when hired in their current jobs. Although it can be argued that previous job experience reduces the need for OJT, it will be seen later in this report that the majority of the respondents had held only one or two jobs since graduation. However, any previous job experience is a factor that must be kept in mind when reviewing these findings.

Employment in Unrelated Areas

Of the 169 former students who reported being employed full time at the time of the interview, 66 (39%) said their current job was not at all related to the area in which they had received occupational training in high school. When asked to indicate the reason for this, the majority of respondents (26 out of 66) said they "couldn't find a job in that field." Twenty two people (33%) reported they either "didn't want that type of work" or had "lost interest in the area." Better jobs or higher pay in other areas was cited by 18 percent of the respondents as the reason for not working in a job related to their area of vocational training, and four people (6%) said they lacked sufficient skill in the area. Because of small sub-group sizes, responses were not analyzed across occupational programs.

There were some sex and race differences regarding the reasons for being in jobs unrelated to areas of training. A higher percentage of females than males cited loss of interest in the area for which trained (40% versus 28% for males), and a lower percent of females said they couldn't find work in a related area (30% versus 43% of the males). Among non-white graduates surveyed, nearly half said they couldn't find a job in a related area, while only one in three of the white graduates cited this as a reason. Compared to non-whites, a higher proportion of white graduates were working in unrelated jobs because of loss of interest in their occupational area (40% versus 22% of the non-white respondents).

When these same 66 former students were asked if they had ever worked in a job related to their area of high school vocational training, 19 (or 29%) reported they had, at some time since graduation, worked in a related area. The remaining 47 people said they never held a training-related job - the majority were those who had lost interest in the field during or shortly after receiving their training.

Part Time Employment

Of the 221 former students who reported being employed at the time of the interview, 51 (23%) described their work as part time. Of these, 12 were also continuing their education on a full or part time basis (most were female completers of Business Education courses). Seventeen people described their employment as "summer work" while on break from college, and 22 held regular part time jobs but were not attending college.

All of the respondents who reported working part time were asked how much they were using their vocational skills in their current jobs. Since this question was also asked of those working full time in a related field, comparisons between these groups could be made.

Among the respondents working full time in a related area, 93 percent said they were using their vocational skills "a lot" or "some" in their current jobs. Among those who were working part time, 50 percent reported using their vocational skills some or a lot in their jobs. The difference between these two groups is at least partly due to the nature and purpose of part time jobs (especially for those who are in college). What is surprising, however, is that a relatively high proportion (one half) of those employed in somewhat "transitory" jobs were using skills learned in their high school vocational classes.

Continuing Education

All former graduates who reported they were in school full or part time were asked to identify the type of school being attended. Of the 87 respondents in this group, 48 (or 55%) reported being enrolled in a four-year college, and 34 (39%) were taking courses at a community or technical college. The remaining 6 percent were enrolled in another type of institution (company training program or short term training).

Students who had completed Agriculture, Marketing/Distribution, and Business Education courses were attending both technical and four-year colleges. The majority of those who had completed Trade/Industry courses were attending technical colleges, while those who had taken Health Occupations courses were predominantly attending four-year colleges.

Students enrolled in a postsecondary institution were also asked about their major area of study. This information was then used to judge the relatedness of college studies to vocational courses taken in high school. For 48 of the 87 respondents (55%), the postsecondary course of study was judged to be somewhat or very related to the area in which they had received high school vocational training. The remainder of those continuing their education (45%) were taking courses or had declared a major in an unrelated field. Of the 48 respondents who were continuing in a related field, the highest percent had completed Business Education courses (77%). Among the 39 who were continuing their education in an unrelated field, the highest percentage had taken Trade/Industry courses (39%).

When asked how useful their high school vocational training was in their current course of postsecondary study, 70 percent (61 respondents) said it was of "some" or "a lot" of help. These respondents tended to come from Business Education (80% of this group) or Trade/Industry (62% of this group). The remaining 26 respondents said their vocational training was of little or no help in their current studies. Most of these respondents had completed Marketing/Distribution courses. It is interesting to

note that while 55 percent of the respondents were continuing their education in a related field, a larger proportion (70%) found their vocational training helpful in their studies. This suggests that students gain some knowledge and skills from vocational courses that are beneficial to them whether they continue in a related field, or switch to a different one. In fact, 18 of those who said their vocational training was of some or a lot of help in their postsecondary course of study were continuing their education in an unrelated area.

Unemployment

Of the 344 former students included in the study, 64 (19%) were neither employed nor attending postsecondary schools. These respondents were asked why they were not working at the time of the interview. In order of frequency, the responses included: unable to find work (38%); currently not seeking work (26%); temporarily out of work due to pregnancy, work-school transition, poor health, or transportation problems (22%); and laid off from job (14%). Thus, only about 10 percent of all those contacted in the study were unemployed but seeking work. This compares with the overall state unemployment rate of 10 percent.

Analysis of reasons for unemployment across occupational areas showed that "inability to find a job" was most prevalent among respondents who had completed courses in Business Education (5 out of 14 unemployed) and Trade/Industry. Within Trade/-Industry, inability to find a job was the reason given most often by those who had completed courses in food services (4 out of the 6 unemployed) and construction trades (3 out of 5 unemployed). Of the 14 people who were temporarily out of work -- usually due to pregnancy -- eight had completed courses in Business Education or Trade/Industry (mostly industrial sewing). The majority of those who said they had been laid off had taken courses in Agriculture or Trade/Industry (industrial sewing).

Among non-white respondents, the most often cited reason for being unemployed was inability to find work (44% versus 21% of white respondents). The main reason given by white respondents was that they were temporarily out of work, but planned to return (32%). There were few sex differences with regard to reasons for unemployment: six females (but no males) were unemployed because of family responsibilities, and more men than women were "in transition." All nine of those who reported being laid off were residents of rural cities or towns, where plant closings and layoffs have been most prevalent.

Evaluation of Vocational Courses

All of those interviewed were asked to rate the vocational courses they had taken in high school on eight evaluative dimensions. Respondents were asked to give

a "grade" (A,B,C, etc.) to each of the following aspects of their vocational experience: Quality of Instruction, Availability of Equipment/Tools/Machines, Teacher Interest in Students, Career Guidance and Counseling, Teachers' Knowledge of the Field, Condition of Machines/Equipment, Assistance in Finding a Job, and Special Services for the Handicapped and Disadvantaged. The "report card" below shows the average ratings given by former students on each of these dimensions. For statistical purposes, assigned grades were converted to a numerical scale (A=4, B=3, etc.).

Teacher Knowledge (N=344)	3.7	Equipment Condition (N=341)	3.2
Teacher Interest (N=344)	3.6	Guidance/Counseling (N=340)	3.1
Quality of Instruction (N=342)	3.3	Job Assistance (N=331)	2.4
Equipment Availability (N=342)	3.3	Special Services (N=286)	2.3

Overall, occupational courses received high ratings from former students -- about a "B" when all areas were considered. The areas receiving the highest ratings were those involving teaching staff: knowledge of their field and their interest in students. Former students were least satisfied with special services (remediation, support) and with the assistance they had received in locating a job.

A comparison of ratings across occupational programs revealed few differences. The exception was Occupational Home Economics (food services and child care). Students who had completed courses in this program tended to give the lowest ratings on nearly all dimensions, but the differences were slight and the subgroup size was relatively small.

When evaluative ratings were compared across status groups (e.g., employed, in school, unemployed, etc.), some differences emerged. Compared to respondents who were either employed or in college, unemployed graduates tended to give consistently lower ratings on all eight dimensions. While there were no significant differences overall between males and females, or between non-white and white respondents, some differences emerged when each dimension was examined separately.

Detailed Analysis of Evaluative Dimensions

When using rating scales of the type included in this study (i.e., Likert-type), two factors must be considered: 1) calculation of "average" ratings can obscure important differences in the distribution of individual ratings, and 2) most people have a positive response bias -- they tend to be freer with praise than with

criticism -- making minority negative responses all the more meaningful. Therefore, the following analyses focus on relative differences between occupational programs, and between race, sex, and status groups within each dimension.

Also, emphasis is placed on unsatisfactory ("D" or "F") ratings, since these point out areas that might need improvement. Although a grade of "C" is usually considered "satisfactory," it can be significant in the context of generally positive responses. Thus, the proportion of "C" ratings given will be pointed out when noteworthy. It is important to remember that detailed findings should not overshadow the overall high ratings given on nearly all dimensions.

Quality of Instruction: Of all 342 respondents who rated quality of instruction, only three (1%) were dissatisfied (gave it a "D" or "F" grade). However, 24 percent of those surveyed who had completed Marketing/Distribution courses, and 19 percent of those who had taken Occupational Home Economics gave quality of instruction a "C". Those who had taken Business Education courses were the most satisfied -- 98 percent of the respondents gave an "A" or "B" grade on this dimension. Although there were no appreciable differences between race, sex, or status groups, a higher percent of black respondents and those who were unemployed gave quality of instruction at "C".

Availability of Equipment: Only 11 out of 342 respondents gave an unsatisfactory grade ("D" or "F") to availability of equipment. In two occupational areas, a relatively high percent of respondents gave this dimension a "C": Health Occupations (29%) and Home Economics (19%), particularly those who had taken food service courses. There were no differences between race, sex, or status groups, but again, higher percentages of respondents who were black or who were unemployed gave "C" ratings.

Teacher Interest: This dimension received very high overall ratings. Across all six occupational areas, between 90 percent and 100 percent of the respondents gave teacher interest an "A" or "B" rating. A much higher percent of those who were unemployed gave a "C" on this dimension than did respondents who were employed or in college at the time of the interview.

Guidance and Counseling: Across all programs, 4 percent of the respondents (16 people) gave guidance and counseling an unsatisfactory grade of "D" or "F". A relatively high percent of students who had taken Business Education (24%) and Trade/Industry (18%) courses gave this dimension a "C". Analysis of ratings by status showed that unemployed respondents were less satisfied than those who were

working or in college -- 12 percent of the unemployed gave guidance and counseling a "D" or "F" grade. Also, those who were in college tended to give this dimension a "C" more frequently (24%) than did those who were working (15%). There were no significant race or sex differences.

Teacher Knowledge: The area of teacher knowledge received the highest overall ratings from former students. Between 86 percent and 100 percent of the respondents who had taken occupational courses gave teacher knowledge a grade of "A" or "B". Again, a higher proportion of black respondents and those in the unemployed status category gave this dimension a "C" than did whites or those who were employed or in college. There were no sex differences in ratings given on this dimension.

Condition of Equipment: Only 3 percent of all respondents were dissatisfied with the condition of the equipment or machinery on which they had been trained and rated it a "D" or "F". However, 23 percent of those who had taken Business Education courses, and 21 percent of those who had completed Agriculture courses gave condition of equipment a "C". Students who had taken Health Occupations and Trade/Industry courses were most satisfied -- 93 percent and 85 percent, respectively, gave the condition of equipment an "A" or "B" grade. Females, blacks, and the unemployed tended to give slightly lower ratings (proportionately more "C" grades) than did males, whites, and those who were employed at the time of the interviews. It should be noted, however, that sex and race differences are confounded by the fact that females are over-represented in some occupational programs, and that females and blacks had higher unemployment rates.

Job Assistance: Relative to the other dimensions, job assistance received some of the lowest overall ratings: 24 percent of the respondents gave it a "D" or "F" rating. Analysis across programs revealed some differences on this dimension. Among students who had completed Agriculture courses, 43 percent gave job assistance an unsatisfactory grade, compared to 26 percent of those who had taken Business Education and 22 percent of those who had completed Trade/Industry courses. This finding could reflect on the availability of job placement coordinators. Specific job placement staff are usually less available in high schools, where most Agriculture courses are taken. Within Trade/Industry, respondents who were least satisfied were those who had completed mechanics-repairers and precision production courses. Among those who had taken Health Occupations or Occupational Home Economics courses, 14 percent gave job assistance an unsatisfactory grade of "D" or "F". A higher percentage of

those who were unemployed (32%) gave job assistance a failing grade than did those who were employed (21%) or in college (24%). There were no race differences, and only a slight tendency for males to be less satisfied than females.

Special Services: Across all programs, 21 percent of the 286 people who responded to this item gave special services a "D" or "F" grade. One half of all Agriculture completers were dissatisfied with special services, compared to about 14 percent of those in all other programs. This difference was statistically significant. About one in every four respondents in all six occupational areas gave a "C" on this dimension. Again, the lowest ratings were given by the unemployed -- 29 percent gave a grade of "D" or "F", compared to about 14 percent of those who were employed or in college. A higher percent of blacks and males (20% in each group)) gave "D" and "F" ratings than did whites (13%) or females (15%).

Basic Skills Preparation

All of those interviewed were asked how well they felt they had been prepared in basic skills such as reading, writing, and math. Overall, 98 percent of the 344 people interviewed said they felt "very well" or "somewhat" prepared in basic skills. From a statistical point of view, such a response pattern can indicate that respondents perceived their preparation in a dichotomous fashion, rather than on a continuous scale. That is, they perceived themselves as either adequately ("very well") or insufficiently ("somewhat") prepared. If this was the case, a more relevant way of examining the findings is to compare the percent of students who felt "very well" prepared with those who felt "somewhat" prepared. Table 19 shows this comparison across occupational program areas.

Table 19: Reported Basic Skills Preparation

		LEVEL OF PREPARATION		
	N	Very Well	Somewhat	Poorly
Agriculture	28	54%	46%	--
Business Education	103	76%	23%	1%
Health Occupations	14	64%	36%	--
Occup Home Economics	21	71%	29%	--
Marketing/Distribution	21	67%	29%	5%
Trade/Industry	157	62%	36%	2%
	344			

Among those who had taken Agriculture courses, about one out of every two students felt insufficiently prepared. About one out of every three students who had taken Health Occupations, Marketing/Distribution, and Trade/Industry courses said they were "somewhat" prepared in basic skills. Among students who had taken Business Education and Occupational Home Economics courses, only one in four felt insufficiently prepared in basic skills. However, care must be taken in interpreting results from small groups (an "N" of less than 25). For example, while 5 percent of the Marketing/Distribution completers reported being "poorly" prepared in basic skills, this actually represents only one person.

Also, it is important to remember that these results do not necessarily reflect the ability of various occupational programs to impart basic skills. Rather, these findings may indicate the basic academic preparation level of students who elect to take courses in various occupational programs. For example, among the respondents who were continuing their education (many of whom took Business Education courses), 76 percent said they were very well prepared in basic skills, compared to 64 percent of those who were working full or part time (a large proportion of which had taken Trade/Industry courses), and 61 percent of those who were unemployed.

Although there was no significant difference between white and non-white graduates regarding perceived basic skills preparation, there was a major difference between male and female respondents. Slightly more than 73 percent of the females who were interviewed felt they had been very well prepared in basic skills, compared to 58 percent of the males. Again, this correlates with the finding that a considerably higher percent of females than males were pursuing postsecondary education (24% versus 7% of the males).

Participation in Cooperative Education

Of the 344 former students who were interviewed, 62 (18%) said they had participated in a co-op (work-study) or apprenticeship program as part of their occupational training in high school. The largest proportion of them had taken courses in Trade/-Industry, Business Education, or Occupational Home Economics.

These 62 students were further asked how helpful their co-op experience had been in finding a job after graduation. Nearly half of them felt it had been very helpful, and another 29 percent said it had been somewhat helpful. The remainder said they either were unsure about the helpfulness of the co-op experience, or that it had been of no particular help in getting a job. The subgroup size was too small to determine if there were any differences across occupational programs with regard to the usefulness of co-op experiences.

Reported Sources of Job Assistance

When asked who or what had been most helpful in finding their first job after graduation, by far the largest proportion of respondents said their relatives or friends had been of most assistance. Much smaller numbers of former graduates reported that teachers, guidance and placement counselors, or "Job Service" had been helpful in finding their first job. About 11 percent of those interviewed said they either had found their first job with no assistance from others, already had a job at the time of graduation, or had been helped by "other" sources. Only 18 of the 344 former students who were interviewed said they had never had a job, and most of these respondents had taken Business Education courses and were currently in college.

Although reported sources of job assistance were virtually the same across all occupational programs, Table 20 reflects some sex and race differences. This table shows that females and non-white respondents tended to receive more assistance from teachers, guidance/placement personnel, and Job Service than did males and white respondents. Males and white students tended to receive assistance more often from relatives, friends, and employers. This may be due to tendencies of various groups to seek assistance from different sources.

Table 20: Reported Sources of Job Assistance

	Total Sample (N=344)	Males (N=157)	Females (N=187)	Non-White (N=181)	White (N=163)
Relatives/Friends	48%	55%	42%	39%	58%
Teachers	14%	12%	16%	17%	11%
Recruited by Employer	8%	11%	6%	6%	11%
Guidance/Placement	7%	5%	9%	11%	2%
Job Service	6%	5%	7%	8%	4%
Other	2%	3%	2%	2%	2%
No Assistance	8%	6%	10%	10%	7%
Already Had Job	1%	2%	1%	--	2%
Never Had Job	5%	1%	8%	8%	2%

Due to rounding, totals may not equal 100 percent

Job History

Only 18 of 344 people interviewed (5%) said they had not worked at all since graduation in 1983. Of these, 15 were black females. Of those who had worked, 122 (35% of all those interviewed) said they had held only one job in the two years since graduation, and 117 (34% of those interviewed) had held two different jobs. Of those remaining, 71 (20%) had worked in three or more jobs over the past few years, and 16 (5%) had worked in five or more different jobs since graduation. This finding suggests that high school graduates may not be as erratic in their first few years of employment as initially expected. Among those who had worked, nearly 70 percent had held only one or two jobs since graduation.

Non-white (predominantly black) former students had a slightly more stable job history than did white graduates. Among black respondents, 72 percent said they had held only one or two jobs since graduation, compared to 67 percent of the white respondents. There was also a slight difference between male and female respondents: 73 percent of the females reported having only one or two jobs since graduation, compared to 66 percent of the males.

Desire to Repeat Training

If graduates were to start over in high school, would they take training in the same vocational field? Of the 344 students who responded to this question, 71 percent said "yes", 3 percent said "maybe," and 25 percent said they would not take training in the same occupational area. A few people weren't sure if they would or not. The occupational area in which the highest percentage of students said they would definitely repeat the same training was Business Education (84%). The occupational areas in which the highest percentages of students indicated they would not repeat the same courses were in Health Occupations (36%), Occupational Home Economics (33%), and Marketing/Distribution (38% would not repeat). Compared to 22 percent of those working full time, about 38 percent of those who were unemployed, and 32 percent of those working part time said they would not repeat the same training if they could start all over again.

A slightly larger percent of white respondents said they would definitely repeat their training than did blacks (75% versus 66%). Also, a slightly higher percent of females than males indicated they would take courses in the same occupational area if they were to do it over again (74% of females versus 67% of the males).

The 86 respondents who said they would not repeat the same training were asked to give their reasons. Over one half (57%) said they had either changed their mind

about or lost interest in the area, or that they had developed an interest in another area. When another area was mentioned, it was most often "computers" or "business."

Thirteen people (15%) said that because of the scarcity of jobs in their area of training, they would not repeat the same courses if they could start over again. About 10 percent of the respondents to this question expressed dissatisfaction with either the breadth or depth of the courses they had taken, and another 8 percent said the occupational courses had been "sort of a waste of time" because they were not using the skills they had learned. The remaining 9 percent gave other reasons for not wanting to take training in the same area: poor performance in the classes they took, the need for too much additional training in order to get a good job in that area, or health reasons.

These results suggest that lack of job opportunities is not a primary reason why people "drop out" of an occupational area. More often, they simply change their minds as they obtain experience and maturity. The findings also suggest that screening and counseling of students prior to entry into occupational programs might significantly reduce the "occupational dropout" rate of completers and result in higher training-related placement rates.

Conclusions and Recommendations

1. In general, placement rates (employment, in college, in military) are fairly high and former students gave their training very high ratings after being out of school for two years. Also, secondary occupational programs appear to be making a substantial contribution to the state's skilled labor force.

   RECOMMENDATION: The State Office of Vocational Education and local school systems are to be commended for achieving high overall levels of placement and student satisfaction in vocational programs.

2. Vocational programs appear to be serving many purposes: occupational training for employment after graduation, general or specific preparation for continued education, student personal interest, and as a way to explore one or more occupational areas. Thus, training-related employment alone is an insufficient criterion for judging the outcomes of occupational training. Graduates working in unrelated areas also reported using their vocational skills, a benefit that is overlooked when training-related placement is the sole criterion.

   RECOMMENDATION: The purposes and objectives of vocational education need to be carefully examined and explicitly stated. These purposes need to be tied to relevant outcome measures.

3. The study found a fairly high unemployment rate among students who had completed certain service programs (e.g., food services), even when these are among the fastest growing occupational areas.

   RECOMMENDATION: There is a need to further examine such factors as local opportunities for employment, wage rates, student intentions and expectations, and employment patterns as they affect placement rates in some occupational programs.

4. The employment pattern of students completing Agriculture courses parallels that of Trade/Industry completers.

   RECOMMENDATION: Further study is needed to determine if this employment pattern reflects a lack of job opportunities in agribusiness and/or the transferability of training from Agriculture to many Trade/Industry occupations. The objectives of Agriculture programs may need clarification.

5. Job-finding assistance is an element of vocational programs with which former students appear to be least satisfied.

   RECOMMENDATION: This requires further investigation to determine if the problem lies just in some areas of the state, or in some types of educational settings (e.g., comprehensive high schools). If vocational education is to be accountable for placement, there must be a greater commitment to providing students with job placement assistance, particularly in high schools.

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APPENDIX A

Description of High Schools That Participated in the Survey of Currently Enrolled Students

HIGH SCHOOL	Area of State	High School Enrollment	% Free/Red. Lunches*	% Non-white Enrollment*	Bus or Not
Garrett (Charleston County)	Coastal	1064	51%	55%	Yes
Walterboro (Colleton County)	Coastal	1633	67%	61%	Yes
Strom Thurmond (Edgefield County)	Midlands	1022	68%	66%	No
Chester (Chester County)	Upper	1344	54%	53%	No
Keenan (Richland #2)	Midlands	796	61%	71%	Yes
York (York #1)	Upper	955	47%	33%	No
Timmonsville (Florence #4)	Midlands	525	90%	80%	Yes
Lexington (Lexington #1)	Midlands	1920	19%	8%	No
Irmo (Lexington #5)	Midlands	2068**	8%	9%	No
Woodruff (Spartanburg #4)	Piedmont	550**	40%	25%	Yes
Conway (Horry County)	Coastal	1803	49%	32%	Yes
Orangeburg-Wilkinson (Orangeburg #5)	Midlands	2096	76%	77%	Yes
DISTRICT MEDIAN	----	--	55%	48%	--
SAMPLE MEDIAN	----	--	53%	54%	--

* Based on District-wide enrollments
** Grades 10-12 only
Sources: S.C. Department of Education: 1984-85 Directory of South Carolina Schools; Rankings of the Counties and School Districts of South Carolina (1984 Edition)

APPENDIX B

Survey Form for Currently Enrolled Students

Sex: ____Female ____Male

Race: ____Black ____White ____Other

Grade: ____11 ____12

1. Which of these non-vocational courses have you taken (or now enrolled in)?

____ Industrial Arts or Mechanical Drawing
____ Pre-vocational or Career Search
____ Personal Typing or Personal Notehand
____ Remedial English or Remedial Math
____ None of these

2. Put a check beside those vocational programs in which you have taken one or more courses (or now enrolled in):

____ Agriculture or Horticulture
____ Marketing or Distributive Education
____ Health Occupations or Practical Nursing
____ Occupational Home Economics (Food Service, Institutional Management)
____ Business Education or Office Occupations
____ Trade or Industry Area

3. How did you learn about vocational programs or courses?

____ printed materials
____ guidance counselor
____ parents or relatives
____ I don't know about these courses
____ information given out at school
____ friends
____ other (explain: _____)

4. How well do you think vocational programs prepare high school graduates for future employment?

____ very well
____ pretty well
____ not very well
____ not at all
____ don't know

5. What do you plan to do after graduation?

____ continue in present job
____ get a full or part time job
____ join the military
____ continue my education
____ stay home
____ other (please explain: _____)

(ON BACK OF FORM)

6. Who has HELPED MOST in deciding what to do after graduation? (check only ONE)

____ guidance or placement counselor
____ parents or relatives
____ friends
____ haven't decided yet
____ teachers
____ employer
____ other (please explain: _____)

7. What do you think is the MOST IMPORTANT thing to be taught in high school that will help students find and keep jobs in the future?

____ occupational skills
____ the importance of a college degree
____ good work habits and attitudes
____ basic ability to read, write, follow instructions
____ actual job experience (work while in school)
____ how to adapt to changes in the job or business
____ other things such as: _____

8. If you have NEVER taken a vocational course, why not?

____ don't need them
____ other requirements prevented me
____ quality of courses is poor
____ don't know about them
____ time conflicts with other courses
____ no interest in these courses
____ other reason (please explain: _____)

9. If you HAVE EVER taken (or are now enrolled in) any vocational courses, why did you do so?

____ occupational training for work
____ personal interest
____ friends were taking
____ less homework required
____ parent or counselor suggested
____ don't know

10. If you HAVE EVER taken (or are now enrolled in) any vocational courses, please rate them, in general, on these items: (If never taken, skip this item)

Excellent	Fair	Poor	
____	____	____	Quality of instruction
____	____	____	Condition of shops or labs
____	____	____	Availability of machines or equipment
____	____	____	Skill preparation for work
____	____	____	Teacher's knowledge of subject area

APPENDIX C

Disposition of Attempted Telephone Contacts With Former Vocational (Occupational) Graduates

	Number	Percent of Total
In military	34	2%
Unable to contact	655	39%
Unavailable	479	29%
Refused interview	15	1%
Person unverified	135	8%
Interviewed	344	21%
Total Contacts	1662	

KEY:
Unable to contact = no answer, disconnected, or number now unpublished
Unavailable = on vacation, away at school or work, unable to come to phone, moved but no new number
Person unverified = person answering phone unable to verify identity of desired contact person

APPENDIX D

Comparison of Reported Status of Former Vocational Graduates Using Three Different Survey Techniques

	Mail Survey (1983 Completers)	Telephone Interview (1983 Completers)	Teacher Report (1984 Completers)
Employed (Full/Part)	17%	51%	49%
Continuing Education	67%	23%	25%
In Military Service	2%	9%	6%
Unemployed	13%	17%	12%
Status Unknown	**	**	8%

** Indicates data not collected

Sources: mail survey data - see Reference No. 1; teacher report data - Special Report, Research Coordinating Unit, Office of Vocational Education

Discussion: If it can be assumed that the distribution of vocational completers is relatively stable from one year to the next, the differences in results obtained could be attributed to the differences in methods used. Mail surveys typically include a larger number people, but the response rate may be relatively low and there may be many biases with regard to who responds and who does not. Mail surveys are highly dependent upon item wording, length, ease of responding, and the tone of the cover letter to ensure a good response rate. The comparison above shows how bias can occur: those who were employed were vastly under-represented in the mail survey, while those in college were over-represented. This makes intuitive sense, given the written format of mail surveys. Telephone interviews usually involve a smaller sample, and some groups may be inaccessible (have no phone). Some response biases are avoided because of the oral nature of the questions, and the incentive to respond to the interviewer. Because telephone interviews are more personal, however, extremely negative responses may be avoided by respondents. But if sampling techniques are relatively random, telephone interviews can result in a more representative sample than mail surveys. Teacher-based reports are the most inclusive because virtually all completers are accounted for. The main source of bias in teacher-based reports, however, is that the information is "second-hand"; it relies on the perceptions and recollections of school staff, whose knowledge may be inaccurate and whose definitions of various status categories may vary considerably. Perhaps the best follow-up technique is a combination of teacher-based reports, substantiated with a periodic telephone survey of a smaller sample of completers.