

VARIABLES ASSOCIATED WITH COCURRICULAR PARTICIPATION
IN VOCATIONAL STUDENT ORGANIZATIONS

by

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(ABSTRACT)

Vocational Education, as a vital part of the secondary school curriculum, has relied upon student organizations as one activity that helps bolster and provide meaningful, practical, real life experiences within the classroom and the work place to secondary students.

It was the intent of this study to investigate which personal and academic variables most accurately explained the nature and magnitude of participation in such vocational student organizations (VSOs). Furthermore, the study explained the effects, both direct and indirect, of the independent variables as implied by a causal model on subsequent participation in VSOs during the senior year of high school. Independent variables investigated in the study were identified through a review of the literature and were as follows: ability scores, grade point average, hours worked per week for pay, sex, self-concept, race, socioeconomic status and sophomore (base) year participation.

The study was an ex post facto research design and utilized the 1980 sophomore cohort in the national

longitudinal study referred to as High School and Beyond. The analysis for this study utilized correlation, multiple linear regression and path analysis in determining the effects as implied by the causal model.

Findings indicated that: (a) base year VSO participation was the only variable that provided a substantial effect on senior year VSO participation, (b) base year participation was also found to be the variable which best explains the nature and magnitude of the respondents participation in VSOs and (c) the variables of self-concept, sex, race, socioeconomic status, and base year participation indirectly affected senior year participation when mediated by ability scores, hours worked per week and grade point average.

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Chapter 1

INTRODUCTION

The school system in America, unlike the European model after which it was patterned, has stressed extracurricular and cocurricular activities as a vital component of the total educational process (Graham, 1964). Specifically, secondary education in the United States has looked to student activities to fill a crucial portion of the curriculum. Cocurricular activities are so respected that Scheele (1983) referred to them as an "Invisible curriculum" within the American educational system. The chance to develop skills that cannot be learned in the classroom is the basis for providing this invisible curriculum to high school students.

Vocational education, as a vital part of the secondary school curriculum, has relied upon youth organizations as the student activity that helps bolster and provide meaningful, practical, real life experiences within the classroom and the work place. With more than 90% of all U.S. high school students taking at least one vocational course in their four year programs, opportunities abound for participation by most students in vocational student organizations (Gonzalez, 1985). Nationally, some 1.5 million students are members of the eight secondary level

vocational youth organizations that supplement the vocational curriculum i.e., Distributive Education Clubs of America (DECA), Future Business Leaders of America (FBLA), Future Farmers of America (FFA), Future Homemakers of America and Home Economics Related Occupations (FHA/HERO), Health Occupations Students of America (HOSA), Office Education Association (OEA), Technology Student Association (TSA), and the Vocational Industrial Clubs of America, (VICA) (C. Harris, personal communication, October 17, 1986). On the other hand, not all vocational education students are members of their respective vocational student organization.

Edward D. Miller, Chief Executive Officer of the FBLA and appointed by President Reagan to chair the National Advisory Council on Vocational Education in 1983, addressed the staff of The National Center for Research in Vocational Education on the role of student organizations in vocational education (Miller, 1983). Among his many comments related to vocational student organizations (VSO's), the most significant of those was:

Within the classroom and in the community or work place, VSO's not only stress but also put into practice those experiences that develop positive personal attitudes, develop an appreciation of work ethics, productivity and demonstrate the dignity of work. VSOs also give students the opportunity to become more active in their community, because they are encouraged to participate in work and educational situations outside the classroom. This early contact with the real world of business better prepares students to bridge the gap from classroom to the work

place. (p. 2)

Collins (1977), in a study that assessed the benefits of membership in vocational student organizations summarized nine student recommendations and foremost among those were, "That vocational student organizations should be promoted, emphasized and implemented by every vocational education discipline" (p. 79). With such access, vocational student organizations have provided students with the opportunity to act as educational ambassadors for the school and its administrators. Vocational students have represented their schools and activities in much the same way as their organizations have become an integral part of the secondary school curriculum.

The persistence of student activities in American secondary education rests upon a number of assumptions. Among those assumptions are the concepts that participation "rounds out" a student: i.e., it makes one a better citizen; students are exposed to opportunities for success, social growth, and the development of competence within a safe environment; activities provide experience in leadership roles and adult-like activities (Graham, 1964; Rehberg & Schafer, 1973; Yon, 1963). Additionally, cocurricular activities provide students the opportunity to learn how to work with people, something that cannot always be learned while listening to a lecture. Yet, in life, "people skills" are just as important as the ability to do

the job (Scheele, 1983). However, critics of these activities contend that participation in non-class student activities is encouraged at the expense of academic learning time, an argument which has become an issue in education. Decisions limiting or curtailing these activities are made on the assumption that they interfere with the primary purpose of education (Haensly, Lupkowski, & Edlund, 1986). If sound decisions are to be made regarding the balance between formal instruction and cocurricular activities, one must determine whether those activities enhance or hinder a student's learning. A step in examining that complex question must be to determine the nature and phenomenon of characteristics related to a student's participation in such cocurricular activities.

A number of studies have been conducted in the fields of cocurricular and extracurricular activities specific to secondary school students (Baly, 1984; Braddock, 1981; Elder, 1984/1985; Peterson, 1984; Smith, 1981; Spady, 1970; and Spady, 1971). Several of those studies have examined the role of race, sex, high school program, self concept, academic achievement, socioeconomic status, along with biographical and situational variables. These studies concluded that a student who participates in cocurricular activities can gain the following significant advantages: (a) opportunities for recognition, personal success, and broader experiences to complement a student's academic

achievement; (b) the chance to develop intellectual, social, cultural and physical talents to round out the academic educational experience; and (c) the opportunity to extend the boundaries of the classroom by acquiring direct experience with the content and worth of a subject--for example, when members of the Future Farmers Of America (FFA) study and present the rules of parliamentary procedure to a local civic organization. Additional research regarding the relationship among such variables as high school program (or academic track), academic achievement of student, benefits of participation and cocurricular participation have yielded conflicting results in the literature as well. The issue of school dropouts as a variable of interest should also be considered. Bell (1967) and Willey (1986) both found significant differences between high school dropouts and non-dropouts in the number of activities and leadership roles assumed. The lack of participation in school activities was a characteristic of the dropout, thus the ability to identify high school students early in the secondary school experience with such characteristics may help to minimize the possibility of the student dropping out of school during the ensuing years.

Psychologists have long recognized the importance of active participation in one's environment to foster individual competencies and self-confidence (Allport, 1945; Cronbach, 1963; Hall, Hord, Rutherford & Huling, 1984;

Hunt, 1969; Havighurst, 1972; and White, 1959). As intensive social institutions of learning, schools are regarded as crucial for fostering competence in socialization through effective student involvement (Bell, 1967; Cuccia, 1981; Crain, 1981; Smith, 1968). Schuh and Laverty (1983) and Otto (1975), have found that the number of activities in which a student participates has a direct impact on future aspirations and educational training. Generally, then, the assumption is made that cocurricular activities enhance the overall educational and social experiences of the student, and thus, contribute to the effectiveness of the high school.

Davis and Shingleton (1986), describe the model high school that the commonwealth of Virginia has adopted in its educational excellence movement. A team of planners noted that a balanced and vigorous curriculum would be attainable by incorporating three components into the plan, one of which would be a:

Diversified program of cocurricular activities in which students may participate with the idea that the development of each student, intellectually, socially, emotionally, and physically depends to a large extent on the opportunity to apply in a practical way the skills acquired in more formal educational settings.
(p. 96)

Parent and student opinions toward cocurricular activities were another indication of the importance by which student activities were viewed. In a National Association of Secondary School Principal's (NASSP) study,

reported by Long, Buser & Jackson, (1977), over half the students (56%) indicated that active participation in cocurricular activities was the characteristic most likely to establish status and acceptance among students. Likewise, the annual Gallup Poll (1984), on the status of education indicated 80% of the parents with children in public school believed that cocurricular activities were "very important" or "fairly important." Similarly, when adults were polled on what subjects or experiences in high school were of most use to them later in life, cocurricular activities ranked fourth among 10 items, exceeded only by English, mathematics and commercial courses. Finally, an American College Testing survey in 1977 cited by Elder (1984/1985), found that the most common characteristic of successful people in later life was that they were involved in cocurricular activities as high school students.

PURPOSE OF THE STUDY

The problem investigated in this study was to determine what biographical and demographical variables most accurately explain the nature and magnitude of participation in vocational student organizations. Specifically, the study analyzed variables related to high school students' level of participation in vocational student organizations and their subsequent participation as non-members, members, or leaders within these student organizations. The research was designed to include the

members of the 1980 High School & Beyond sophomore cohort which was classified into two student participation categories within vocational student organizations: (a) students who participated actively and (b) those who were non-participants. These same sophomores were then compared two years later, as seniors, in 1982, to determine the extent of participation in vocational student organizations either as: (a) those who were non-participants, (b) those who participated actively and (c) those who participated as leaders or as officers.

RESEARCH QUESTIONS

Specific questions to be answered by this study were as follows:

1. What were some of the academic, personal, and family background variables which descriptively profiled the 1980 High School and Beyond vocational education sophomore cohort?
2. What is the relationship between and among the variables that reflect participation of vocational high school sophomores in vocational student organizations and subsequent participation as members or leaders within vocational student organizations as seniors, two years later?
3. What is the nature and magnitude of the relationships between the independent variables identified in Chapter 2 and a measure of cocurricular participation in

the senior year of high school?

4. What are the direct and indirect effects of those identified independent variables as implied by a causal model of subsequent participation in vocational student organizations in the senior year?

GENERAL HYPOTHESIS STATEMENT

This study was guided by the following general hypothesis:

GH: Senior year VSO participation will have no statistically significant relationship with the sophomore cohort's sex, self-concept, race, socioeconomic status, sophomore year VSO participation, ability score, grade point average and hours worked per week.

IMPORTANCE OF THE STUDY

This study is an attempt to provide information that can be used to explain the nature or pattern of vocational student participation in VSOs based on student and transcript generated data. More specifically, this study should contribute to vocational education and equally important, the secondary school environment in three different ways.

First, this study would provide an assessment of vocational student organizations judged in terms of the secondary students' longitudinal self interest in pursuing some leadership experience within the organization as opposed to strictly continuing at the participation level of organizational involvement. This will produce valuable

feedback for educational planners, vocational teachers, and interested educators. This information will indicate both advantages and drawbacks which will ultimately serve as a reliable basis for future constructive criticism and improvement of vocational student organizations.

Second, this study provides information for researchers who wish to explore further the specific interests of student involvement in school activities. Knowledge of the variables which help to explain the phenomenon of cocurricular participation may be of interest to the executive directors/secretaries that organize and provide support and leadership nationally and statewide to vocational student organizations. Educators, administrators and counselors will also find this information useful and revealing in reference to the description of the sophomore adolescent previously enrolled in schools across the country. Furthermore, policy-making bodies throughout school districts in this country may find information provided by this study of interest to explore or expand upon the prerequisite of satisfactory academic performance in turn for cocurricular participation in the secondary schools of our country.

Finally, this study examines the nature and relationships of seniors' participation in vocational student organizations, based on background criteria as sophomores. School officials and more importantly parents,

through interpretation of the proposed causal model in this study, can determine early in the student's high school career, identifiable variables, that may help to explain a vocational student's level of participation in a vocational student organization. The ability to recognize this level of participation at some point in the future may not only complement the student's curriculum and eventual occupational status but offers the student leadership opportunities and real life experiences at a point in time when the thirst for knowledge, which is occasionally unrecognized by students, cannot be ignored. As Haensly, et. al., (1986) recommended, the call for a, "statewide or national sample of student's attitude toward extracurricular participation activities" (p.119), would not only substantiate the proposed advantages previously listed, but would relay important resource-based information to both policy and decision making bodies in the school districts around the country.

LIMITATIONS OF THE STUDY

The limitations of the study were as follows:

1. This study was limited to 1980 sophomores who were subsequently enrolled as 1982 seniors in public secondary schools of the United States and included in the transcript sample.
2. This study excluded those sophomores who either dropped out or transferred out of the schools selected for

inclusion in the HSB study as well as those who graduated prior to 1982.

3. Most of the data are self reported with the exception of high school grades; therefore, the student's biases and misconceptions are present in the data. This should be kept in mind when reviewing the results and conclusions of the study. Much of the data relied on the student's being able to recall past experiences or information about his or her immediate family.

4. Because the study utilized secondary analysis, there may be other variables that would influence or help to explain the nature of participation in vocational student organizations that were not included in the analysis. Beyond that, the nature of secondary analysis precludes the rewording of questions to reflect a-priori researcher concerns. The questionnaire must be used in its existing form.

DEFINITIONS AND OPERATIONAL TERMS OF THE STUDY

So that the reader can better comprehend the many terms that are frequently used in this study, a number of terms and definitions are listed below.

HIGH SCHOOL AND BEYOND - A national longitudinal survey of high school students carried out by the United States Department of Education at public and private schools in the United States to assess the critical educational and vocational choices made between the

freshmen and senior years and how those choices affected the student's development in a longitudinal sense.

HIGH SCHOOL SOPHOMORE COHORT - 28,240 students from 1,015 high schools that were sampled in the base year of the High School and Beyond survey series. At each of the cooperating secondary schools, thirty-six students were selected who were academically classified as sophomores during the 1979-80 school year according to local criteria. The sophomore cohort in this study was further defined by those who: possessed transcript data, were enrolled in public school, were base year participants in the 1980 HSB survey and were also first follow-up participants in the 1982 HSB survey.

SELF CONCEPT - A composite score of student responses to four HSB items combined into a continuous variable. The questions included: (a) I take a positive attitude toward myself; (b) I feel I am a person of worth; on an equal plane with others; (c) I am able to do things as well as most other people; and (d) on the whole, I am satisfied with myself (National Opinion Research Center, 1980).

SOCIOECONOMIC STATUS (SES) - A composite score of student responses to several HSB items combined into a continuous variable. The questions included self reported information on the father's education, mother's education, father's occupation, family income and material possessions in the household.

CURRICULUM - A set of courses offered by a school or institution constituting an area of specialization within a particular subject matter or major.

COCURRICULAR ACTIVITY (IES) - A formal, voluntary grouping, such as teams, clubs and other organizations for youth enrolled at the secondary level. Synonymous terms include extracurricular activities, extra class activities, student activities, informal activities, third curriculum, and school activities (Frederick, 1959). Specifically defined for this study, "student activities" included 11 categories of activities listed on the 1980 High School and Beyond Sophomore Base Year and First Follow-up surveys. Vocational student organizations were included as an activity under this category.

VOCATIONAL STUDENT - A student enrolled at a secondary institution sampled as a part of the HSB sophomore cohort and defined according to the concentration of vocational coursework taken while enrolled in high school.

VOCATIONAL STUDENT ORGANIZATIONS - Any one of a group of organizations for students enrolled in vocational education programs, with national, state, and local units, the activities of which are an integral part of the instructional program. The vocational student organizations currently active that could have been identified by students in the HSB survey were the Distributive Education Clubs of America (DECA), Future

Business Leaders of America (FBLA), Future Farmers of America (FFA), Future Homemakers of America and Home Economics Related Occupations (FHA/HERO), Health Occupations Students of America (HOSA), Office Education Association (OEA), Technology Student Association (TSA), and the Vocational Industrial Clubs of America (VICA).

SUMMARY

This study was designed as a secondary analysis of an extant data base of high school vocational sophomores to explain the nature and phenomenon of variables affecting participation in vocational student organizations. Chapter I presented an introduction to the many variables which explain participation in vocational student organizations at the secondary level.

Cocurricular activities in the high school are not only generally thought to be important from a social perspective, but have been found to be related to social and fiscal prominence in later life. Specific portions of the chapter consisted of information pertaining to: purpose of the study, research questions, importance of the study, assumptions of the study, limitations of the study and definition of terms.

Chapter 2

RELATED LITERATURE

This chapter presents a review of literature and studies which are directly or indirectly relevant to the purposes and procedures of this study. The chapter is divided into the following sections: The question of definition, origin of cocurricular activities--background, vocational student organizations--background , need for cocurricular activities, variables related to both cocurricular activities and vocational youth organizations and sources of similar literature related specifically to the High School and Beyond data base.

The Question of Definition

A variety of terms have been used to identify and describe the more student oriented portions of the school curriculum. These terms include extracurricular, extra-class, informal activities, semicurricular, cocurricular, the third curriculum, school activities and student activities.

Although the terms and definitions differ in a literary sense, authors who have done research in this area of education have liberally entangled the terms listed above with one central definition, as supported by Bent, Kronenberg and Boardman (1970); and confirmed by Rehberg

and Schafer (1973); and Wagner (1980) that:

School activities have become a part of the school curriculum rather than something extra. Thus, the term, "extra-curricular activities" is somewhat inappropriate. Student activities are part of the school curriculum which is voluntary, approved, and sponsored by the school, but which carries no academic credit. (p. 377)

Authors typically agreed that cocurricular activities are more student-centered than are school subjects or classes. Agreement also existed within the literature that these activities generally typified the following areas: music, drama, subject-related clubs, student publications, student government, assemblies and social, hobby and service organization as well. However, since the early 1900s schools have modified and expanded this program of studies so that what was once considered to be extra curricular is now incorporated into the curriculum. Today it is common for schools to offer band, chorus, student publications, drama, and physical education-related experiences for credit. Furthermore, it is not uncommon for students to earn credit towards graduation for cooperative work experiences, educational tours, leadership training activities and cultural language studies abroad.

One classification of student activities listed above is that of subject-related clubs under which vocational student organizations would be categorized. Because of the "integral" nature of such organizations as mandated by federal laws, vocational student organizations have been

looked upon as being more cocurricular as opposed to extracurricular. This issue needs to be taken into account as the reader reviews the historical and contemporary accounts described hereinafter.

Early Origins of Cocurricular Activities

Cocurricular activities have had a wide and varied history. Recorded information about this portion of the secondary school curriculum was difficult to obtain since early educators recorded little information about the less formal phases of the school program (Robbins & Williams, 1969; Jones, 1935). Roemer and Allen (1926) verified this with the observation that:

Extra curricular activities are in some form, as old as our educational system. The spelling-bee and the Friday afternoon exercises, together with athletics in various forms, have long held forth in the schools of America. Previous to the last decade, such activities were carried on in a haphazard manner, were not definitely organized and consequently had no regularly formulated plan. (p. 1)

The origins of cocurricular activities goes far beyond the beginning days of early America schooling. Some writers assert that the origins of contemporary cocurricular activity programs can be traced to ancient Greece (McKown, 1930; Porter, 1965; Roemer, Allen & Yarnell, 1935). A good portion of Greek education was approached through cocurricular activities. From the Homeric period there is a history of games, musical entertainment, dancing and singing. Among the sports often

found during this period were boxing, wrestling, racing, jousting, putting, the weight, archery, javelin-throwing and chariot racing. The famous Olympics were recognized as an opportunity for competition and placed emphasis on such activities through sporting events. The tradition of "rushing" used on college campuses today was in fact, first brought to fruition by older Greek students who rushed ship loads of new students coming to Athens for education. The object was to persuade young men to go with a particular group or crowd. Those newcomers unwilling to take sides, were usually kidnapped, kept in hiding or confinement and then released when specific terms were met (Roemer, Allen & Yarnell, 1935). The origin of cocurricular activities in the United States may be traced through several stages. While these stages are not defined with discreet starting and ending points, they are roughly parallel to other important developments in the profession of education and society itself.

Foster (1925), discussed the history of the extracurricular movement by tracing the changes in viewpoint as to what the school should be. He found that:

There was a time not far distant when the entire aim of the school was to develop the intellect to its highest powers, regardless of the social or even physical needs of the individual. (p. 3)

The quote by Foster depicts the stage of time by which cocurricular activities were actually suppressed, ignored

and entirely disregarded (Robbins & Williams, 1969; Smith & McQuigg, 1965). This attitude was mainly a reflection of economic conditions as education was a luxury reserved for a few white Americans. This "luxury" was often times at the apportionment of local parents who controlled and initiated the local common school (Kaestle, 1983).

Life for the early settlers in America, as experienced by the Puritans of New England, was serious. Work was Godly and sacred. Play and frivolity were not acceptable for any child. Any time taken away from work or productive endeavors was devoted to prayer. The puritan work ethic was perceived as God's way (Sybouts & Krepel, 1984). Formal education consisted of a few weeks or months of schooling during winter for those children who were too young for heavy work. Memorization, discipline and recitation were the main areas of emphasis for students to consider when attending the local common school. Subject matter was closely relegated to the "3 R's" and other academic subjects such as language and history. Schools, thus reflected the puritan work ethic and officials did not allow any time to be wasted and most assuredly, did not foster social activities, the playing of games or dancing. It was during the early stages of the development of education in America that there existed, according to Frederick (1959), "The period of suppression with respect to out of class activities" (p. 21).

Development of Cocurricular Activities

The second period of development, often called the period of toleration (Frederick, 1959), found educators allowing some form of cocurricular activities. Fretwell (1931), limited historical comments to the preface of his book when he cogently remarked, "Historically, the state, the community, the parents and the teachers, with various happy exceptions have tolerated or attempted to suppress these outside activities. The pupils, however, frequently without guidance, have been busy acting."(p. 9) Although, it is important to keep an historical eye on the common school and the early history of secondary education in America to see how school activities have reached their present stage of development, it is important to be aware of the development of cocurricular activities on college campuses as well. School activities much like other forces in education, emerged on the college campuses before moving to secondary schools (Sybouts & Krepel, 1984). It was during this period of toleration that old school rules, enforced during the period of suppression were gradually relaxed. The common response from administration and faculty was that teams and organizations could be formed provided there was no interference with studies. Terry (1930) reported there was little support for public sanctioned school affiliated activities until the middle of the 19th century. The support and development of such

activities took place along the Eastern seaboard in older, more established sections of the country. It was also during this period that the puritan tradition with its allegiance to the idea of hard work and a rigid morality, was being tempered and balanced by a way of life that permitted people to devote more time to leisure activities. A few educators and politicians led by Horace Mann, spoke out for reshaping the curriculum and pedagogy by considering the needs of youth and community, which ran counter to traditional puritan philosophy. Not only did Mann introduce new instructional methods and a much more practical sequence of courses, he introduced singing as a part of the total curriculum. Mann viewed singing as a means of extolling social and moral values (Church & Sedlak, 1976).

Among the first student activities to be tolerated were athletics, sports, debating and publications as illustrated in Table 1 (Strang, 1941). Additionally, activities such as study hall supervision, student government, and literary societies were instituted in schools, colleges and academies along the east coast (Elder, 1984). The period of tolerance did not mean that educators were embracing school activities as an important contribution to the total educational program. It meant there was an acceptance, often grudgingly, of the inevitable, which was supported by an emerging acceptance

Table 1.
Strang's Origins of Extra-Curricular Activities

<u>Activity</u>	<u>Introduction</u>
Newspaper	Began as a curriculum activity about 1870.
Magazine	First reported in 1885.
Yearbook	First reported in 1890.
Handbook	First reported in 1910.
Music Activities	Began as a curricular offering in 1885.
Athletic Activities	Between the years 1875-79 football, track, baseball introduced; basketball by 1900; golf, tennis swimming, wrestling, hockey, since 1920.
Dramatics	First introduced in 1880.
Debating	One of the oldest activities. Introduced into English offerings by 13% of the schools in 1870.
Student Councils	Developed during the years 1901 and 1902.
Assemblies	Introduced with the beginning of high schools (1870).
Clubs	Established about 1920.
Homeroom	First reported in 1873 and 1879.

of out of class activities by the constituents in the community.

The third period, the period of capitalization, began early in the 20th century. It found educators eager to capitalize on activities that had positive educational values. Few high schools were without athletic teams, student councils, musical groups, drama productions, honor groups, social functions and other aspects of the curriculum that were not included in schools just decades before. Administrators and teachers believed there was educational value in such activities (Smith & McQuigg, 1965). This trend toward acceptance of school promoted, faculty sponsored extra-curricular activities is found without question in The Cardinal Principles of Secondary Education issued by a special committee of the National Education Association (NEA) in 1918 (Cuccia, 1981; Krug, 1969; Sizer, 1964). The Commission on the Reorganization of Secondary Education (CRSE), formed in 1911 by the NEA, produced its report on the Cardinal Principles, listing seven major objectives. Specifically, they were: (a) health; (b) command of fundamental processes; (c) worthy home membership; (d) vocation; (e) civic education; (f) worthy use of leisure; and (g) ethical character (Commission on the Reorganization of Secondary Education, 1918). The opening sentence of the report highlights the three means by which secondary education was to be

determined. They were: (a) by the needs of the society to be served; (b) the character of the individuals to be educated; and (c) the knowledge of educational theory and practice available. Inevitably, the report placed emphasis on the social changes that had taken place in America within the past few decades (Krug, 1969; Dee, 1965). Life had become more and more complex. With industrialization of factory systems in substitution of manual labor, the breakdown of apprenticeships, the movement of parental figures into the work place, immigration issues, the population shift from rural to urban and the advent of child labor laws as the social concerns, modification of the secondary school structure was thought to be essential.

The Commission also considered the role education was to play in society. Prior to the CRSE report, secondary education was regarded as a selective institution providing course work for particular students to utilize for further studies in university settings. The report called for a unifying function to begin within the secondary school and this function was in the form of the comprehensive high school (Krug, 1960). The chairman of the Commission, Clarence Kingsley, was thought to be the impetus by which the move towards a comprehensive high school was born. He was concerned about the long term effects of too much differentiation through curriculums.

The commission's report advocated a dualism of social

efficiency coupled with academic piety by tradition. It was this dualism that inspired the CRSE to address, "The worthy use of leisure" in what Krug (1969) described as, "Enabling the individual to recreate his powers and enlarge and enrich life, thereby making him better able to meet his responsibilities" (p. 388). Similarly, the discreditable use of leisure would impair health, disrupt home life, lessen vocational efficiency and destroy civic-mindedness. Furthermore, the CRSE report (1918), called for the social mingling of pupils through the, "Organization and administration of the school and the participation of pupils in common activities . . . such as athletic games, social activities and the government of the school." (p. 23)

Activities within the high school now had a directive to unify the student body not only in spirit, but in body as well. This blessing of school activities by the CRSE in essence, declared such student orientated activities a vital part of the process of education. Jones (1935), in a study of extra-curricular activities and the curriculum published shortly after the Cardinal Principles Report, chronicled the approximate years when certain activities were introduced into the curriculums of 209 schools.

The number of student activities in public schools during the period from 1919-1924 increased dramatically by as much as 100% in some activity areas. This increase as

shown by Jones, could easily be attributed to the implications of the CRSE report regarding use of the term "leisure" in the report. This trend towards acceptance can be traced back to the period after World War I. The movement towards acceptance of cocurricular activities was not coincidental by any means. Elwood P. Cubberly helped to explain this issue when he wrote:

Within the past decade, and wholly within the past two, an entirely new interest in extra-curricular activities of youth has been taken by the school. In part this change in attitude has been caused by the new disciplinary problems brought to school through the recent great popularization of secondary education, in part by youth as a result of our increase in wealth and the application of recently enacted child-labor laws, in part by the many new temptations to which young people in the present age are subjected, and in part by the general speeding up that all evolutionary social changes have experienced as a result of the World War. (Fretwell, 1931, p. ii)

The expansion of school activities within the curriculum continued well into the 1930's even though some programs within the secondary schools were being reduced. A serious result of this reduction was that "extra" teachers were laid off and long time veterans of the teaching profession went unpaid (Robbins & Williams, 1969).

The fourth period is often referred to as the era of exploitation and began in the 1940's. This period was known for the widespread encouragement and capitalization of publicly attended events, especially athletics, music and dramatics. Wilkerson, (1982) related that such a transformation yielded "The current quasi-professional

athletics establishment which, in effect if not in fact, dominates virtually every comprehensive secondary high school and many junior highs" (p. 70).

Since the 1940's, the developmental process has continued. Characterized by a variety of significant changes, the fourth stage in the history of cocurricular programs in the United States has shown to be one of fusion between school and nonschool activities, agencies and institutions (Gholson & Buser, 1984).

The late 1950's saw a trend that reduced the amount of time students were away from the academics and the school. A strong drive occurred to move the objectives of cocurricular activities more in line with the general objectives of education (Buser & Long, 1974). The National Association of Secondary School Principals (NASSP) were mainly responsible for this move towards a more balanced curriculum (Grady, 1981). More recently, the position of cocurricular activities in secondary education has become somewhat precarious. The 1960's witnessed a literal explosion in student activism not only on the college campuses of our country, but high schools as well. The economic realities of the 1970s saw taxpayers shy away from supporting through taxes on real property, the ever rising costs of education (Rehberg & Schafer, 1973). This resulted in many student activity programs falling victim to the axe of fiscal austerity -- albeit often not without

resistance and counter pressure. Rehberg and Schafer (1973) provided an example of public opposition to the ill-fated proposal of the superintendent of the Philadelphia public schools who attempted to eliminate cocurricular activities, most notably, varsity football, as an austerity measure.

In the 1980's cocurricular activities are being viewed from a more critical perspective. Educators believe basic skills offered in the secondary school to be far more important; so important, in fact, that cocurricular activities should be used as a leverage to attain these skills (Firth & Clarke, 1984). Although this debate is important to the ultimate well beings of both curricular and cocurricular activities, the future of cocurricular activity programs seems secure. Students will continue to demand relevant and meaningful cocurricular activities. If the school cannot or will not provide such programs, alternatives will almost certainly be found in the community (Gholson & Buser, 1984).

Vocational Student Organizations -- Background

Vocational student organizations have traditionally constituted an integral part of vocational education programs (Vocational Education, 1983). Such an integral relationship between student organizations and the instructional program has been defined by Federal law. The rules and regulations of the Vocational Education

Amendments of 1968 (Sec. 104.512) gave states the right to use Federal funds to support activities of VSOs which were described in state plans and which were: (a) an integral part of the vocational program; and (b) were supervised by qualified vocational education personnel (Vaughn, Vaughn & Vaughn, 1987). The eight student organizations operate within the framework of the school curriculum and although each group has its own unique style and intensity, all have the common goals of leadership, citizenship and career preparation (Lee, 1982; Reel, 1980). Even though the organizations were not started simultaneously in a chronological sense, their common goals were patterned after the passage of the Smith-Hughes Act. This historic piece of legislation created a system of vocational education in connection with the public schools in the United States. It provided a continuing appropriation for vocational education in agriculture, trades and industry, homemaking and for teacher training in each of those fields (Roberts, 1957). As the formation for later expansion, the Smith Hughes Act was the springboard by which the eight organizations would originate and expand.

Future Farmers of America (FFA).

On November 20, 1928, the first national vocational student organization was born during a meeting of 33 vocational agriculture students, their advisors, state agricultural education leaders, and representatives of the

Federal Board for Vocational Education's Agricultural Education Service. They were part of a group of more than 1,500 vocational agriculture students attending the third National Congress of Vocational Agriculture Students in Kansas City, Missouri (Barlow, 1986; Crunkilton & Taylor, 1980). The meeting became the first national convention of the Future Farmers of America (FFA).

The history of the organization is perhaps like no other VSO in vocational education. This is due in part to the strong historical ties of the organizations founders and the birthplace of the FFA, Virginia Tech. Walter S. Newman, the state supervisor of agricultural education in Virginia, proposed in 1925 that a state organization of farmboys be formed to give those enrolled in vocational agriculture greater opportunities for leadership development. The idea was approved by a group of students in 1926 and thus, the Future Farmers of Virginia was born. Dr. Newman, along with Edmund Magill, Harry Sanders, and Henry Groseclose are credited with mutually originating the Virginia model of FFA on a national level (Crunkilton & Taylor, 1980). Today, the FFA has 52 chartered State associations and has grown from 16,217 members in 1929 to over 450,000 active members (C. Harris, personal communication, October 17, 1986). The primary aim of the FFA is to develop agricultural leadership, cooperation and citizenship.

Technology Student Association (TSA).

Industrial arts students' groups have been in existence since the first industrial arts teachers decided to do something extra with their students after school. In 1957, an article written by Dr. Rex Miller regarding his high school club in Iowa generated tremendous interest in a national organization for student in industrial arts (Vaughn et al., 1987). In the 1959-60 school year, the American Industrial Arts Association established a committee to explore the possibility of establishing such a national student organization. In March 1965, the American Industrial Arts Students Association (AIASA) was organized as a sponsored program of the American Industrial Arts Association, and in 1978 was officially incorporated and recognized by the American Vocational Association. The organization underwent a formal name change to Technology Students Association in 1986 when its service area changed its name from Industrial Arts to Technology Education. Today, the organization consists of 26,566 students (Barlow, 1986).

Distributive Education Clubs of America (DECA).

The history of DECA parallels closely that of distributive education, now known as marketing education. Vaughn et al. (1987) support the opinion that DECA began in 1947 as the Distributors Clubs of America. Incorporated October 17, 1946, DECA was initiated officially as a

national organization in 1948 in St. Louis, Missouri, when 17 charter member states approved the first constitution and adopted the name Distributive Clubs of America. In January of 1950, the name was changed to DECA Inc. and officially recognized by the American Vocational Association (Hephner, 1980).

The distributive education program received its first official recognition and federal funding with the passage of the George Dean Act in 1936. Several local organizations had been established earlier as supplementary clubs to distributive education programs. The existence of these clubs, which held regional and later state wide meetings, led eventually to the development of a national organization that reaches some 150,000 students who are part of the organization today (Roberts, 1957).

Future Business Leaders of America (FBLA).

The FBLA concept was developed in 1937 by Hamden L. Forkner of Teachers College, Columbia University, New York City (Vaughn et al., 1987). In the early 1940's, leading teachers and administrators, especially in the South, saw an opportunity to help young people achieve success in their business careers through a national organization with state and local chapters. Sponsored by the National Council for Business Education, the FBLA established its first chapter in Johnson City, Tennessee on February 3, 1942. Today, the organization accounts for 190,000 members

as a part of its organization (Barlow, 1986).

Future Homemakers of America (FHA/HERO).

High school students belonged to home economics clubs as early as 1920 (Barlow, 1986). The FHA has its origin in student clubs and local organizations studying homemaking. These clubs increased in numbers after the passage of the Smith-Hughes Act in 1917. Membership in these clubs was estimated at 90,000 members by 1938. The American Home Economics Association was instrumental in starting the local clubs and provided much of the needed help for their initial national identity.

In 1943, the American Home Economics Association, in cooperation with the Home Economics Branch of the U.S. Office of Education, appointed a committee to study these high school clubs. As a result of their joint effort, a national meeting was held in 1944 to discuss the possibility of starting an organization for national representation of high school Home Economic Clubs. On June 11, 1945 in Chicago, the Future Homemakers of America came into being as the official name of the organization (Roberts, 1957).

The FHA functioned under a temporary constitution for three years, and on July 9, 1948, at the first national meeting, the document was ratified and the FHA established.

When the home economics education programs were expanded by the Vocational Act of 1963, the Future

Homemakers began planning ways to meet the needs of students who were enrolling in home economics education for the first time. This resulted in the formation of HERO chapters (Home Economics Related Occupations) for occupational home economics students in 1971. Today, the organization is known as FHA/HERO, although the official name for the national organization is still Future Homemakers of America. The FHA membership was 408,568 members at the end of 1955. Today, the organization consists of 380,791 members in the organization (C. Harris, personal communication, October 17, 1986).

Health Occupation Students of America (HOSA).

When the federal government involved public education in conducting Health Occupation Education in 1968, Health Occupation Programs were established across the United States (Vaughn et al., 1987). As a result of this national effort, the HOSA was formed in 1976 with the guidance of the American Vocational Association Health Occupations Division. With over 400,000 students enrolled in secondary and postsecondary Vocational Health Occupations Education Programs in 1975, the need became clear for students to participate in their own student organization.

The constitutional convention that established HOSA was held in Arlington, Texas on November 10-13, 1976. Their organization was designed for students with an interest in health-related occupations for prospective employment upon

graduation from the secondary school (Barlow, 1986).

Office Education Association (OEA)

Passage of the 1963 Vocational Education Act saw the need for an organization to serve office education students. After the 1963 convention, several groups interviewed state supervisors of office education to determine if they wanted an organization similar to those serving other service areas of vocational education. A majority of supervisors agreed and in July, 1966, Iowa, Kansas, and Wisconsin formed the Vocational Office Education Clubs of America. The organization was later recognized as the Office Education Association that today, represents some 71,000 students nationwide (Barlow, 1986).

Vocational Industrial Clubs of America (VICA).

The need for an organization for students enrolled in trade and industrial education provided such clubs as the, "T and I Clubs", "Future Craftsman" and "Future Tradesman" in the early to mid 1930's. The local and state clubs grew in popularity and in membership but still lacked the cohesiveness of a national organization. An effort to alleviate this was attempted in 1936, but was destined to failure because its founders had not considered the objections of labor and industry (Barlow, 1986). Some labor organizations expressed their concern based on the fact that apprentices and other employed workers in the trades would become members of a national organization,

something labor bosses were bitterly opposed to. At the 1964 American Vocational Association convention representatives of the AFL-CIO, the U.S. Chamber of Commerce and the National Association of Secondary School Principals gave their support for a new national organization. By February, 1965 finances were organized for the group and in May of 1965, at the first Trade and Industrial Youth Conference in Nashville, Tennessee, the Vocational Industrial Clubs of America was established (Barlow, 1986).

Need for Cocurricular Activities

Currently, there reigns a disagreement over the role cocurricular activities should occupy in the secondary schools of America. This incompatibility in philosophy often times reflects poorly on the institution which is represented by the school club or organization. Boyer (1984) contends that, "High schools, to be effective, must have a sense of purpose . . . must go beyond keeping students in schools and out of trouble, and be more significant than adding up the Carnegie units the students has completed" (p. 20). But, recent national reports have veered away from using the school as the catalyst for socialization of the adolescent. Yet, parents and educators nationwide have traditionally looked towards the secondary school experience as one that helps to bridge the transformation from childhood experiences to adult

actuality. Adolescents will eventually socialize with their peers, whether as part of a well planned school extracurriculum or in an autonomous peer society (Haensly et al., 1986). This attempt at socialization could impinge positively or negatively on a student's self-concept, ability to achieve, decision-making capabilities, and, most important for the adolescent, group interaction or social isolation.

Cocurricular activities, no matter what their taxonomy, serve an important role towards the emotional development of the adolescent. However, their inapplicability rise to a dominant priority for allocation of student time and attention, and for economic and human resources, has placed it in severe jeopardy. It was the intent of the writer to highlight research studies and summarize their conclusions as related strictly to what cocurricular activities supply in terms of outcomes and expectations not regularly associated with the academic classroom.

Fretwell, (1931), in his extensive writings on cocurricular activities suggested that each school develop, "A constrictive program of extra curricular activities" along with the realization that, "The plan should recognize that the pupil is a citizen of the school" (p. 13).

Perhaps the most comprehensive list of general functions related to cocurricular activities in the 1950's was proposed by Miller, Moyer and Patrick, (1956). They

concluded that cocurricular activities should help students to:

1. Provide opportunities for the pursuit of established interests and the development of new interests.
2. Educate for citizenship through experiences and insights that stress leadership, fellowship, cooperation and independent action.
3. Develop school spirit and morale.
4. Provide opportunities for satisfying the gregarious urge of youth.
5. Encourage moral and spiritual development.
6. Strengthen the mental and physical health of students.
7. Provide for well-rounded social development of students
8. Widen student contacts.
9. Provide opportunities for students to exercise their creative capabilities more fully.

Graham (1964), suggested several reasons for the growth and acceptance of what was called extra class activities. Among them were:

1. Parents liked to see their children perform.
2. Teachers enjoyed student activities more than the classroom.
3. Teachers received more reward for success in the student activities field than in academic work.

4. Young people liked them.

5. They grew as the country and the nation became more urban; there were fewer chores to keep children busy.

6. They grew because they filled the "boredom" of the small town.

7. They grew as more and more young people attended schools.

In an attempt to get beyond the idealistic reasons suggested by educators as to why students participate in activities, Buser and Long (1974), directed a study of some 2,000 students in the Illinois secondary schools. Students were asked to rank 18 reasons for their participation in a school activity program. The rank order of the top ten with percent rating "extremely" or "highly" important was:

1. For fun and personal enjoyment (86%);
2. For personal achievement (81%);
3. For individual needs and special interests (68%);
4. Broadening of personal and social contacts (64%);
5. Achievement of popularity and social status (54%);
6. Exploration of experiences not in class (53%);
7. Because friends participate (49%);
8. Develop leadership activities (49%);
9. Earn awards, letters and prizes (47%);
10. To prepare for a vocation (47%);

Serow (1979) believed that cocurricular activities , such as school organizations, can "Act as a small scale

democracy, inculcating in its members the fundamental norms and values of the larger society" (p. 91). Of the 16 principles to which educators could address themselves when assessing their cocurricular programs, a study of Middle School and Junior High School Evaluative Criteria (1979) advocated "Providing opportunities for students to participate in a representative, democratically functioning form of school government. In a 1968 study, Bash and Long stated:

Qualities such as leadership, social desirability, realistic self perception, emotional stability, initiative and better citizenship through acceptance by others are purported to be developed by student involvement in extracurricular activities. (p. 43)

Moyer (1979), Curet (1976), and Johnson (1976) all believed that cocurricular activities offered one of the few opportunities available for many individuals, especially those who do not function well in the classroom, to develop leadership qualities.

This outcome was consistent with those reported earlier in the literature related to cocurricular activities as well. McKown (1944), wrote that school organizations taught students parliamentary procedure, good social behavior and responsibility. Additionally, students had opportunities to make decisions and carry them out as well. In a similar study, Towne (1944) concluded that school clubs and organizations help students develop "Social and civic competence, the ability to get along with

people and to cooperate successfully in our democratic society" (p. 26). Greer (1975) reported that, "Extracurricular activities often provide needed outlets for healthy peer interaction, supervised activity and vital social learning experiences for the student" (p. 42). As noted by Frederick (1965), "Social activities can serve to transform the awkward, shy, boisterous and crude youngster into a relaxed, knowledgeable, skillful and attractive adult" (p. 51).

In a study that explored the relationship of intramurals and craft-like projects, Beeman and Humphrey (1970) pointed to four main objectives of any intramural or student activity program. Those objectives included promotion of leisure education, enrichment of social competencies, development of group loyalties and sustaining healthful exercise.

Sybouts and Krepel (1984) in their book Student Activities in the Secondary School, pointed out the need for youths to prove themselves. As the authors concluded, this can best be accomplished through participation in a cocurricular program in the secondary school. Equally important in a contemporary sense, is the influence of today's societal trends on the family structure. Sybouts and Krepel state that with the advent of the two wage earner family, there is less family participation in and supervision of activities. Student activities at school in

many instances, are taking the place of family activities that no longer exist in the home.

Cervantes (1966), in a study that evaluated why students drop out of school, found that cocurricular participation was a crucial factor in assisting students to complete their education:

Participation in school activities gives the youth comradeship, a support for his/her academic orientation, a feeling of kinship with the administration and their goals, a sense of accomplishment, and a chance for self development and recognition. Insofar as a youth becomes a participant rather than a detached observer, he becomes emotionally committed and feels he "belongs." That is just a feeling that the dropout does not have.
(p. 103)

In another earlier study, Thomas (1954) concluded that the factor most related to whether or not a student finished high school was their involvement in cocurricular activities:

The first indication that extracurricular activities might be at all important in regard to dropping out was the fact that not one person who dropped out before completing the third year had engaged in even one activity, and 89% of those who finished had.
(p. 17)

Bell (1964), in another study on dropouts and school activities, determined a significant difference between the number of activities a dropout participated in and the number in which a non-dropout was a participant. Furthermore, non-dropouts held more leadership roles in cocurricular activities than did the dropouts. This evidence supports the findings by both Thomas and Cervantes

that lack of participation in cocurricular activities is a characteristic of most dropouts.

In reviewing a number of studies on the objectives of cocurricular activities, Gorton (1976) concluded that such efforts should teach students to:

1. Learn how to utilize time more wisely.
2. Use constructively, the talents and skills you possess.
3. Experiment with ideas and avocational pursuits.
4. Develop an appreciation towards a more positive self-attitude and enhanced value system.
5. Increase knowledge and skill when functioning as a leader and/or member of a group.
6. Develop a more positive attitude toward school as a result of participation in student activities
(p. 75)

Ramsey (1981) believed that, "Every child deserves to find a comfortable, rewarding niche in school - - some program that provides real challenge and genuine gratification" (p. 207). He also noted that:

Contrary to the thinking of some educational purists, the school's activity program is not merely the frosting on the cake - - rather, it is an essential part of the texture of the school. For some students it is the only thing that makes sense in the school!
(p. 208).

Variables Related to Cocurricular Participation

The previously discussed outcomes, objectives and results of having participated in a cocurricular activity certainly appear to have implications towards the physical, mental and emotional development of the secondary student. In this section, the author will specifically examine the literature related to aspects of the students

characteristics upon which such cocurricular activities impact.

Cocurricular participation of males and females

Overall, students regardless of sex, participated in a variety of activities and, on the average, participated in three different types of activities during their high school career (McNamara, Haensly, Lupkowski & Edlind, 1985). Those three activities were athletics, fine arts and career clubs, which included VSOs. Additionally, Sweet (1986) found that 80% of seniors in the 1982 HSB first follow-up reported being involved in at least 1 of the 11 activities identified in High School and Beyond.

However, reporting from a 1976-1977 Illinois school survey, Gholson and Buser (1981) studied student's activity participation in which one variable of interest was the respondent's sex. Their findings revealed that female student involvement exceeded that of males in all areas with the exception of athletics and hobby/leisure with female participation in athletics/sports at 35%. By a ratio of at least three to two, female participation exceeded males in drama, governance, music, honors, service, cheerleading, publications and the social related activities.

It was also identified in a study by Gholson (1976/1977), that students may not participate in a school activity program because a particular interest area or

vocation is not offered for their sex. The inability for students to participate in such activities based on sexual identity alone negates involvement in what Haensly et al. (1986) described as:

Providing a healthy setting for the task of forming new and more mature relationships with age mates of both sexes, achieving an appropriate masculine or feminine social role, accepting one's physique while using the body effectively and acquiring a set of ethics as a guide to behavior. (p. 111)

In an earlier study, Bell (1964) found that females participated more than males in cocurricular activities and thus, were less likely to drop out of high school as a result.

Rehberg and Schafer (1973) noted that the "Pattern of determination" for senior year participation differs for females from that of males (p. 13). Data for the analysis were from four waves of a 5-wave, 7-year longitudinal panel survey of a slightly less than 3,000 member cohort of the class of 1970 from seven urban and suburban, public and parochial school systems in the southern tier of New York. Rehberg and Schafer's study led them to believe that student activity participation carried a different meaning for females than it did for males. The authors interpreted participation as being an instrumental achievement activity for boys, and for girls such activities implied a more expressive, personal connotation. Equally important was the fact that:

For both males and females, the largest single determinant of participation in cocurricular activities for the last year of high school is participation in the second year of high school. Students who participate early on tend to participate later on. (p. 14)

Impact of Cocurricular Participation on Achievement

High school class rank and standardized test scores have been traditionally the best predictors of academic success in college (United States Department of Education [USDOE], 1986). But, involvement sustained over time in one or two cocurricular activities contributes to overall achievement in college too. In a recently released national study titled "Extracurricular Activity Participants Outperform Other Students", Sweet (1986) found that the more activities students become involved in, the higher they ranked in terms of grades and test scores. The report, based on data from the federal longitudinal survey called High School and Beyond, was published by the Associated Press in such national publications as Education Week and in regional newspapers like the Roanoke Times & World News. The USDOE's Center for Educational Statistics also found that more than a third of the seniors with a grade point average of 3.5 or above belonged to their school's student council or political club. By comparison, 8% of the students with grades lower than 3.5 belonged to such groups. Only 10% of the students who participated in four or more activities had averages below 2.0, compared

with 30% of all students.

One purpose of the report was to provide data to school districts that had recently moved to require minimum grade point averages (GPA) for students involved in sports and other cocurricular activities. The report concluded that requiring a C average, or 2.0 on a 4.0 scale, would not be a threat to most students, including varsity athletes who, when surveyed, met or exceeded the C average requirements 87% of the time. Equally important, according to Research Reports (1987) interpretation of the study was that: "'Participation in extracurricular activities does not guarantee improved performance as a student; what is clear however, is that extracurricular activities are attracting many bright, high performing students'" (p. 5).

According to Piphio (1986), California, New Mexico, South Carolina, Tennessee, and Virginia have enacted stringent no-pass/no-play rules that were modeled after the Reform Act of 1984 in the Texas legislature. This act required that students maintain a C average in order to participate in school athletics. California has taken this movement one step further. As of January 1, 1987 Assembly Bill 2813 requires junior and senior high school students to maintain a C average in, "'All enrolled courses'" (p. 189) during the previous grading period, in order to participate in extracurricular and cocurricular activities (Piphio, 1986).

Bright, high performing students have become more of a target for major universities and business leaders across the country. California Polytechnic State University, San Luis Obispo, a major teaching institution in the California State College and University system considers a student's cocurricular involvement as one of the three criteria for admission, the other two being: (a) The students pattern of prerequisite course work in high school or junior college, and (b) the students grade point average and score on SAT or ACT standardized tests (Shupe, 1986). These factors for admission are standard throughout the 19 institutions of the California State College and University system, one of the largest systems of higher education in the country (Shupe, 1986).

Virginia Polytechnic Institute & State University, a major Land Grant institution in the Eastern sector of the United States, also considers the cocurricular involvement of entering freshman to be a vital factor in determining collegiate success. Virginia Tech emphasizes this participation in combination with class rank, prerequisite course work and SAT scores. (R. Fitts personal communication, January 26, 1987).

Cocurricular Participation and Self-Concept

Prior to 1969, no studies were reported investigating the relationship and impact of cocurricular participation on a student's self-concept. It was in 1969 that Phillips

(1969) studied 188 seniors to determine the relationship between cocurricular involvement and self-concept. The Osgood Semantic Differential Scale was used to measure self concept and students were categorized into "high" or "low" self-concept groups. Findings of the study indicated that participation in a cocurricular program was significantly related to self-concept for boys but not for girls, nor for the total sample. No evidence supported Phillip's initial hypothesis that nonparticipants would have lowered self-concept scores. Phillips concluded that variables other than activity program were instrumental in the development of self-concept.

Using Phillips' results as a basis for further evaluation, Yarworth and Gauthier (1978) performed an ex post facto study examining five independent personal variables (self-concept, curriculum track, academic rank, sex, and class level) and the dependent variables of activity participation (total, athletic and nonathletic). Main effect hypotheses were analyzed by examining significance of correlations, followed by analysis of interactions through stepwise linear multiple regression. The researchers found that:

Clearly, these statistics indicate that not only was there a difference in the self-concept scores of high and low frequency participators, but that this difference is significant for all three categories of student activities, The findings lead us to question the results of Phillip's study. (p. 342)

A reanalysis of the 1978 Yarworth and Gauthier study by Winne and Walsh (1980), faulted the analysis, emphasizing that the researchers use of stepwise regression "Was muddled" (p. 161). Winne and Walsh concluded the best predictor of participation was that of a student's curriculum track.

In another study investigating self concept, Grabe (1981) examined successful participation in school activities, regard for the school, and student alienation as influenced by school size and self-concept. Using 1,562 students in 20 Iowa high schools as subjects, Grabe found all predictions of self-concept from the four independent variables to be significant. Furthermore, Grabe determined that a relationship seemed to exist between self-perception and the students successful involvement in school activities. Equally interesting was the fact that the group demonstrating the strongest relationship between self-concept and activities were the younger students in the small-school group.

The conflicts in self-concept studies are evident in many research efforts such as the ones described previously. Shavelson, Hubner & Stanton (1976) recognized the debilitated state of self-concept research as supported by Wylie (1961, 1974) and by Crowne and Stephens (1958) when they stated that:

As a body of research, self-concept studies lack a

focus that would result from an agreed upon definition of self concept, lack adequate validation of interpretations of self concept measures, and lack empirical data on the equivalence of the many self-concept measures currently being used. (p. 435)

These considerations should be kept in mind when reading any study on self-concept.

Cocurricular Participation and Socioeconomic Status.

Sociological research has found that in adult populations, membership in organizations is strongly associated with socioeconomic status. Thus it is not surprising that this tendency is paralleled at the high school level also (Serow, 1979).

In a study that surveyed 685 high school students in 19 districts in a large northeastern state, Serow (1979) examined a dependent variable, level of participation, by creation of an index that consisted of the sum of memberships and leaderships in school activities. Students were then grouped on the basis of a school variable--the population density ratio, as measured by the number of cocurricular activities divided by enrollment. Because of the inverse relationship between school population (density) and availability of activities, low-density schools (small schools) were those that offered the greatest number of activities. Serow found what he had hypothesized, that higher-status pupils generally participated in the cocurriculum more frequently than did students from less advantageous backgrounds. Also,

students attending small schools were more active than pupils in large, more densely populated schools. Overall, regardless of the number of activities available in the school, students with higher SES are about twice as active as the lower-status student. Nover (1981) like Serow, found that high SES students also tended to participate in school activities more often than low SES students. Nover also found that high school seniors were significantly more involved in school activities than were lower classmen and logically, were more likely to hold leadership positions in school. Winne and Walsh (1980) also found status variables to be the best predictors in terms of explaining a student's participation in cocurricular activities.

Cocurricular Participation and Student Employment.

Gholson (1976) reported that among some 13 reasons cited by students for not participating in cocurricular activities, employment outside of school was the most frequently identified reason (89 %). The issue of participation in cocurricular activities is often exacerbated by local school administrators like Mendez (1984) who suggested that:

Extracurricular activities should be restructured so they complement the total educational program, rather than obstructing fundamental academics. Extracurricular activities undoubtedly allow teachers and students to get to know each other outside the classroom and that is a great benefit. However, once again we must view our final educational objective and build those programs that foster it and eliminate those that hinder it. (p. 63)

Student employment, like cocurricular participation is not often thought of as crucial components of the secondary curriculum, even though they assist in the transition from school to the world of work.

Variables related to Vocational Student Organization (VSO) Participation

Vocational student organizations (VSO's) have traditionally been an important feature of the nation's vocational education system (Update, 1987). Through these organizations, students are presumed to develop leadership skills as well as learn about specific occupational areas (Malone, 1983). However, little reliable information exists on the characteristics of students who participate in vocational student organizations (Cunningham, 1985; Vaughn et al., 1987). The research that has been conducted tends to be associated with only one type of organization, and done on a local, state or regional level. Nationally, few conclusive studies have been undertaken that describe the characteristics of vocational education students, let alone those participating in VSO's. One study describing vocational education students, undertaken by Creech, Echternacht, Freeberg and Rock (1975), was based on the National Longitudinal Study of the Class of 1972 (NLS72) which preceded the High School and Beyond Study initiated in 1980. The objective of the study was to identify the differences between vocational-technical students and other

categories. They stated that:

The vocational education literature is extremely limited with regard to specific characteristics of high school vocational students. Much of this literature presents a stereotypical view of the vocational student. He is described as one who has little academic ability and who either chooses or is assigned to vocational courses because he cannot compete with other students (p. 33).

In the study conducted by Creech, et al. (1975), more than 150 student questionnaire items were analyzed and 60 independent variables considered. The authors concluded that: (a) academically classified students were substantially higher in measured academic ability than were both general and vocational curriculum students, and (b) no significant differences existed between general and vocational students.

In another study from the same NLS72 data, Feters, (1975) also found that when compared to academic students, vocational-technical and general students tended to be relatively similar with regard to many of the same characteristics analyzed. However, the results indicated that other identifiers differentiated between vocational students and academic students in addition to those published by Creech et al., (1975). Those differences were:

1. Fathers of vocational students had less formal education than fathers of academic students (42 verses 19 percent did not finish high school).
2. The parents of vocational students had lower incomes (39 verses 19 percent thought parents had low incomes).

3. More vocational students belonged to minority groups (21 verses 12 percent).
4. The survey mathematics mean score test for vocational students were over 1 standard deviation lower than those of academic students.
5. Fewer vocational students (36 verses 69 percent) reported that they had a high school grade point average of B or better.
6. More vocational students said they spent at least 20 hours per week working at jobs (37 verses 21 percent).
7. Vocational students were more apt to work during the week while academic students worked mostly during weekends. (p. 13)

The report, Condition of Vocational Education

(Golladay & Wulfsberg, 1980), also concurred with previous studies and found that students in high school vocational programs differed little from those found in general programs. However, differences did exist between vocational students and academic students.

Studies reflecting the status of vocational students participating in VSO's are even fewer in number. Townsend, (1981) and Carter & Neason (1984) using FFA students reported positive relationships between participation scores and results on sub-scales of a personal development inventory, one of which was scholarship.

Haensly et al. (1986) determined that career activities, which included VSO's, were equally represented among high and low achievers. The researchers concluded that involvement in the career activities portion of the school's curriculum was, in this study, not associated with average or poor academic performance academically.

Welton and Bender (1971) indicated that vocational agriculture students with a higher socioeconomic status and those with lower grades in their high school course work tended to participate more actively in FFA than students with lower SES and higher grades. A state wide follow-up of high school students from a number of VSO's conducted by the Oregon State Department of Education (1977) established that VSO's had a positive influence towards students while at the same time, helping them to identify their career goals. The study also reported that former vocational organization members were more likely to continue their education or work in occupations related to their high school programs than were non-members.

Cunningham (1985), in a study evaluating the characteristics of members belonging to five vocational student organizations (DECA, FBLA, FHA, HOSA and VICA) in a southwestern Virginia high school found that FBLA members had significantly higher grade point averages, mean reading and math test scores than did students in DECA, FHA, HOSA and VICA. Additional data on sex indicated that the organizations as a whole had a fairly balanced representation, 41% males and 59% females. However, when assessing the individual clubs, only DECA achieved an equitable balance. VICA had a predominantly male membership, FBLA predominantly female and HOSA and FHA only female members. On issues of parental education, 50% of

the respondents' mothers and 56% of the fathers had not completed high school.

In a 1985 Study conducted by McNamara, Haensly, Lupkowski and Edlind, 515 seniors from three high schools in Texas were surveyed, 201 of which were members of career clubs (i.e. vocational student organizations were classified as career clubs). Overall the study found that of the students who participated in career related clubs, 3.4% were highly involved, 28.4% were moderately involved and 68.2% reported only marginal involvement in career clubs. Furthermore, and unlike previous studies cited, students in career clubs (28.6%) earned very high grades (A's), while those with no involvement (3.8%) earned low grades (D's). The authors of the Texas study also found that of the students holding numerous leadership positions in school organizations, 50% earned very high grades (A's) while those holding no leadership positions in the school (16.4%) earned A's.

Collins (1977) in a random sampling of vocational student organization members, found students citing items like teamwork, decision making, competition, community awareness, career awareness and social development as several of the many beneficial opportunities offered as being a part of such a group.

Literature Related to High School and Beyond

Perhaps the most infamous and controversial study to

originate out of the HSB data was a publication written by James S. Coleman (1982) titled: High School Achievement: Public, Catholic and Private Schools Compared, or better known today as, "The Coleman Report." In what Coleman calls the, "'Ongoing fray'" (Olson, 1987, p. 1), the 1982 paper attacked the public schools for their high dropout rate and general lack of vigor in addressing the academic necessities of high school students in America. A literal storm of protest followed the release of the 1982 publication (Olson, 1987). Critics claimed the study was the result of analyzing faulty data and inadequately supported conclusions. Coleman's not yet released 1987 study, Public and Private High Schools: The Impact of Communities, will track the growth in achievement among students who were first tested as sophomores in 1980 and then re-tested as seniors in 1982, similar to what this study undertook specific to cocurricular participation in vocational student organizations. In addition to commenting on the analysis and conclusions of Coleman's 1982 report, some researchers remarked on the data base because of its use in the study.

According to Murnane (School Research Forum, 1981), The HSB study provided important new information about secondary education through its extensive data base and as a result of the survey, "Information is available concerning a number of questions that previously could be

addressed only with fragmentary information and speculation" (p. 22). Krathwohl (School Research Forum, 1981), a past president of the American Educational Research Association, stated that Coleman had done a considerable service "By data collections which can be the basis for considerable further analysis, dialogue and discussion" (p. 31). Reporting in the Educational Researcher, Page (1981) acclaimed the HSB data set:

The magnificent HSB data set. HSB is a collection of 58,000 student records in 680 variables, available at a modest cost to anyone who orders it. It is an extraordinary farsighted project, the richest resource for research and policy analysis we have had. A brilliant graduate student, with good theories and sound techniques, may possibly do more with it than any distinguished professor or head of a large research institution. (pp. 22-23)

According to a recently published edition of HSB: An Annotated Bibliography, a combination of some 257 papers, articles, presentations and dissertations have been published or written through utilization of the High School and Beyond data. However, after a careful review of vocational summaries of research, no studies, to this writer's knowledge have investigated the variables associated with cocurricular participation in vocational student organizations using HSB data. Two studies, by Elder (1984/1985) and Peterson (1984) examined extracurricular participation of secondary students relevant to discipline problems and variable identification specific to 1982 seniors. Neither study included

vocational education students as a factor within the study.

SUMMARY

Based upon the review of literature, it would appear that cocurricular activities have been and will continue to be an important component of the educational system of students in the United States. The review provided an extensive historical perspective on the role of cocurricular activities and vocational student organizations as an integral part of that system. Additionally important were the various benefits and outcomes of participating in cocurricular activities and the crucial void they fill within the curriculum in our secondary schools.

The review of literature also included information on the variables related to cocurricular participation in the comprehensive school and although limited in scope and quality, studies on variables of interest specific to youth participating in vocational student organizations. The chapter concluded with information on the High School and Beyond Data set and its valuable contribution to the educational literature. Overall, the chapter gave additional support to the need for studies relating to student cocurricular participation in vocational student organizations.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

The purpose of this chapter is (a) to describe the research related to the High School and Beyond study, its data collection, validity, instrumentation, population and sampling techniques used; (b) to explain the procedures used in the study's statistical treatment of the data utilized to address the four research questions in Chapter 1; and (c) to provide a complete variable list of the dependent and independent variables used in the statistical research of this study.

The Data Base -- HSB

The mandate of the Center for Statistics (CS) includes the responsibility to "Collect and disseminate statistics and other data related to education in the United States" and to conduct and publish reports on specific analysis of the meaning and significance of such statistics (Education Amendments, 1974). Consistent with this mandate and in response to the need for policy-relevant, time series data on nationally representative samples of high school students, CS instituted the National Educational Longitudinal Studies (NELS) program. The NELS program was instituted to, "study longitudinally the educational, vocational and personal, familial, social, institutional

and cultural factors that may affect that development" (National Opinion Research Center, 1985). To accomplish this task, longitudinal data were collected in two ways: (a) multi-wave; the initialization and regular follow-up of a given cohort of students over a span of years, and (b) multi-cohort; the establishment of comparable data obtained from successive cohorts, permitting studies of trends relevant to educational and career development plus those of societal roles. Thus far, the NELS program has consisted of two major studies. The National Longitudinal Study of the High School Class of 1972 (NLS72) and the High School and Beyond Survey (HSB) represent efforts listed in (a) which reflects cohorts analyzed by year and class and (b), the evaluation of data obtained from two different groups at the same point in time. The end result of these long-term studies enables the Department of Education to provide federal and state policy-makers with information on the educational well being of public and private schools throughout the decade of the 1980s and the 1990s.

Sophomore Cohort Data Collection -- Base Year

Base year sophomore data were collected from 28,240 students in 1,015 high schools between February 1 and May 15 of 1980. Students were assembled several weeks prior to survey day and informed about the objectives of the survey, requirements for participation (parental permission), the voluntary nature of the survey and procedures for

maintaining confidentiality of the responses.

The data for HSB were obtained primarily by means of questionnaire and tests. The student questionnaire covered the respondents' school experiences, background, post high school plans and aspirations, language proficiency, self concept, and types of courses taken in high school. Students were then given one hour to complete the questionnaire, after which survey representatives scanned questionnaires for completeness. Cognitive tests were administered following the completion of the student questionnaires. The tests consisted of six timed segments that took approximately two hours including logistical considerations. Those students who participated could decline to answer any survey item and were encouraged to mark a special oval in the student questionnaire or the cognitive tests to indicate their intent to not answer a particular question. Make-up days were held by school staff to sample those students absent on the original survey day.

Once gathered, information was sorted into five files: Student file, school file, language file, teacher comment file and twin-triplet file. The data used in this research were obtained from the sophomore student file maintained on computer tapes by the Virginia Tech Vocational Technical Education Division and accessed via mainframe computer through the Virginia Tech Computing Center by use of a SAS

system file (see Appendix A).

Sophomore Cohort Data Collection -- First Follow-up

During the fall of 1981, school coordinators received printed rosters of HSB sophomore cohort members originally selected at their schools and indicated which of the students were still enrolled at the school and which had transferred, graduated early, or left school without graduating. Students in the last three categories were classified into the school leaver sample and thus, were classified as ineligible for the first follow-up and not utilized in this study.

On-campus data collection arrangements were sought for all sophomore cohort members who were still enrolled in the schools they attended during the base year of the study. Survey days were arranged at 952 schools between the period of February 15 and June 11, 1982. Survey instruments and tests were distributed to identified sophomore cohort students (now seniors) in a fashion that generally paralleled those used in the base year. By the end of the data collection period, 96% of the students eligible for on-campus survey administration had been re-surveyed. The HSB study has constructed variables to identify those students who participated in both the base year and the first follow-up survey.

HSB Instrumentation

Many instruments were used to collect data for the

entire HSB survey. However, the only instruments used to gather and quantify data for this study were the Sophomore base year and first follow-up student survey questionnaires and student transcript data generated for the HSB survey. Approximately three-fourths of the items in both the base year survey and the first follow-up were similar.

The HSB Sophomore base year student survey focused on the student's behavior and experiences in the secondary school setting. Also included were questions about employment outside of school, postsecondary educational and occupational aspirations, school activities, attitudes, selected personal and family characteristics and language proficiency. The base year student survey was comprised of two sections: (a) a demographic section of 36 items, and (b) a section on plans and experiences containing 114 items.

The survey was field tested in the spring of 1979 and included approximately 3,000 students in 44 schools from six states. The field testing served to collect preliminary data, refine survey questions and test the procedures for the actual survey.

The HSB Sophomore first follow-up student survey was conducted in the spring of 1982. The purpose of the first follow-up Sophomore questionnaire was to document secondary school experiences, especially shifts in attitudes and values since the base year survey and to document work

experiences and plans for postsecondary education. Almost all of the first follow-up questions had been asked in the base year; most were from the sophomore document, but many had appeared in the first follow-up questionnaire only. Content areas of the first follow-up questionnaire included education (high school program, courses taken, grades, standardized tests taken, attendance and disciplinary behavior, parental involvement, extracurricular and leisure activities, assessment of teacher and school quality), postsecondary education (goals, expectations, plans, and financing), work/labor participation (occupation goals, attitudes toward military service), demographics (parents' education, father's occupation, family composition, school age siblings, family income, marital status, race, ethnicity, sex, birthdate, physical handicaps), and values (attitudes toward life goals, feelings about self etc.).

The cognitive tests--the same ones employed in the base-year survey were administered to all sample members. The cognitive tests used to assess the math, reading, science, vocabulary, writing and civic aptitude of HSB respondents have not been released for public scrutiny. This then makes validity of such tests a concern on the part of the researcher. Heyns and Hilton, (1982) described the aptitude tests developed by the Educational Testing Service (ETS) for the HSB study as meeting the purpose for which they were intended. Heyns and Hilton noted:

The reliabilities meet conventional standards and the difficulty levels and timing of each of the tests appeared to be appropriate. Examination of the distribution of scores for each test indicate that the scores are not skewed to either end of their scales. The reliabilities are consistent for students in public, Catholic and other-private schools. (p. 92)

Sampling

The base year survey design of High School and Beyond included a two stage, stratified random probability sample of over 1,100 secondary schools. Thirty-six sophomores were selected per school. Over 30,000 sophomores enrolled in 1,015 public and private high schools across the nation participated in the study.

In the first follow-up, the sample consisted of 29,737 1980 sophomores who were seniors when the first follow-up study was conducted in 1982. The design of the 1982 first follow-up called for including all base year sample members who were still attending the same school in the spring of 1982. A potential response group of 18,000 students was included from the 1980 sophomore cohort because of the availability of transcript data.

Subsample for Study

For the purpose of this study, one subsample was drawn from the 1980 HSB base year sophomore cohort. The HSB variable (TRPART) identifies that portion of the sophomore cohort for which there is transcript data and is coded 0 for nonparticipants and 1 for participants. Variables identified as (BYPART) and (FU1PART) indicated whether the

student was a participant (code=1) or nonparticipant (code=0) during the base year survey and the first follow-up. These variables also indicated whether base year and first follow-up questionnaire data were available for a student. The HSB variable identified as (FUSTTYPE) was a student type indicator that applied to the sophomore cohort only and signified their status in school as: in-school (code=1), dropout (code=2), transfer (code=3), or early graduate (code=4). The high school type variable (HSTYPE) was used to show the type of high school the respondent attended and was coded as: public (code=1), Catholic (code=2), and private (code=3). The last measure used to define the sample for this study was the composite variable that identified the number of credits recorded on the students transcript file. The variable (VCONPATN), classified students into 4 areas: (a) Concentrator = student earned four or more credits in a single or multiple vocational education programs (code=1); (b) Limited concentration = earned four or more credits in vocational education but less than four in a single instructional program (code=2); (c) Sampler = earned from a fraction of a credit to four credits in vocational education (code=3); and (d) Non participant = earned no credits in vocational education (code=4).

Those students who were classified as having been included in the transcript survey; participants in the base

year and first follow-up surveys; classified as in-school participants during the first follow-up of HSB; enrolled in a public school and identified through transcript data as being either a concentrator, limited concentrator or sampler in vocational education courses were included in the sample for this study. These criteria provided the author with a sample size of $n = 6659$ students.

The method of using transcript data as a means by which vocational students were identified and high school grades and tests substantiated, was deemed more appropriate and justifiably more accurate than use of the self reported description of the high school program as: (a) general; (b) academic or college preparatory; or (c) vocational. Studies by de Jung (1959) and Bailey and Gibby (1971) reported that as individuals proceeded through adolescence, the accuracy of their self-reports tends to increase in terms of their agreement with the reports made of them by others. However, preadolescents were not viewed in the same light as their chronologically more mature counterparts. The accuracy of self-disclosure tends to increase even if the willingness to make such decisions tends to decline (Horrocks, 1976).

Research Design

This study was an ex post facto research design (Kerlinger, 1973). It starts with observation of the dependent variable, participation in vocational student

organizations and then studies independent variables to determine their possible effects on the dependent variable.

Ex post facto designs include treatments chosen by after the fact selection rather than by direct intervention. However, ex post facto studies have not gone without major criticism. Among these, according to Van Dalen (1979) are:

1. Lack of control because of inability to manipulate independent variables.
2. The possibility of not including all relevant factors causing a particular condition.
3. When a relationship between two variables is discovered, it may be difficult to determine which is cause and which is effect.
4. Problems may come about due to lack of control in selecting subjects for the study.

Even with such limitation, Van Dalen (1979) was careful to explain that such efforts, "Do provide a means of tackling problems that cannot be proved in laboratory situations and do yield valuable clues concerning the nature of phenomena" (p. 226).

Dependent Variable

In this study the criterion variable of vocational student organization participation level was generated from responses to one item (item # 1405) requesting student's level of participation in vocational student organizations.

The question asked: Have you participated in any of the following types of activities (vocational education clubs) either in or out of school this year? Possible responses for the question were:

- Have not participated
- Have participated actively (but not as a leader or officer)
- Have participated as a leader or officer (National Opinion Research Center, 1980).

The three levels of participation were treated as an ordinal dependent variable, assigning values of 0 for students who did not participate, 1 if students participated actively and 2 if student participated as an officer or leader. According to Hinkle, Wiersma and Jurs (1979), ordinal data provides one additional property over the nominal scale--"A logical ordering of the categories" (p. 7). Equally important is the fact that the aforementioned categories possess a logical order from no participation to that of mere participation and concluding as a leader or officer in a Vocational Student Organization.

Independent Variables

Exogenous Variables. The following variables were selected as independent measures and taken directly from the HSB student data file. It should be noted that these variables were treated as exogenous variables in the

proposed causal model of participation in vocational student organizations by vocational education students. Exogenous variables are measures which Pedhazur (1982) defined as: "A variable whose variability is assumed to be determined by causes outside the causal model" (p. 581). (See Appendix B for a complete description on variable specification and coding).

Sex. In general, previous research has found mixed relationships between sex and cocurricular activity involvement. McNamara et al. (1985) found no difference between sex of student and participation habits in student activities. Gholson and Buser (1981) found female participation exceeded that of male participation by a ratio of three to two. Gholson (1976) determined that students often do not participate in a school activity because it is not offered for their sex. An equally important issue to consider is the often referred to boy-girl stereotype of vocational student organizations. Therefore, sex was considered for incorporation as an independent variable in the study. The HSB variable SEX (item # 30) was coded 1 for males and 0 for females.

Self Concept. The previous research on self concept was not only conflicting in several instances but as a body of knowledge, not deliberate in its definition nor its expectation. Studies such as Grabe (1981) and Yarworth & Gauthier, (1978), indicated that self concept is an

important quality that should be developed in our schools and cocurricular organizations have been the likely vehicles for that effort. For that reason, it was included in this study. The variable FYCONCPT (item # 56-59), was a composite score of student responses to several questions combined into a continuous variable. The questions included: (a) I take a positive attitude toward myself; (b) I feel I am a person of worth; (c) I am able to do things as well as most other people; and (d) on the whole, I am satisfied with myself.

Socioeconomic Status (SES). Studies supported by Serow (1979); Nover (1981) and Winne and Walsh (1980) found that SES affected the participation of students in various school cocurricular programs and it was assumed to also influence the participation of vocational students in their respective vocational organizations. Five traditional indicators of socioeconomic status were used to create the composite socioeconomic status variable FUSES: (a) fathers education (b) mothers education (c) fathers occupation (d) family income, and (e) material possessions in the household such as, a place to study, newspaper, encyclopedias, typewriter, dishwasher, more than 50 books, own room, calculator, and two or more operating cars. The composite variable (FUSES, item # 50-54) was constructed using first follow-up data and similar procedures used in the base year analysis.

Race. The variable of race was also included as an independent variable in this study due to relationships found in similar studies investigating cocurricular participation. The virtual exclusion of black and hispanic students in vocational student organizations was found by Haensly et al. (1986) in a distribution of students by grade point average. Because prior studies indicated those students with higher grades tended to participate more actively, a possibility exists that minority students may not be as well represented in vocational groups as are white students. The HSB variable of RACE (item # 31) was recoded (code=0) for white and (code=1) for non white.

Base Year VSO Participation. The variable of base year participation in vocational student organizations BB032L (item # 432) was utilized as an independent variable. Rehberg & Schafer, (1973) in their research examining selected student activities found that sophomore year participation in student organizations was a major determinant for senior year participation of both males and females. Additionally, the authors found a zero-order correlation of .46 between sophomore year activities and senior year student activities. The variable BB032L, was the only base year measure used other than nominal, personal data (i.e. RACE & SEX) collected in the base year.

Endogenous variables. The following independent variables were incorporated into the proposed causal model

of participation in vocational student organizations by vocational education students as endogenous variables. An endogenous variable, is one "Whose variation is explained by exogenous or endogenous in the system" (Pedhazur, 1982, p. 581).

Work Experience. Work experience was defined as work for pay, not counting work around the house (National Opinion Research Center, 1980). Hours worked per week on current or most recent job while in high school were arranged into seven categories: Zero hours (never worked for pay), 1-4, 5-14, 15-21, 22-29, 30-34, and 35 hours or more. Jordean and Heyde (1979) found that individuals who had work experience while in high school became more mature vocationally than those who did not. Additionally, Gholson (1977) reported that among some 13 reasons cited by students for not participating in cocurricular activities, 89 cited employment outside of school as the number one reason. Therefore, it was assumed that work experience would have an effect upon a student's participation in a vocational student organization and consequently the variable FY37 (item # 1392-1393) was included in this study.

High School Grades. Previous research has shown in-school achievement to be related to participation in cocurricular activities (Sweet, 1986; Research Reports, 1987). The literature overwhelmingly supports the

assumption that students' level of academic achievement has an effect upon participation in vocational students organizations, the dependent variable in this study. High school grades (HSGRADES, item # 4348-4349) were computed from courses, credits and grades shown on the high school transcript and based on the traditional 4-point scale.

Ability Scores. A central purpose of the formal education process in secondary schools of our country is the cognitive growth of students. A major focus of the HSB data base was to develop tests which, by periodic administration, would detect cognitive growth. According to USDOE (1986), test scores not only correlate highly with class rank but are, to some degree, an indicator of later success in college. Sweet's 1986 study found that students exhibited high test scores when involved in at least four activities. However, of the 11 cocurricular activity areas investigated in HSB, vocational student organization members scored the lowest (Mean=48.0) in terms of the composite variable FUTEST (item # 44-48) which averages the reading, vocabulary and math outcomes on the cognitive tests. The mean for all activity areas was 50.9. This evidence of test score differences among the 11 groups and previous research regarding the importance of test score outcome and cocurricular participation, warranted the inclusion of this composite variable in the study.

Illustrative Model

The previously described variables are graphically described in an illustrative model (Figure 1) for the purpose of simplifying the longitudinal technique used in HSB and to list the variables collected at the specified point in time.

Missing Data

A problem with extant data bases such as HSB, is that of missing data. The handling of incomplete data (multiple punches and no responses) was accomplished by coding all unusable or non-responses as missing data. This permitted a constant number of the respondents to remain in the study.

Causal Ordering

The proposed path model of the study (Figure 2) included self concept, sex, race, socioeconomic status and base year VSO participation as exogenous variables. Endogenous variables were ability scores, grade point average, and hours worked per week.

These variables were found in previous research efforts to have a positive effect on VSO participation and equally important, occasional conflict within the literature as well. For those reasons, they were included in the model.

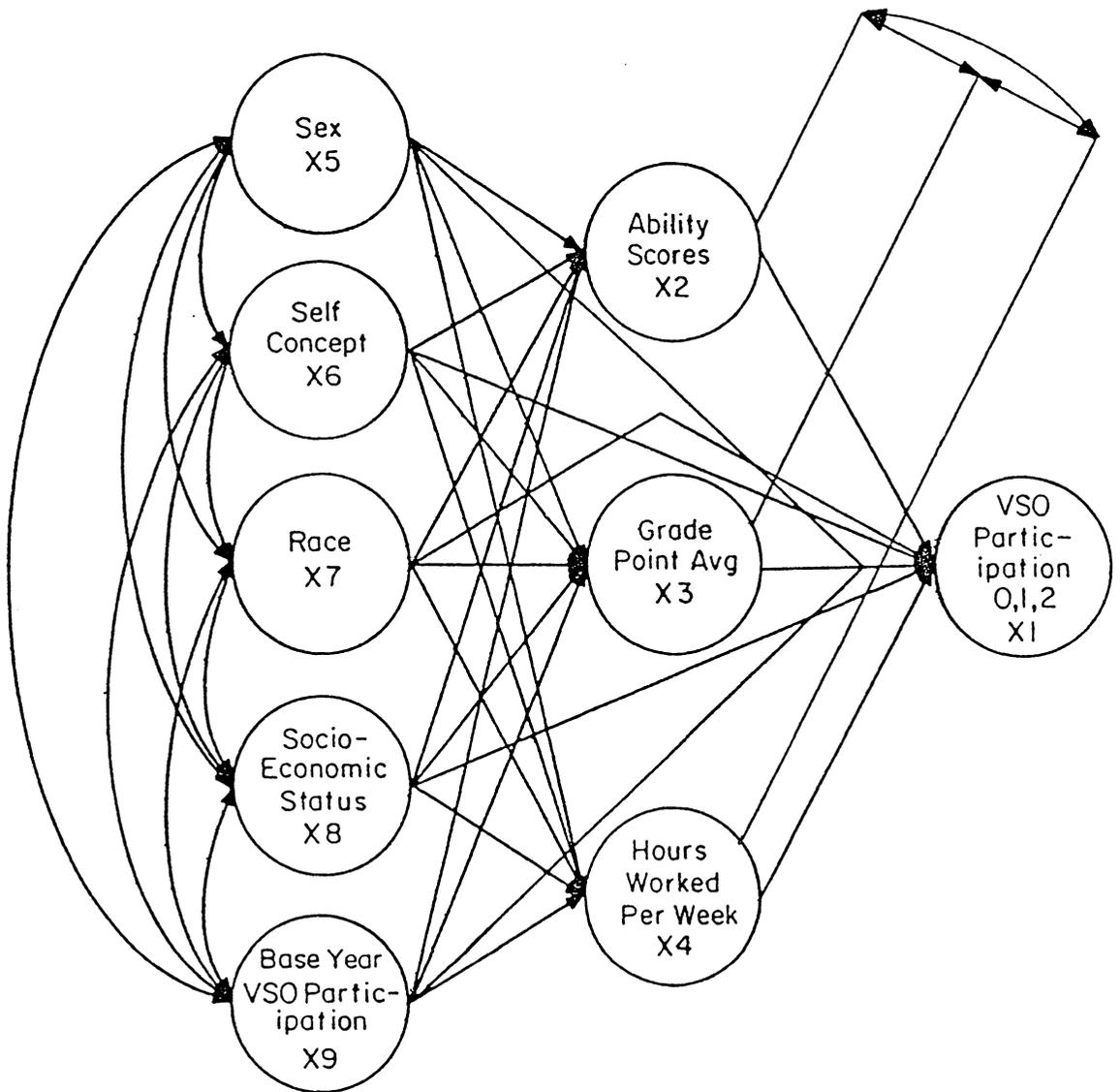


Figure 2. Causal Model of Participation in Vocational Student Organizations by Vocational Education Students.

Analysis of the Data

The first step in the analysis was to determine the distribution of factors that were studied as independent variables in the research. Frequencies and crosstabulations were run and appropriate missing values assigned. Data were analyzed using inferential statistical methods. Hinkle et al., (1979) defined inferential statistics as: "Procedures used by the researcher to draw inferences from knowledge of the statistics of a selected sample to corresponding parameters of the population" (p. 122).

A number of statistical techniques were used to analyze the data for assessing participation in vocational student organizations. Those techniques were correlation, multiple regression and path analysis.

Means, frequencies, percentages and standard deviations were used to address research question one as follows:

(1) What were the academic, personal, and family background variables which descriptively profiled the 1980 High School and Beyond vocational education sophomore cohort?

Pearson's product-moment correlation coefficients (r) were utilized to evaluate research question two which read:

(2) What was the association between and among the variables that reflect participation of high school

sophomores in VSO's and subsequent participation as members or leaders within vocational student organizations as seniors, two years later? Pearson's r was also used to provide preliminary information to research questions three and four. Pearson's r , as opposed to point-biserial correlation, (a special case of the Pearson Correlation), was used for correlational analysis in this study because of its similar outcomes. Ary, Jacobs and Razavieh (1985) recognized such a similarity and stated: "The point-biserial correlation is a mathematical simplification of the Pearson r " (p. 129). Hinkle et al., (1979, p. 99) also referred to point-biserial as a, "special case of the Pearson r " and provided a detailed explanation of such an analysis when they wrote:

With some dichotomies, sex for example, assignment of the 1 and 0 is strictly arbitrary, and the sign of the r_{pb} is dependent upon the meaning in that assignment. Consider the sex dichotomy, female=1 and male=0. If r_{pb} is positive, then the meaning of the relationship between sex of the subject and the variable measured on the interval scale would be that females tended to score higher than males on the variable. (p. 99)

Multiple linear regression was used to determine the nature and magnitude of relationships between the independent variables of cocurricular participation in the senior year of high school (question 3). In multiple regression, "Independent variables $X_1 X_2 X_3 . . . X_K$ are used to predict Y " (Kerlinger, 1973, p. 604). It is important to note that the dependent variable of

participation in a vocational student organization (Y) is a categorical variable which denotes that "Subjects differ in type or kind, a person either belongs to a given category or does not belong to it" (Pedhazur, 1982, p. 271).

Although regression is commonly used with interval or ratio order data, Pedhazur (1982) stated: "It is possible to use categorical variables in regression analysis, but in order to do that it is necessary first to code such variables" (p. 272). The dependent variable of VSO participation was categorized as non-participant, participated actively and participated as a member or leader and was recoded as 0, 1, and 2, respectively.

Path analysis was used as the main statistical method in addressing research question four which stated: What were the direct and indirect effects of the independent variables as implied by a causal model on subsequent participation in vocational student organizations in the senior year?

Path analysis is a generalization of multiple linear regression procedures to arrangements of causally related variables. According to its developer Wright (1921, 1960), path analysis is primarily a method of working out the logical consequences of two assumptions (a) a casual order among test variables is known and (b) the relationships among these variables are causally closed.

Summary

High School and Beyond data were used for this study because the aim of the NELS program correlated well with the main concern of this study. The data were contemporary in nature, national in scope and focused on high school students enrolled in our nation's schools.

The study utilized an ex post facto research design and used both descriptive and inferential statistics to analyze the data. Specifically, correlation, multiple linear regression and path analysis were used to examine the phenomenon of participation in vocational student organizations and furthermore, to explain the effects, both direct and indirect of each independent variable upon the dependent variable.

Chapter 4

PRESENTATION OF THE ANALYSIS

The purpose of this chapter is to present the data collected for inclusion in the study. The analysis is organized into four sections according to the research questions specified in Chapter one. The first section provides descriptive data related to some of the academic, personal and family variables which profile the 1980 High School and Beyond vocational education sophomore cohort. The next section reports the relationships among the variables that reflect participation of vocational high school sophomores in vocational student organizations (VSO's). The third section explains through multiple linear regression, the nature and magnitude of the relationships between those variables and participation in VSO's. The last section addresses the direct and indirect effects of the independent variables as implied by a causal model on subsequent participation in VSO's in the senior year. Although inferences and generalizations are mentioned, specific effects pertinent to the study are discussed in Chapter 5.

Research Question One

What are some of the academic, personal and family background variables which descriptively profiled the 1980

High School and Beyond vocational education sophomore cohort?

For research question one, the analysis is discussed and presented according to associations with the independent variables investigated in this study.

The genders of participants in this study are identified in Table 2 with females comprising 50.8% (n = 3381) of the subsample and males 49.2% (n = 3278), for a sample total of 6659.

Table 2 also presents data related to the racial identity of participants in this study. White students accounted for 60.9% of the subsample while the ethnic categories of Hispanic, American-Indian, Asian or Pacific Islander and Black composed the non-white total of 39.1%

The level of student participation in Vocational Student Organizations, the dependent variable in this study, shows a slight increase from the sophomore through through the senior year; from 15.0% to 25.5%

The pattern of vocational course work taken during high school was one of the criteria by which the subsample was defined for this study. Table 3 reveals that students identified as concentrators accounted for 26.3% of the participants in this study, limited concentrators, 28.0% and samplers 45.7%

Table 2

Frequencies and Percentages of Categorical Variables
Investigated

<u>Category</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Frequency</u>
SEX			
Females	3381	50.8	3381
Males	3278	49.2	6659
RACE			
Whites	4054	60.9	4054
Non-Whites	2605	39.1	6659
BASE YEAR VSO PARTICIPATION			
Non-participant	5412	85.0	5412
Participant	956	15.0	6386
SENIOR YEAR VSO PARTICIPATION			
Non-participant	4793	74.5	4793
Participant	1120	17.4	5913
Leader/Officer	524	8.1	6437

Table 3

Pattern of Vocational Course Work Taken by 1980 Sophomore Cohort Subsample.

<u>Pattern</u>	<u>Frequency</u>	<u>Percent</u>	<u>Cumulative Frequency</u>
Concentrator	1753	26.3	1753
Limited Concentrator	1865	28.0	3618
Sampler	3041	45.7	6659

Equally important is the factor by which pattern of vocational courses completed affected those participating in vocational student organizations. The Chi-square (X^2) statistic performed on senior year VSO participation (3×3) shows that a significant difference ($p < .05$) exists in terms of the number of vocational courses taken and the likelihood of participation in a VSO.

Of the 6659 students subsampled for inclusion in this study, 38.5% categorized themselves as being academic students while 34.1% saw themselves as general students. The remaining 27.3% self-reported their affiliation with one of the seven vocational areas identified in High School and Beyond, as illustrated in Table 5. Of the 6659 students identifying with a particular program in the secondary school, 39.6% were assigned to their identified program whereas only 28.0% actually chose the program themselves.

Continuous variables are summarized in Table 6. The variable of HSGPA, provides a benchmark for determining the students overall academic ability. The mean of 2.64 on a 4-point scale coincides favorably with the self reported data regarding the students best estimate of grades so far in high school, with 26.3% of the subsample reporting their grades to be, "about half B and C, 75-79%." Only 12.1% self-reported all A's and 0.3% of the respondents reported less than a D average.

Table 4.

Frequencies of VSO Participation and Pattern of Course Work Completed by 1980 Sophomore Cohort Subsample.

Category	Pattern of Course Work		
	Concentrator	Limited Concentrator	Sampler
BASE YEAR VSO PARTICIPATION			
Non-participant	1258	1469	2685
Participant	412	312	232
SENIOR YEAR VSO PARTICIPATION			
Non-participant	969	1270	2554
Participant	469	379	272
Leader/Officer	258	145	121

X^2 for Senior Year Participation (3x3 Table) = 530.67

$p < .05$

Table 5

Self-Reported Description of the 1980 Sophomore Cohort's Program

Program	Frequency	Percent	Cumulative Frequency
General	2256	34.1	2256
Academic	2550	38.5	4806
Agriculture	193	2.9	4999
Business	730	11.0	5729
Marketing	136	2.1	5865
Health	93	1.4	5958
Home Economics	100	1.5	6058
Technical	166	2.5	6224
Trade & Industrial	395	6.0	6619

Table 6

The Means, Standard Deviations and Number of Cases Related to Continuous Variables Investigated

Independent Variables	MEAN	SD	Std. Error
FUSES	-0.114	0.730	0.009
FUTEST	51.419	8.868	0.111
FYCONCPT	-0.017	0.730	0.009
FY37	11.763	12.269	0.152
HSGPA	2.645	0.628	0.007
Number of Cases	6659		

The variable FY37 indicates the number of hours per week the student worked for pay. The mean of 11.76 hours per week was found with a surprising number (31.2%) of the respondents indicating no hours worked. Equally important was the fact that 21.5% of the respondents worked between 26 and 41 hours per week. The mean hourly wage rate respondents accepted while in high school was in the \$3.25 - \$3.50 per hour range.

The four questions that contributed to the measure of FYCONCPT were designed on a Likert Scale (1 = agree strongly, 4 = disagree strongly and 5 = no opinion) to reflect the students' assessment about themselves. These scores were then combined to construct the composite self-concept variable FYCONCPT. The statements and their mean score are as follows:

I take a positive attitude toward myself	1.86
I feel I am person of worth, equal to others	1.81
Able to do things as well as most other people	1.79
On the whole, I am satisfied with myself	2.06

FUTEST, one variable used in this study to assess ability in addition to grade point average, combined the reading, vocabulary and math standardized scores for a mean of 51.419. The range on the standardized scale ran from 29.16 to 70.35.

The last variable that was included in the analysis was that of socioeconomic status (FUSES). It is the

standardized composite score of such items as father's occupation, mother's and father's education, family income and material possessions in the home.

Of the 19 occupational categories described in the HSB questionnaire, the most frequently named response for father's occupation was that of a craftsman (baker, automobile mechanic, machinist, painter, plumber, carpenter, etc.) at 15.2%. The next occupational category mentioned was operative at 14.1%, manager, 13.5% and laborer, 10.0%.

In relation to the parents highest level of education, 22.9% of the respondents' fathers and 20.4% of the mothers did not finish high school. A higher proportion of mothers had finished high school (37.4%) than had fathers (27.8%). A higher percentage (17.5%) of the fathers had four or more years of college (B.S., M.S., or Ph.D.) compared to mothers at 11.7%.

Family income is a self-reported component of the composite FUSES variable. The mean family income for respondents in this sample was \$26,425.00 per year.

It is interesting to note that in relation to the students progress in school and career plans thereafter, the mother, according to the students perception, kept track of the students progress in school to a greater degree than did the father (82.6% verses 65.2%). The mother also had a great deal to do with influencing the

student's post high school plans compared to the father (44% to 35%)

Research Question Number 2

What is the relationship between and among the variables that reflect participation of vocational high school sophomores in VSO's and subsequent participation as members or leaders within VSO's as seniors, two years later?

A zero-order correlation matrix is presented in Table 7. The intention of analyzing such variables in this format is to determine if there is an association among certain variables and equally crucial, to evaluate the coefficients for problems of multicollinearity.

None of the statistically significant correlations achieved an r value higher than .559, which indicates a moderately positive relationship between ability scores and high school grade point average. The second highest r value is that of FUTEST and FUSES ($r = .371$). Other than these two r values, the coefficients indicated in Table 7 do not appear to have any tendencies towards multicollinearity.

Correlations ranged from .001 to the previously mentioned r of .559. All independent variable correlations with the dependent variable are statistically significant, with the exception of FYCONCPT ($r = -.019$) and HSGPA ($r = -.001$). Therefore, even though statistical significance

Table 7.

Zero-Order Correlation Coefficients Among Independent and Dependable Variables Investigated

	FUTEST	FUSES	FYCONCPT	FY37	BB032L	HSGPA	RACE	SEX	FY38L
1. FUTEST	1.000								
2. FUSES	0.371*	1.000							
3. FYCONCPT	-0.134*	-0.098*	1.000						
4. FY37	-0.118*	-0.017	0.006	1.000					
5. BB032L	-0.117*	-0.101*	0.006	0.046*	1.000				
6. HSGPA	0.559*	0.217*	-0.133*	-0.151*	0.025*	1.000			
7. RACE	-0.329*	-0.287*	-0.033*	-0.014	0.018	-0.185*	1.000		
8. SEX	0.062*	0.034*	-0.028*	0.193*	-0.076*	-0.165*	0.028*	1.000	
9. FY38L	-0.154*	-0.107*	-0.019	0.064*	0.358*	-0.001	0.043*	-0.078*	1.000

Note. FUTEST=Ability Scores, FUSES=Socioeconomic Status, FYCONCPT=Self-Concept, FY37=No. of Hours Worked/Week, BB032L=Base Year VSO Participation, HSGPA=High School Grade Point Average, FY38L=Senior Year VSO Participation

* p = <.05

exists among the correlations produced, the practical explanatory significance of some of the r values is precariously in doubt.

Research Question Number 3

What is the nature and magnitude of the relationships between the independent variables gathered from the sophomore cohort and a measure of cocurricular participation in the senior year of high school?

Multiple linear regression was used to address research question number 3 and results of the analysis are shown in Table 8. The notes at the bottom of Table 8 display the direct effect, Beta; the unstandardized slope, b ; the computed t value, t ; the F ratio, the n of the sample, the intercept, and the percentage of the variation (R^2) in the dependent variable explained by the eight combined independent variables regressed upon the dependent variable of senior year VSO participation. It is also important to note that this study bases its findings and conclusions on the Beta regression coefficients determined as a part of the regression equation, as opposed to the use of b , the unstandardized regression coefficient. Pedhazur (1982) notes:

A relatively large b may be neither substantively meaningful nor statistically significant. In multiple regression analysis one should not compare the magnitude of the b 's associated with different X 's when attempting to determine the relative importance of variables. Because of the incompatibility of b 's,

Table 8

Regression Results of Selected Independent Variables on Participation in Vocational Student Organizations by Vocational Education Students in 1982.

Variables	b	Beta	<u>t</u>
INTERCEPT	0.55343667	0.000	
BB032L	0.587	0.337	26.67*
FUSES	-0.039	-0.046	-3.39*
FUTEST	-0.010	-0.145	-8.84*
FYCONCPT	-0.029	-0.034	-2.69*
FY37	0.002	0.044	3.49*
HSGPA	0.087	0.086	5.59*
RACE	-0.010	-0.007	-0.58
SEX	-0.046	-0.037	-2.83*

* $p < .05$

Notes.

b = unstandardized slope

Beta = standardized slope

t = computed t value

F ratio = 128.73

n = 6659

R² = .158

researchers who wish to speak of relative importance of variables resort to comparisons among Beta's, as they are based on standard scores. (p. 64)

For the dependent variable of senior year VSO participation, only 16% of the variation can be explained by the combination of independent variables investigated. The regression coefficients for base year VSO participation (BB032L), socioeconomic status (FUSES), ability scores (FUTEST), self-concept (FYCONCPT), number of hours worked per week (FY37), high school grade point average (HSGPA), and sex (SEX) are statistically significant at $p < .05$.

Polynomial transformations of the data were also attempted by the writer. Second degree curvilinear relationships were examined through analysis of the variables as submitted and squared, then backed out of the equation one at a time. This method failed to significantly improve the R^2 to any degree.

A negative (-) sign indicates that a lower score on the independent variable is associated with a higher score on the dependent variable or vice versa. For example the variable SEX (coded 1 for males and 0 for females) has a negative and significant relationship with senior year VSO participation. Thus, it is concluded that females tend to be more involved with VSO's in the senior year of high school. Other significant negative regression coefficients are FUSES, FUTEST, FYCONCPT, and RACE ($p < .05$).

Research Question Number 4

What are the direct and indirect effects of those identified independent variables as implied by a causal model of subsequent participation in vocational student organizations in the senior year?

Path coefficients (Beta weights or direct effects) between the endogenous variables of FY38L, X_1 ; FUTEST, X_2 ; HSGPA, X_3 ; and FY37, X_4 and exogenous variables of SEX, FYCONCPT, RACE, FUSES, and BB032L are calculated and are shown in Table 9. This method of calculating path coefficients is supported by Pedhazur (1982). He writes:

In sum, then, when variables in a causal model are expressed in standardized form (z scores), and when the assumptions discussed previously are reasonably met, the path coefficients turn out to be standardized regression coefficients (Beta's) obtained in the ordinary regression analysis. (p. 587)

Pedhazur elaborates further that:

In path analysis, on the other hand, more than one regression analysis may be called for. At each stage, a variable taken as dependent is regressed on the variables upon which it is assumed to depend. The calculated Beta's are the path coefficients for the paths leading from the particular set of independent variables to the dependent variable under consideration. (p. 587)

Based on the findings of Pedhazur, the appropriate coefficients are placed on the directional paths in the Causal Model Indicating Direct Effects of Participation in Vocational Student Organizations by Vocational Education Students (Figure 3). In accordance with research question number 4, the path coefficients are decomposed into two

Table 9

Path Coefficients Between Exogenous and Endogenous Variables Investigated.

Exogenous Variables	Endogenous Variables			
	X ₁	X ₂	X ₃	X ₄
FUTEST	-.145*	-	-	-
HSGPA	.086*	-	-	-
FY37	.044*	-	-	-
SEX	-.037*	.073*	-.159*	.197*
FYCONCPT	-.034*	-.115*	-.129*	.014
RACE	-.007	-.238*	-.123*	-.021
FUSES	-.046*	.275*	-.171*	-.026*
BB032L	.337*	-.086*	.032*	.060*
R2	.158	.204	.099	.041

* $p < .05$

Note. X₁=senior year VSO participation, X₂=ability scores, X₃=high school grade point average, and X₄=number of hours worked/week.

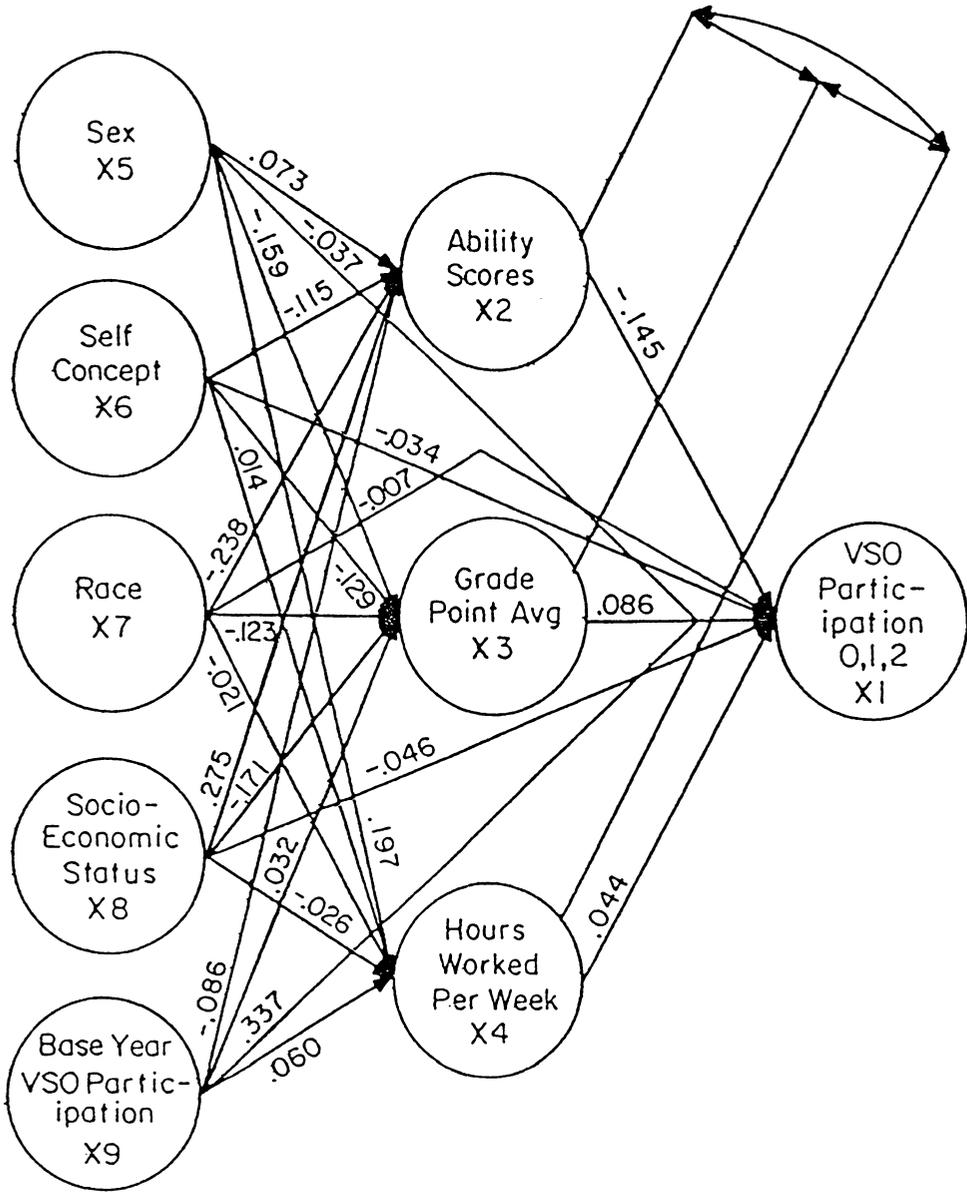


Figure 3. Causal Model Indicating Direct Effects of Participation in Vocational Student Organizations by Vocational Education Students.

Table 10

Indirect Effects (IE) Upon Senior Year VSO Participation
According to Exogenous Variables Investigated.

Exogenous Variables	Metric IE	Standardized IE
SEX	-.0145*	-.0105*
FYCONCPT	.6094*	.0088*
RACE	.0346*	.0272*
FUSES	-.0270*	-.0317*
BB032L	.0300*	.0174*

* $p < .05$

components: (1) Direct Effects (DE); and Indirect Effects (IE). The sum of the DE and IE is the Total Effect or the effect coefficient. Table 10 shows both the metric and standardized indirect effects of the independent variables upon the dependent variable of senior year VSO participation. The indirect effects are calculated using the GEMINI Program for Analysis of Structural Equations written by Wolfle and Ethington (1985). Pedhazur (1982), defines indirect effects as: "Part of the effect of the independent variable that is mediated, or transmitted by another variable or other variables" (p. 181). The exogenous variables of SEX, FYCONCPT, RACE, FUSES and BB032L has significant indirect effects upon the variable of senior year VSO participation.

SUMMARY

Chapter four dealt with the analysis and presentation of the data. A complete analysis of the data for each of the research questions was presented. Multiple linear regression and path analysis procedures were the main statistical tools utilized in addressing the causal model proposed for inclusion in this study.

Chapter 5

SUMMARY, CONCLUSIONS, RECOMMENDATIONS AND DISCUSSION

The purpose of this chapter is to provide a summary of the study followed by a discussion of the conclusions and recommendations based on the findings of the analyses.

SUMMARY

Introduction

Vocational education, as a vital part of the secondary school curriculum, has relied upon youth organizations as the student activity that helps bolster and provide meaningful, practical, real-life experiences within the classroom and the work place. With more than 90% of all high school students in the United States taking at least one vocational course in their four-year programs, opportunity abounds for participation by most students in VSO's. In 1985, some 1.5 million students participated in the eight secondary level vocational student organizations that supplement the vocational curriculum. Equally important are the benefits derived from such participation. Such professional and personal qualities as one's positive personal attitudes, appreciation of the work ethic, productivity, community participation, contact (as a student) with the real world, social growth, and the chance

to develop leadership roles and conduct adult-like activities within a safe environment are the underlying assumptions guiding the agendas of the secondary student organizations serving today's vocational education student.

Purpose of the Study

The problem investigated in this study was to determine what biographical and demographical variables most accurately explain the nature and magnitude of participation in vocational student organizations. Specifically, the study analyzed variables related to high school students' level of participation in vocational student organizations and their subsequent participation as non-members, members or leaders within these student organizations. The specific questions to be answered by this study were:

1. What were some of the academic, personal and family background variables which descriptively profiled the 1980 High School and Beyond vocational education sophomore cohort?

2. What is the relationship between and among the variables that reflect participation of vocational high school sophomores in vocational student organizations and subsequent participation as members or leaders within vocational student organizations as seniors, two years later?

3. What is the nature and magnitude of the relationships between the independent variables identified in Chapter 2 and a measure of cocurricular participation in the senior year of high school?

4. What are the direct and indirect effects of those identified independent variables as implied by a causal model of subsequent participation in vocational student organizations in the senior year?

Research Procedure

This study utilized an ex post facto research design which used information from an existing data base referred to as High School and Beyond (HSB). The 1980 sophomore cohort was classified into a subsample of vocational education students according to transcript generated data and then analyzed according to variables (determined through a review of the literature) which were believed to best explain the nature and magnitude of participation in VSO's two years later, as seniors. A path analysis model was the main statistical method used in the study. It included a dependent variable, senior year VSO participation, and independent variables such as sex, race, GPA, ability scores, sophomore year VSO participation, number of hours worked per week, self-concept, and socioeconomic status. It was from the path model that direct and indirect effects were determined among independent variables.

Findings

The findings of this study were discussed as they relate to each research question.

Research Question Number 1. What were some of the academic, personal and family background variables which descriptively profiled the 1980 High School and Beyond vocational education sophomore cohort?

Descriptive statistics indicated that the 1980 vocational education sophomore cohort of HSB was distributed fairly equally when considering the sex of the respondents (50.8% for males, 49.2 for females). Almost two-thirds of the subsample (60.9%) were classified as white as opposed to 39.1% being categorized as non-white. Another personal variable indicated that the typical respondent in this study worked an average of almost 12 hours per week at between \$3.25 and \$3.50 per hour.

In examining several variables regarding the students' academic background, the analysis provided insight into the participation of vocational education students in VSO's. Some 15% of the sophomore cohort indicated that they were actively involved with VSO's as opposed to 85% not being involved. As seniors, the portion of the subsample actively involved either as leaders, officers or active participants grew to 25.0%. The largest proportion of those participants were classified as either vocational concentrators or limited concentrators according to the

transcript data specifying the course work taken by the respondent. It is particularly interesting to note that the largest category indicating pattern of courses taken was that of samplers (45.7%), those students who have earned from a fraction of a credit to four credits in vocational education.

Equally important was the fact that participation in VSOs was significantly different when compared by the courses completed in vocational education by vocational education students.

When assessing the students self-reported program affiliation, 38.5% reported themselves as being academic students in contrast to general education students who accounted for 34.1% of the responses in the subsample. Vocational education students could identify with any of six areas ranging from agriculture to trade & industrial education. Only 27.4% of the sample reported themselves as being identified with a particular vocational education service area.

The variables used to measure ability of the respondent were also scrutinized. The HSB ability follow-up test score averaged 51.41 out of a possible 70 points. The variable HSGPA, used to measure ability as well, averaged 2.645 on the traditional 4-point scale. This transcript grade coincided favorably with the students self reported grades of about half B and C, 75-79%.

Variables related to the students' family orientation were also evaluated in accordance with question number 1. Father's occupation, as reported by the student in the composite FUSES variable, showed 15.2% of the fathers in such fields as: bakers, automobile mechanic, machinist, painters, plumbers, and carpenters. Other categories mentioned by students were operative at 14.1%, manager, 13.5% and laborer at 10.0%. More mothers had finished high school (80%) than had fathers (77%). Of the fathers, 17.5% had four or more years of college while only 11.7% of the mothers had attained an undergraduate degree. The student's mother was also the most concerned about the student's future. In relation to the student's progress in school and career plans thereafter, the mother kept a closer account of the student's progress in school than did the father (82.6% verses 65.2%). The student's mother also had a great deal to do with influencing post high school plans as compared to the father (44% to 35%).

Research Question Number 2. What is the relationship between and among the variables that reflect participation of vocational high school sophomores in vocational student organizations and subsequent participation as members or leaders within vocational student organizations as seniors, two years later?

A correlation matrix containing all the variables investigated was evaluated to answer the previously stated

question. Another intent of the analysis was to determine if multicollinearity was present in the data.

All the variables analyzed for inclusion in this study correlated significantly ($p < .05$) with the dependent variable of senior year VSO participation, except FYCONCPT ($r = -0.019$) and HSGPA ($r = -0.001$). The highest positive correlation exhibited in the data was the relationship between base year VSO participation (BB032L) and senior year VSO participation ($r = .358$). Other positive correlations were number of hours worked per week (FY37, $r = .064$); and RACE ($r = .043$).

The other five correlations all exhibited negative relationships with the dependent variable of senior year VSO participation. The variable FUTEST, one indication of academic ability used in the study, provided the largest negative r value at $r = -.154$. Next was the variable FUSES, which provided information on the respondent's socioeconomic background and yielded a correlation coefficient of $r = -.107$. The independent variable of SEX provided a r value of $-.078$. The remaining two variables, FYCONCPT and HSGPA respectively provided r values of $-.019$ and $-.001$.

Research Question Number Three. What is the nature and magnitude of the relationships between the independent variables identified in Chapter 2 and a measure of cocurricular participation in the senior year of high

school?

Research question number three was analyzed using the SAS program REG to determine the beta weights that best explained the phenomenon of participation in VSO's during the senior year of high school. For the dependent variable of senior year VSO participation, only 16% ($R^2 = .158$) of the variation could be explained by the linear combination of independent variables investigated. Examination of the same variables in terms of second degree curvilinear relationships failed to significantly improve the R^2 .

All beta weights calculated in the regression equation for the full model were statistically significant at the $p < .05$ level with the exception of RACE (Beta = $-.007$). The independent variable of BB032L which indicated base year affiliation with a VSO, proved to be the one variable that best explained the magnitude of participation in VSOs during the senior year (Beta = $.337$). Other positive beta weights explaining the nature of senior year VSO participation were HSGPA ($.086$) and FY37 ($.044$).

Negative beta weights appearing in the analysis were for the variables of FUTEST ($-.145$), FUSES ($-.046$), SEX ($-.037$) and FYCONCPT ($-.034$)

Research Question Number 4. What are the direct and indirect effects of the identified independent variables as implied by a causal model of subsequent participation in vocational student organizations in the senior year?

The path coefficients or beta weights indicate the direct effects of exogenous variables on the endogenous variables in the causal model. These direct effects were illustrated in Figure 3 on page 100. The highest positive direct effect was that of base year VSO participation on senior year VSO participation (.337). The greatest negative direct effect is that of race on ability scores (-.238)

Indirect effects for the study were calculated using the GEMINI Program and all were found to be significant at $p < .05$. The variable with the largest indirect effect was RACE (.0272) followed by base year VSO participation (.0174) and FYCONCPT (.0088). Negative indirect effects exhibited in the data were FUSES (-.0317) and SEX (-.0105).

CONCLUSIONS

The presentation of the data and interpretation of the findings in this study support the following conclusions.

1. Respondents identified in this study as vocational education students were found to have the following characteristics: (a) not biased according to sex, the chances of selecting a male or female respondent were virtually equal, (b) white, (c) employed 12 hours per week, (d) good self concept of themselves, (e) medium to low SES, (f) above average test scores, (g) average to above average grades, (h) father employed as a craftsman, (i) parents educated through high school, (j) participating to a

greater degree in VSOs as more units of vocational education are completed, (k) taking between one and four units of vocational education during high school, (l) having mothers who provided a greater influence over them as opposed to other adult-like figures.

2. The ability scores, grade point averages, sex, number of hours worked per week, and father's education imply that such students identified for inclusion in this study conflict with many of the studies cited previously regarding the labeled "vocational student." Specifically, the reported findings counter studies cited by Creech et al., (1975) and Cunningham (1985) related to such factors as father's education (22.9% did not finish high school verses Creechs' reported number of 42% & Cunningham's 56%).

The results of this study also counters the work of Gholson and Buser (1981), Gholson (1976/1977), and Bell (1964) in regard to the sex of VSO participants. Overall, those studies indicated that females were more likely to participate in cocurricular activities as opposed to their male counterparts; whereas, the results of this dissertation indicated the chances were virtually equal for either male or female to participate. Equally important was the factor of achievement variables investigated in the study. The above average GPA and Ability Test scores found in this study concurred with the previously cited studies by Sweet, (1986) and Research Reports (1987) which

found that vocational education students with above average abilities were more likely to participate in such cocurricular activities. Furthermore, the number of hours worked per week by vocational education students differed as well. Creech et al., (1975) said that such students were found to work 20 hours per week as opposed to 12 hours per week found in this study.

3. Base year VSO participation was the only variable that provided a substantive affect on senior year VSO participation to a practical degree, thus one could conclude and expect a sophomore who has been an active participant in a VSO to continue doing so thru the senior year of High School. This conclusion compares very favorably with the Rehberg & Schafer (1973) study indicating sophomore year participation in student organizations was a major determinant of senior year participation for both males and females.

4. Base year VSO participation was also found to be the variable which best explains the nature and magnitude of the respondent's participation in VSOs during the senior year of high school.

5. The indirect effects of self-concept, sex, race, socioeconomic status, and base year VSO participation when transmitted through ability scores, hours worked per week and GPA, are important considerations to account for. However, the data lacks any practical value or serious

consequence for explaining the magnitude of participation in VSOs during the senior year of high school.

RECOMMENDATIONS

Based on the findings and conclusions of this study, the following recommendations are made.

1. The findings, conclusions and recommendations of this study should be made available to the executive directors/secretaries of the eight vocational student organizations.

2. When the study is made available to such individuals, it should be made known that the traditionally cited factors in many studies that were thought to have impacted upon participation in VSOs in the senior year of high school simply do not affect such participation. The variables investigated in this study, namely: ability, grade point average, number of hours worked per week, sex, self-concept, and socioeconomic status, although important, lack any practical value or serious consequence for explaining the magnitude of participation in VSOs.

3. Research is needed to determine what other variables more substantially affect the participation of vocational students in their respective student organizations.

4. Research is needed to determine what factors other than those identified in HSB, substantially effect and explain the nature and magnitude of participation in

vocational student organizations.

5. Leaders of vocational student organizations should attempt to attract students in lower grade levels (grades 9 & 10) to become active participants in their respective student organization.

6. VSOs like those in the technical service area (VICA & TSA), which only allow upper grade level participation (grades 11 & 12), should consider the admission of freshmen and sophomores who are potential students in the respective vocational service area.

7. Leaders of the other vocational student organizations should consider the possibility of having students in grades 7 or 8 actively participate in the programs and activities available to members currently participating in such activities in grades 9-12.

8. Leaders of the vocational student organizations should consider involving in VSOs students who have a greater number of vocational education units to their credit.

9. Researchers in vocational education should become more familiar with the use of causal analysis and the application of secondary analysis of extant data bases as practical tools for social science research.

DISCUSSION

This research suggests that while the eight variables identified through the review of literature have some

impact on senior year vocational student organization participation, much of the variation in such participation is caused by factors other than those variables. The review of the literature yielded variables that provided weak substantive evidence upon which to base such a study. However, secondary analysis, as a research method, only provides you with what you see - - then you go to work on those factors or variables that you feel, in some distinct way, impact on the question you are addressing. As previously mentioned in this chapter, there may be other variables that explain to a larger degree, the variance associated with participation in VSOs and then again, there may not be such factors available to the social science researcher explaining such participation.

The phenomenon of participating in vocational student organizations may be so individual, personalistic and abstract, that no systematic rationale or cause could explain the involvement of such students, given the data available and the responsiveness of the students. The question might therefore lend itself to a qualitative approach or naturalistic means of longitudinal inquiry into the nature and likelihood of such participation.

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APPENDIX A
SAS SYSTEM FILE

The following SAS program was assembled to create a SAS system file of the HSB data analyzed in this dissertation. The Job Control Lines or statements (indicated by the //) and the comment lines (indicated by /*) are also included for completeness in analyzing the data available. The only item removed (substituted with X's) was the LONGKEY on line 2. The symbol ## along the left margin was inserted to better aquanaut the reader with the various manipulations done throughout the system file. They were not included in the analysis as submitted to the computer.

```
//A287BJJ JOB 44F55,JEFFREYS,REGION=1536K,TIME=5
/*LONGKEY XXXXXXXX
/**
/**PURPOSE: TO COMPILE A SYSTEM FILE IN WHICH I CAN PULL
/**          OUT CERTAIN VARIABLES ON THE 1980 SOPHOMORE
/**          CLASS AND USE SAS PROCEDURES ON THEM
/**          INDIVIDUALLY OR COMBINED WITH OTHER FACTORS.
/**          CMS FILE=DISS VSO
/**
/*PRIORITY STANDARD
/*JOBPARM LINES=40,ACCTPG
//ROUTE PRINT VTMVS1.LOCAL
/**
//STEP1 EXEC SAS
/** *****
/** STEP 1 CREATES A NEW SAS SYSTEM FILE, SAVES IT TO DISK
/** AND RUNS SAS PROCEDURES ON IT
/** *****
//HSBIN DD DSN=A30459.HSB.A84.SOPH.RAW,
//          DISP=(OLD,KEEP)
//HSBOUT DD DSN=A44F55.HSBBRAD.DATA,
//          UNIT=DISK
//          DISP=(NEW,CATLG),
//          SPACE=(TRK,(100,20),RLSE)
//SYSIN DD *
```

The following step tells the computer to only read the variables indicated below and save them to a disk file named HSBBRAD.DATA

```

DATA ALLDATA; INFILE HSBIN;
INPUT ID 1-6 BYPART 8 FU1PART 9 FUSTTYPE 11 SOQFLAG 12
SEX 30 RACE 31 FUTEST 44-48 .2 FUSES 50-54 .3
FYCONCPT 56-59 .2 FYLOCUS 60-63 .2 BB002 236-237 BB032L 432
FY 1229-1230 FY3A 1231 FY3E 1235 FY7 1289-1290 FY15
1323-1324 FY34 1386-1387 FY35 A388-1389 FY37 1392-1393
FY38L 1405 FY55 1470-1471 FY56 1472-1473 FY120 1753-1754
FY57A 1474 FY57B 1475 FY62A 1501 FY62B 1502 FY75A 1588
FY75H 1595 FY75C 1590 FY75D 1591 FY111 1717-1718 FY121 1755
HSPROG 4350 HSTYPE 4355 FY53A 1466-1467 PAREduc 4369-4370
VCONPATN 4472 TRPART 4373 HSGPA 4378-4380 .2;

```

The following step assigns a narrative label to each variable analyzed in the data set

```

LABEL      BB002='HIGH SCHOOL PROGRAM'
           FUTEST='FOLLOW UP TEST COMPOSITE'
           FUSES='FOLLOW UP SES COMPOSITE'
           FYCONCPT='SELF CONCEPT COMPOSITE SCORE'
           FYLOCUS='FOLLOW UP LOCUS OF CONTROL'
           FY2='DESCRIPTION OF HIGH SCHOOL PROGRAM'
           FY3A='ASSIGNED TO THIS PROGRAM'
           FY3E='CHOSE PROGRAM MYSELF'
           FY7='GRADES SO FAR IN HIGH SCHOOL'
           FY15='AVG TIME SPENT ON HOMEWORK PER WEEK'
           FY34='LOW HRLY WAGE RATE ACCT IN HIGH SCHOOL'
           FY35='LOW HRLY WAGE RATE ACCT AFTER HIGH SCHOOL'
           FY37='HRS A WK WORK FOR PAY LAST SCHOOL YEAR'
           FY38L='SENIOR YEAR PARTICIPATION IN VSO'
           FY53A='FATH MOST RECENT JOB'
           FY55='FATHERS HIGHEST LEVEL OF EDUCATION'
           FY56='MOTHERS HIGHEST LEVEL OF EDUCATION'
           FY57A='MOTHER KEEPS TRACK OF PROGS IN SCHOOL'
           FY57B='FATHER KEEPS TRACK OF PROGS IN SCHOOL'
           FY62A='FATHER INFL PLANS AFTER HIGH SCHOOL'
           FY62B='MOTHER INFL PLANS AFTER HIGH SCHOOL'
           FY75A='TAKE A POSI SELF ATT ABOUT SELF'
           FY75C='PERSON OF WORTH, EQL TO OTHERS'
           FY75D='ABL TO DO THINGS AS WELL AS OTHERS'
           FY75H='ON THE WHOLE, SATIS WITH MYSELF'
           FY111='YEARLY FAMILY INCOME DIV BY 8THS'
           FY121='ACCT BY A VTE, TRDE SCHL OR APP PROG'
           BB032L='SOPHOMORE YEAR VSO PARTICIPATION'
           FY120='FLD WOULD TRAIN FOR AT TRD, VTE SCHOOL'
           HSGPA='GPA ON TRANSCRIPT STUDY'
           HSPROG='COMP OF BY&FFU PROGRAM CHOICE'
           HSTYPE='RESP. ORIG HIGH SCHOOL TYPE';

```

```
## The following statement selects only those observations
for which base year participants (BYPART), follow-up
participants (FU1PART), in school participants (FUSTYPE),
students that had transcript data (TRPART), and public
school students (HSTYPE) had valid observations.##
```

```
IF BYPART=1 AND FU1PART=1 AND FUSTYPE=1 AND TRPART=1 AND
HSTYPE=1;
```

```
## The following statements assign missing values to
variables designated for analysis through the use of a
period. ##
```

```
IF FUTEST    GE    71.0 THEN FUTEST    =.;
IF FUSES     GE     2.1 THEN FUSES     =.;
IF BB032L    GE     6 THEN BB032L     =.;
IF FY38L     GE     6 THEN FY38L     =.;
IF FY57A     GE     6 THEN FY75A     =.;
IF FY57B     GE     6 THEN FY75B     =.;
IF FY62A     GE     6 THEN FY62A     =.;
IF FY62B     GE     6 THEN FY62B     =.;
IF FY75C     GE     6 THEN FY75C     =.;
IF FY75D     GE     6 THEN FY75D     =.;
IF FY75A     GE     6 THEN FY75A     =.;
IF FY75H     GE     6 THEN FY75H     =.;
IF FY121     GE     6 THEN FY121     =.;
IF FYCONCPT  GE     8 THEN FYCONCPT  =.;
IF FY3A      GE     8 THEN FY3A      =.;
IF FY3E      GE     8 THEN FY3E      =.;
IF FYLOCUS   GE     8 THEN FYLOCUS   =.;
IF HSPPROG   GE     8 THEN HSPPROG   =.;
IF PAREduc   GE    98 THEN PAREduc   =.;
IF VCONPATN  GE     8 THEN VCONPATN  =.;
IF HSGPA     GE    4.01 THEN HSGPA    =.;
ARRAY MVA    FY2 FY7 FY15 FY34 FY35 FY37
              FY53A FY55 FY56
              FY111 FY120 BB002;
DO OVER MVA;
IF MVA       GE     96 THEN MVA=.;
END;
```

```
## The following statement recodes variable values. ##
```

```
IF SEX = 2 THEN SEX = 0;
IF RACE = 5 THEN RACE = 0;
IF RACE > 0 THEN RACE = 1;
BB032L =          BB032L -1;
FY38L  =          FY38L  -1;
IF FY37 = 1 THEN FY37 = 0;
```

```
IF FY37 = 2 THEN FY37 = 2.0;
IF FY37 = 3 THEN FY37 = 9.0;
IF FY37 = 4 THEN FY37 = 17.5;
IF FY37 = 5 THEN FY37 = 26.0;
IF FY37 = 6 THEN FY37 = 32.5;
IF FY37 = 7 THEN FY37 = 37.0;
IF FY37 = 8 THEN FY37 = 41.0;
```

```
DATA HSBOUT.HSBFILE; SET ALLDATA;
```

```
## The following statement selects only those students who
are defined as vocational students. ##
```

```
IF VCONPATN=1 OR VCONPATN=2 OR VCONPATN=3;
PROC CONTENTS DATA=HSBOUT._ALL_;
/*
//
```

APPENDIX B
SOURCE AND CODING OF VARIABLES

The following appendix provides specific documentation needed to ascertain manipulation of the independent and dependent variables investigated in this study.

Senior Year VSO Participation. Senior year VSO participation, the dependent variable, identified as FY38L in the dissertation was obtained from the first follow-up of the High School and Beyond (HSB) sophomores in 1982. The students were asked: Have you participated in any of the following types of activities either in or out of school this year? Students could choose from 17 categories ranging from (a) varsity team athletics to (q) sororities or fraternities. The one category used in this study was: (l) vocational education clubs, such as Future Homemakers, Teachers, Farmers of America, DECA, FBLA, or VICA. The three possible responses to those indicating involvement in VSO's were: Have not participated (coded 0), have participated actively (but not as a leader or officer, (coded 1), and have participated as a leader or officer (coded 2). FY38L was coded according to the criteria outlined by Pedhauzer (1982) in using categorical variables in the regression model. The tape location of the variable is 1405.

Ability Scores. One independent variable that identifies the student's academic ability is the measure FUTEST (tape position 44-48). This composite variable is an average of the first follow-up non-missing reading, vocabulary, and math standardized scores. If all three scores are missing, the composite score is missing.

Grade Point Average. Another independent variable in the study that assesses the student's academic ability is grade point average. The variable HSGPA (tape position 4378-4380 .2) was computed from courses, credits and grades shown on the high school transcript obtained as part of the 1982 High School and Beyond Transcript Survey. This information was only available for those students who were included in the transcript sample from HSB and, accordingly, included as a component in defining the sub sample for this dissertation. HSGPA was based on a 4-point scale.

Hours Worked Per Week. The independent variable FY37 asked students: During the school year before this one, about how many hours per week on the average did you work for pay outside your own home? Responses to this question were recoded to provide interval data on the mean number of hours worked per week by respondents. A linear relationship was thereby assumed and the following coding scheme devised.

Questionnaire Response	Code
1. None	Zero hours
2. 1-4 hrs. per week	2.0 hours
3. 5-14 hours per week	9.0 hours
4. 15-21 hours per week	17.5 hours
5. 22-29 hours per week	26.0 hours
6. 30-34 hours per week	32.5 hours
7. 35-40 hours per week	37.0 hours
8. 41 or more hours per week	41.0 hours

The tape position of the variable FY37, was 1392-1393.

Sex. The variable specifying the students sex (tape position 30) and referred to throughout this study as SEX, was available in three separate survey documents: The base year questionnaire, the base year student identification pages and the first follow-up questionnaire. If one or more of these sources contained a valid sex code (and if the non-missing sources did not conflict), the code was taken for the composite sex variable. For use in this study, females were recoded to 0 and males were left at the HSB assigned code of 1.

Self Concept. The variable which provided information on the respondents' self esteem or self concept was labeled FYCONCPT (tape position 56-59 .2) and was based on the same four psychological scales in the 1980 base year questionnaire as in the first follow-up questionnaire. Those scales or questions centered on the question: How do you feel about each of the following statements? Based on a Likert Scale (where 1=agree strongly, 4=disagree strongly and 5=no opinion) the four statements were:

1. I take a positive attitude toward myself
2. I feel I am a person of worth; on an equal plane with others.
3. I am able to do things as well as most other people.
4. On the whole, I am satisfied with myself.

Much like other composite variables in the HSB data set, the composite variable FYCONCPT was standardized and the non-missing components were averaged. Students missing all the components of any scale were assigned the missing value for the specific variable.

Race. The variable RACE, (tape position 31) was based on race and ethnic origin codes which were available from both the base year and first follow-up questionnaires. To facilitate the differences as expressed by the review of literature, the categories of race were recoded to include white students in one nominal group (code=0), and non-white students which included American Indian, Alaskan Native,

Asian or Pacific Islander, Black, and Others as the other nominal group (code=1). These race categories were developed according to a hierarchical sequence linking those students who identified with a particular ethnic category within a race to a broader racial category.

Socioeconomic Status. The first follow-up socioeconomic status composite variable labeled FUSES (tape position 50-54 .3) was constructed using first follow-up data and the same procedures employed in the base year questionnaire. The composite variable was based on five components: (1) father's occupation, (2) father's education, (3) mother's education, (4) family income and (5) material possessions in the household, and was the simple average of the non-missing components after each score had been standardized. Father's occupation was evaluated by assigning a standardized score to the various levels of occupations provided by respondents. Examples of such occupations would be Clerical, Craftsman, Farmer, Homemaker, Manager, Military, Laborer, Operative, Professional, Proprietor, Protective Service, Sales, Service School Teacher, and Technical. The parents' education was evaluated according to nine levels of schooling attained that ranged from less than high school to advanced professional degree or Ph.D. Family income was divided accordingly by eighths and self-reported according to the student's perception as to the amount of money the family makes in a year. Material possessions in the home took into account such items as newspapers, encyclopedias, typewriter, dishwasher, 2 or more operating cars or trucks, >50 books, room of own, pocket calculator, color TV, home personal computer, VCR, and compact disc player. Possession was indicated by the students as either (1) have or (2) have not.

Base Year VSO Participation. The variable BB032L, (tape position 432) was the only base year variable included for analysis in the dissertation. The question asked students: Have you participated in any of the following types of activities either in or out of school this year? The activities listed in the base year (1980) questionnaire were fewer (12 categories) and less specific as compared to those listed in the first follow-up document (17 categories). Responses to the activities listed were: Have not participated (code=0) and have participated actively (code=1).

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