CHARACTERISTICS OF POSTSECONDARY

PROPRIETARY SCHOOL STUDENTS

by

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DEDICATION

This research is dedicated to my wife,   , and to my

friend and mentor,   . Without their patience and

support this work would not have been completed.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF TABLES

LIST OF TABLES

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CHAPTER ONE

INTRODUCTION

Proprietary postsecondary education, the "hardy weed in the

academic garden" (Fulton, 1969, p. 1023; similarly, see Jones, 1973),

is nascent in the research literature after more than a century and a

half of not so benign neglect (Clark & Sloan, 1966; Braden & Paul,

1971; Wilms, 1973b; Trivett, 1974; Jung, 1980). The relatively recent

surge of prominence is founded on controversy (e.g., Wilms, 1973a;

1980; Critique of research ...., 1974; Goodman, 1980; Sheldon, 1981;

Levin & Clowes, 1981) and on perceived competition both from within

(Belitsky, 1969) and from without (Peterson, 1982).

Often, private postsecondary schools have been considered as an

apparent afterthought, if at all. For example, Manley and Vogler

(1983) list eight types of institutions which provide vocational

education; the eighth is "specialized vocational school" (p. 59),

which is the only category on their list which might include

proprietary schools. Manley and Vogler do not directly address a role

for private enterprise in the provision of vocational education.

The proprietary school industry has been a feature of education

in the United States since the early 1800s (Venn, 1964; Clark & Sloan,

1966). Though every published account affirms the large size of the

industry in terms of number of schools, students, or dollars involved,

1

it was not until Belitsky's (1969) effort that a serious attempt at description was made.

Belitsky and those who followed (e.g., Wilms, 1973a; 1980; Hyde, 1976) have generally limited their scope to selected groups of schools or to narrow geographical regions. Nolfi et al. (1978) reported that only limited data are available on proprietary schools; Belitsky (1969) agreed. Hyde (1976) accurately analogized on the state of proprietary school research -- "the fabled elephant described by the five blind men" (p. 3).

Other than reports by the Bureau of the Census (e.g., Population characteristics -- Vocational school experience, 1979), virtually all the published literature on the characteristics of proprietary students is based on students attending a particular sample of schools. Even less is known of the students than of the schools themselves. This lacuna is unfortunate for a number of reasons, prime amongst which is the claim by numerous researchers that proprietary schools compete with community college occupational programs (e.g., Wilms, 1973b; Shoemaker, 1973; Peterson, 1982). Nolfi et al. (1978) are explicit in claiming a causal relationship between growth in community colleges and increased selective pressure against proprietary schools. Without a substantial basis for comparing the characteristics of proprietary students with those of community college students, the claims of competition are difficult to address.

A number of authors has attempted to define the motivational factors which lead a student to choose a proprietary school (e.g., Ivarie, 1967; Podesta, in Fulton, 1969; Jones, 1973; Juhlin, 1976), but some conclude that measured variables do not distinguish those who select proprietary from those who choose public postsecondary options (e.g., Wolman et al., 1972). As financial resources and numbers of traditional postsecondary students decline, there are increasing calls for coordination between the public and private sectors (e.g., Bender, 1977; Peterson, 1982). However, until the characteristics of proprietary students are better known, it is difficult to allocate resources rationally.

The proprietary school industry is vast, but its characteristics are not well charted. Many authors have concluded that it competes with community college occupational programs; however, save for one interesting case (Hyde, 1976), there is nothing in the literature which is sufficient to demonstrate the validity of that conclusion. Little is known even of the demographic characteristics of proprietary students. There is much speculation on why these students choose the schools they do, but there is not even a model for such choice.

Even more difficulties are present in the research literature. Almost all the researchers who looked at students of proprietary schools did so by sampling the schools, and usually selected those schools by convenience rather than to generate representative data.

Many proprietaries are still not members of national or regional accrediting or lobbying associations. School-based samples are likely to be biased because most such samples are based directly or indirectly on such membership.

Significance of the Study

This study addresses a research gap of major proportions. Until now there has been no adequate examination of the population of postsecondary proprietary students. The present data will allow finer honing of marketing strategies of both proprietary and public institutions. They will permit an examination of the issue of competition between the public and private sectors. This information may well have implications for governmental policy and funding priorities.

Statement of the Problem

Longitudinal research centering on the characteristics of proprietary students, rather than on their schools, is needed. Such investigation, recommended by Juhlin (1976), will provide a description of students unbiased by school attended. Previous research was largely cross-sectional, and thus provided only limited temporal snapshots. The broadened temporal window of a longitudinal study permits the detection of sequential relationships among variables within individual students.

The fundamental question asked here is, "Who chooses to attend a proprietary occupational postsecondary school?" The subsequent question is, "Why?" The first question can be addressed fairly

directly; the second one is more problematic, but a preliminary
approximation is feasible. Once information is available on these two
questions, then the issue of competition between proprietary schools
and community colleges will be capable of informed examination.

Research Questions

I. Who chooses proprietary postsecondary education?

There is little agreement on the racial distribution of
proprietary students (e.g., Wolman et al., 1972; Wilms, 1973a; 1980;
Juhlin, 1976). Socioeconomic status is also an area of uncertainty
(Wolman et al., 1972; Wilms, 1974; Nolfi et al., 1978). Even age, sex,
and previous education are not settled areas. Until we can describe
the population adequately, progress in both research and theory will
remain inhibited.

II. What motivational factors predict choice?

Almost all the motivational information available is
retrospective. Retrospective reports are ambiguous, particularly when
collected after the student has invested substantial time, effort, and
money in the choice he has made. There is an acute shortage of
information describing the motivation of proprietary students prior to
actual enrollment. If this shortage were ameliorated, we would be on
stronger ground to examine the dynamics of choice. In addition, the
information most often reported in the literature is in reality more
reflective of schools than of students. For example, brevity of
program, preparation for immediate employment, and job placement

services are commonly reported (Kincaid & Podesta, 1967; Trivett, 1974; Nolfi et al., 1978; Jung, 1980; Clowes & Dickerson, 1981).

Hypotheses

This study tested the following research hypotheses.

1. There is no difference in sex, race, or socioeconomic status between the proprietary and public postsecondary samples.

2. There is no difference in educational background, influence by parents, or influence by peers between the proprietary and public postsecondary samples.

3. There is no difference in work-related attitudes between the proprietary and public postsecondary samples.

Definitions

A generally accepted definition of proprietary education is wanting (Fulton, 1969; see also Belitsky, 1969). For purposes of the present investigation, a proprietary institution is one which 1) is privately owned; 2) provides one or more programs whose primary goal is training for immediate employment, rather than general education; 3) provides less than four years of postsecondary education; 4) requires no more than high school graduation for admission; and 5) is not oriented primarily toward transfer to a degree-granting institution (cf. Mortorana & Sturtz, 1973). Correspondence schools are included within this definition of proprietary.

Trivett (1974) points out that there are only "minor boundary differences" (p. 8) among proprietary schools, private specialty

schools, private trade and technical schools, the private school industry, and independent colleges and schools. Clark and Sloan's (1966) specialty schools are considered proprietary, for purposes of the present research. The question of where the private not-for-profit schools fit has been raised and answered by Johnson (1974), who concluded that they are very similar to proprietaries and quite different from public institutions.

What is now considered within the rubric of occupational education originated as the technical education provided by the largely private technical institutes shortly after the turn of the twentieth century (Grede, 1981). Grede sees terms like career education as passing phases. "The labels vocational, technical, career, and occupational have all had their uses, but postsecondary education has pretty much settled on occupational" (p. 9). For purposes of the present investigation, these labels are treated as synonymous unless otherwise indicated, and all references to these terms imply a postsecondary context unless otherwise stated.

Limitations of the Study

Since the data are restricted to recent high school students, the age distribution is artificially constrained, with unknown effects on the other variables. Some of the variables are measured by self report only; some response bias and other systematic and unsystematic error are likely but difficult or impossible to test. However, a subset of these variables is measured more than once, allowing for the development of composites which are likely reduce the error.

A further limitation is that the cases examined are a population of a larger sample, and thus are afflicted with the inadequacies of the larger sample. Some of these inadequacies include the availability of only one cohort and attrition of cases through nonresponse to the serial surveys and due to missing or inconsistent responses. In addition, comparisons between students who chose proprietary programs and those who chose public ones are of unknown generalizability. Also, some cell sizes are vanishingly small, eliminating the possibility of performing some of the planned data analyses.

The available data are far from ideal, but there are no extant data of superior quality which can be used to address the research questions. Further, no better data are likely to come to the fore, and the National Longitudinal Study of the High School Class of 1972 (NLS), with all of its shortcomings, is a significant improvement on existing information in the literature because of its size, design, scope, and accessibility.

Organization of the Study

This dissertation is presented in five chapters. Chapter One presents the statement of the problem, significance of the study, research questions, hypotheses, definitions, limitations of the study, and the study's organization. Chapter Two consists of a review of the pertinent literature, including brief histories of both proprietary schools and community colleges, the relationships between the two school types, and the characteristics of their students. Chapter Three contains a statement of design and methodology, including a

description of the case selection process, geographical distribution of the sample, and indices of internal consistency. Analyses of the data are provided in Chapter Four, as are commentary on hypothesis testing and discussion of the findings. Chapter Five summarizes the dissertation, and states conclusions, cautions, and directions for future research.

CHAPTER TWO

REVIEW OF THE LITERATURE

Four segments of the research literature pertinent to this study were reviewed. A brief history of proprietary schools is presented, followed by a short history of community colleges. Then the relationships between proprietary institutions and community colleges are provided, followed by a review of prior research on the characteristics of postsecondary students in these institutions.

History of Proprietary Schools

The literature on the proprietary school industry is sparse, and especially with reference to origins. Moreland's (1977) work alluded to the teaching of business paper preparation by scriveners during the middle ages, but his earliest unambiguous reference to a proprietary school is dated 1630, when Richard Dofforne is alleged to have taught "accountantship" in London. Unfortunately, Moreland did not provide references to his sources.

In the United States, the proprietor-master school of the 18th century provided the most popular secondary education of its time, and anticipated modern proprietary schools (Clark & Sloan, 1966). The first incorporated school in the United States to be devoted solely to vocational education was Maine's Gardner Lyceum, which was founded in 1823 (Venn, 1964). By 1840 there was a business school in New York; a small chain, Bacon's Mercantile Colleges, was founded in Wisconsin and Ohio about ten years later. In contrast, it was not until the 1890s

that public high schools had any significant vocational component (Clark & Sloan, 1966). Consistent with this, Mortorana and Sturtz (1973) pointed out that there was very little general support for occupational education through most of the 19th century.

The more recent literature is replete with estimates of the size of the industry. Belitsky (1969) used NATTS, VA, and USBA data to estimate that in 1969 there were more than 7,000 proprietary schools, enrolling more than 1.5 million students annually. Belitsky's estimates were quite different from those of Clark and Sloan (1966), who thought that in 1964 there were 35,000 specialty schools serving at least 5 million students. Clark and Sloan's figures, however, were generated by sampling classified telephone directories in small cities and then extrapolating to large cities. They also appear to have included schools teaching leisure time activities (see Belitsky, 1969, p. 8).

Trivett (1974) calculated that as of 1971-2 there were 8,279 proprietary institutions, and estimated that as of 1974 there were more than 10,000 proprietary schools enrolling 3 to 4 million students. Trivett based his estimates on published and unpublished NCES data.

Hyde (1976) found that as of 1972 there were 589 proprietary schools in Illinois alone, and that they served 615,000 students. However, 80 percent of that enrollment was in home study or correspondence curricula. Hyde estimated that enrollment in his proprietary schools represented about 65,000 fulltime equivalent

students, which was approximately the same as the enrollment in Illinois' community college vocational programs.

Wilms (1974) claimed there were 10,000 proprietary schools which enrolled in excess of 3 million students annually. His estimates were the same as Trivett's (1974) estimates, and included correspondence schools. He stated that correspondence schools accounted for one third of the total number, but whether of schools or enrollees he did not indicate. Wilms cites only an unpublished HEW document as his source.

Hanson and Parker (1977) used Bureau of Labor Statistics data to estimate that in 1974 there were 7,824 private vocational schools enrolling 887,365 students. In 1976, 7,509 proprietary schools served 930,000 students, according to Kay (1978). Kay's (1978) data originated in the Directory of postsecondary schools with occupational programs, and with surveys of state directors of education.

Wagner (1982) estimated that in 1980 proprietary schools served 600,000 fulltime and 3 million parttime students, but he cautioned that, like other available proprietary school data, these were only rough approximations. His numbers were "best estimates" from unstated sources.

Kay (1979) found that in 1978 there were 6,813 private noncollegiate postsecondary schools, of which 999 were nonprofit; 75 percent of the latter were hospital schools. The 6,813 schools enrolled 1,043,400 students. The predominant type of school, according to Kay, was cosmetology/barber (n = 2,163), followed by business/office (n = 1,245), and flight (n = 1059). Sixteen percent of the schools were chain institutions; they accounted for 17.7

percent of the total enrollment. While only 6.7 percent of the schools were branches of another business, such schools accounted for 25.3 percent of total enrollment headcount. These data are consistent with those of Jung (1980; see also Trivett, 1974), who described a trend from the original sole proprietorship toward corporate ownership; the latter is now the predominant type of proprietary institutional organization.

Although large corporate entities account for most enrollment, most of the schools are still very small. According to Kay (1979), more than 75 percent of flight, cosmetology, and barber schools enrolled less than 100 students each; 21 percent of all schools had less than 25 students each. Kay (1979) also studied enrollment trends and curriculum lengths. She reported that total enrollments increased 18 percent from 1974 to 1978; enrollment in business/office schools increased 37 percent, to 439,200 during that same period. Contemporaneously, the number of programs offered declined by 18 percent. In 1978, mean program length varied from 1,977 hours in health curricula to 157 for truck driving and 82 hours for commercial pilot programs.

Kay's (1979) report is one of the most comprehensive available. However, it was limited to schools which were listed in the Directory of Postsecondary Schools with Occupational Programs (Kay, 1976), and provided only minimal information on student characteristics.

Not until 1963 were the first federal funds aimed at occupational education in the postsecondary setting (Mortorana & Sturtz, 1973); proprietary schools remained excluded at that time. While

proprietaries are clearly in the private sector, some now have access, through their students, to many sources of government funds. Since 1965 proprietary school students have had access fo federally insured student loans (Jung, 1980); BEOG funds and several other student financial aid programs have been available to them since 1972. Other sources have included WIN, CETA and the G. I. Bill.

The Education Amendments of 1972 recognized as Proprietary Institutions of Higher Education only those schools which were accredited and whose programs were at least six months long. Accreditation and the related eligibility for federal student financial aid were seen as important gains for proprietary institutions (Jones, 1973). Accredited schools tended to be larger than nonaccredited ones (Belitsky, 1969), probably due to the administrative and financial overhead attendant to the accreditation process.

Voluntary accreditation of proprietary schools has accelerated (Braden & Paul, 1971). Four agencies have been recognized by the U. S. Office of Education for the purpose of accreditation of proprietary schools: the Association of Independent Colleges and Schools; the National Association of Trade and Technical Schools, the National Home Study Council, and the Accrediting Commission for Cosmetology Schools (Jones, 1973).

Proprietary schools now exist in every state (Harris & Grede, 1979). During the 1970s there were between 6,800 and 10,000 proprietary schools which served between 880,000 and 4 million students. Although the numbers of both students and schools are

imprecise at best, there is no doubt that this segment of private enterprise is both large and heterogeneous.

History of Community Colleges

The history of community colleges has been short but, in contrast with that of the proprietaries, it has been described by a vast number of writers. Monroe (1972) pointed out that more of the titles in the Reader's Guide to Periodic Literature during the 1960s were related to community and junior colleges than to any other single area of higher education. The brief review that follows can be supplemented by the more comprehensive works of Medsker (1960), Fields (1962), Blocker et al., (1965), Monroe (1972), Thornton (1972), and Cohen and Brawer (1982).

The public community college concept is a child of the twentieth century. The turn of the century saw the establishment of the oldest junior college which still operates, Joliet Junior College. It was founded as an extension of secondary schooling in 1901, as a result of a proposal by William Rainey Harper, who was then President of the University of Chicago (Monroe, 1972). The role of junior college was then perceived, as it is today, to encompass the first two years of a planned baccalaureate program (Thornton, 1972).

The first public two year college was authorized in California in 1907, and the first collegiate occupational program was established at Chaffey College, also in California, in 1916 (Mortorana & Sturtz, 1973). It was only in 1922, with the founding of the American Association of Junior Colleges (AAJC) that their identity as colleges rather than as secondary school appendages became firmly ensconced.

Three years later came the formal AAJC recognition of a dual role for junior colleges --college level academic work and vocational training at a lower cognitive level (Thornton, 1972). According to Tonne and Nanassy (1970), by 1930 five hundred junior colleges enrolled 230,000 students.

During the 1960s community colleges underwent a growth spurt unparalleled in the history of education. One new community college opened per week through most of the 1960s; in 1967 alone 72 community colleges opened their doors (Cross, 1970). By 1968, 850 two year colleges were estimated to be enrolling 1.5 million students (Tonne & Nanassy, 1970). Grant and Eiden (1982) provided greater precision, basing their figures on annual fall enrollment data. They show that in 1968 594 public two year colleges enrolled 1,646,474 students, while in 1980, 941 public two year colleges enrolled 4,328,782 students.

The aforementioned data on community college enrollments are gross headcount totals, but other authors have provided information on enrollment of occupational students. In 1970, 30 percent (663,836) of community college students were enrolled in occupational programs. This probably underestimates the reality, since other students probably enrolled in occupational courses but were not considered curricular students (Mortorana & Sturtz, 1973). Thornton (1972) provided data for 1968 which are in general agreement with those of Mortorana and Sturtz (1973). Thornton reported that fewer than one third of nearly two million community college students were in vocational curricula.

Some information on the distribution of curricula are available. According to Thornton (1972), in 751 two year colleges the secretarial/clerical area accounted for 394 programs. There were 748 other business programs, 574 in engineering technology, and 457 in trade and industry. The typical junior college offered five or six occupational programs; 20 percent of the junior colleges offered no occupational curricula at all. If Thornton's "typical" is taken to denote "mean" and if the programs he lists above (N = 2173) are taken as exhaustive of occupational programs, then there appears to be a conflict within the data. Specifically, the number of occupational programs divided by the number of two year colleges (2173/751) yields a quotient of 2.86, rather than the 5 or 6 given by Thornton.

Cross (1970) reported that 31 percent of her sample of 23,000 full time students in 63 public community colleges were in vocational or technical curricula. Unfortunately, it is not possible to directly compare Cross with Thornton (1972).

According to Thornton (1972), Ricciardi (1930) crystalized the concept which we now know as the comprehensive community college. Through the ensuing half century, the occupational role of the community college has expanded, maintaining an interest in traditional trades while incorporating curricula in increasingly sophisticated realms, such as electronics technology, nursing, and mechanical design. It is interesting to note that there has been no parallel crystalization of the role of the proprietary institutions; it appears that their role is opportunistic and variegated, consistent with their position in the private economic sector (see Wilms, 1973a; 1980).

In the public sector, there is evidence of convergent evolution of previously dissimilar entities, the community college and the area vocational technical schools (AVT). AVTs are often state operated, tuition free, and aimed at vocational education in the postsecondary context. They are sometimes (varying by state) operated by local school divisions, sometimes supplementing and sometimes including the role of the community college. While AVTs were originally focussed on training for immediate employment, this is no longer a universal; many now offer two year degrees and offer courses which are accepted for transfer to four year colleges (Harris & Grede, 1979). Because the role of the ATV now overlaps substantially that of the community college, and because many states have only one type or the other, and there is no evidence in the literature that their student populations are or should theoretically be different, no attempt is made to differentiate them in the present research.

Relationships between Proprietary Schools and Community Colleges

The notion of cooperation between proprietaries and community colleges is little developed. A common and pejorative view of proprietary education can be read between the lines of Venn's (1964) statement, "There is relatively little articulation between business and other proprietary schools and the mainstream of education" (pp. 107-108).

Active cooperation between John Wood Community College and two proprietary vocational technical institutions was reported by Bender (1977). The John Wood model seems unlikely to be followed by existing colleges since John Wood has no faculty and contracts with other

institutions for all of its instruction. Bender points out that contracting increases the likelihood of individualized programming and may be economically judicious, but may also have disadvantages in quality control and in terms of unmet curricular needs.

Peterson (1982) called for articulation agreements between proprietary schools and community colleges. For example, the proprietaries could provide the technical courses and the colleges the general education component. He reported three such contractual arrangements, and argued that such agreements provide enhanced opportunity to the education consumer. In addition, he suggested that since proprietaries are more able to shift their program emphases with changes in the job market, contractual agreements have significant advantages for the employability of graduates.

The idea of articulation between colleges and proprietaries is hardly new. Fulton (1969) reported on 70 successful transfer agreements between business schools and four year colleges. This represented about 5 percent of the 1300 independent business schools reported by Clark and Sloan (1966). The percentage drops to about 4.7 if Miller's (1971) estimate of 1500 business schools is accepted. In either case, articulation was hardly the norm.

Braden and Paul (1971) emphasized the flexibility of proprietaries and contrast them with public institutions. On the other hand, public institutions have greater stability and are uncontestedly superior in the delivery of the general education component. It seems that joint ventures at arm's length could be of mutual benefit. Some degree of mutual trust is a prerequisite for

such arrangements, and this is difficult to generate for two reasons. First, proprietaries tend to be protective of and treat as confidential most information on their students and their costs. Second, trust can develop only if each party actively perceives the existence of the other -- and most community colleges totally ignore their private counterparts.

For the most part, cooperation remains only a possibility as yet unrealized. On the other hand, many writers convey a strong sense that between proprietaries and community colleges the dominant theme is one of competition. Wilms (1973b) stated, "Proprietary schools are likely to compete seriously with two- and four-year colleges in training the labor force of the future" (p. 80). Similarly, Wilms (1973a) stated that "proprietary schools are likely to become a serious source of competition for public postsecondary schools" (pp. 83-84).

While not directly addressing the competition issue, Juhlin (1976) explicitly compared the characteristics of Illinois community college and proprietary students. (See below for the substance of Juhlin's comparisons). Braden and Paul (1971) decried "unnecessary competition" (p. 204) between private and public institutions. Jung (1980) claimed that "proprietary schools often compete for students with public institutions in the same vicinity" (p. 11). Wolman et al. (1972) reported that nonproprietary schools "do not appear to compete with proprietary schools; they seem rather unconcerned at the very existence of proprietary education" (p. 72). These authors felt that rather than directly competing with the public sector schools,

proprietaries compete by enhancing their distinctiveness, especially in program length and the provision of placement services.

It is important to note that the claims cited immediately above are not inherent in the data (if any) cited by an author. Most claims about competition do not reference specific data. When they do reference specific data, the data are sometimes irrelevant. For example, Wolman et al.'s (1972) statement that public sector schools do not seem concerned about competition is pertinent to perceptions of competition, but irrelevant to the competition (if any) itself. The disagreement is probably due to a shortage of pertinent data. The conflict may also be related to the biases of the authors. .

According to Wilms (1974), proprietary schools saw themselves as in direct competition with public postsecondary institutions, but the converse was not true. The literature seems to bear him out -- writers with a collegiate orientation characteristically neglect to consider proprietary institutions as competition, or even to consider them at all.

Mortorana and Sturtz (1973) ignored the proprietary schools, stating that "the community college appears to be the most logical place to offer postsecondary occupational training" (p. 24). Similarly, Trent and Medsker (1968) made no reference to proprietary postsecondary education in their longitudinal study of 10,000 high school graduates. In Thornton's (1972) tome, The Community Junior College, although he discussed articulation both upward and downward, there was no mention of proprietary schools.

In a recent volume of New Directions for Community Colleges the editor (Arns, 1981) suggested that since community college revenues will be decreasing, the colleges will be increasingly likely to cooperate with each other. She did not mention proprietaries, and neither did the volume's index. In about 100 pages of text on the past and future of occupational postsecondary programs, there was one brief mention each of "proprietary interest" (p. 16) and "proprietary institutions" (p. 16). Clearly, community college occupational education divans see no competitive threat from proprietaries, whether because their vision is veridical or because it is ostrichlike.

Those who take competition for granted often attribute it to the community colleges' rapid development, program offerings, and (predominately) funding. Miller (1971) stated that the rapid growth of comunity colleges restricted the independent business schools. Shoemaker (1973) believed that the competition between public and proprietary schools was greatest in the trade, technical, and business fields. Erwin (1975) suggested that while most colleges did not compete directly with proprietary schools for students, the proprietaries had the potential to divert federal assistance. "Of the estimated 8,000 proprietary schools operating in the United States, fewer than one in three offers the kind and level of programs available at the typical community college" (p. 52), but competition with as many as 4,000 proprietaries was still possible, in his opinion.

Hamilton (in Miller & Hamilton, 1964) wrote, "As a business enterprise, the independent business school competes with institutions

that are supported by public funds" (pp. 1-2). Tonne and Nanassy were less subtle: "If there were no public business education, private business schools would flourish far beyond their present level (1970, p. 386). Along the same line, Miller (1971) clearly stated that the growth of the public community college challenged the independent business schools. Hosler (1971) was more specific: "The public financial support -- federal, state, and local -- of the technical institute and the junior college business education program makes uncertain the future growth of the private business school" (p. 521). However, Erickson et al. (1972) perceived proprietary school administrators as more sanguine, believing that community colleges constituted a short term, but not a long term, threat.

According to Shoemaker (1973), the competition was significantly enhanced by the Higher Education Amendments of 1972, which provided access for proprietary students to Basic Education Opportunity Grants. Some states, like Pennsylvania, allow proprietary schools to offer associate degrees, thus enhancing the appearance of competition, according to Shoemaker.

Peterson (1982) suggested that competition between public and private postsecondary institutions has been enhanced by increases in tuition and fees at public schools and by the use of public funds to support private education, such as through the G. I. Bill, CETA, and federal and state scholarships, grants, and loans to students. In addition, he implied that the decline in the population of traditional college age (18-21) postsecondary students was a factor to be

considered, along with public budgetary constraints, unemployment, and job market changes.

Perceptions of competition between proprietary schools and community colleges are only rarely based on empirical information. Kincaid and Podesta (1967) stated, "Recent junior college enrollment figures suggest the degree to which these proprietary schools compete with public institutions in attracting students" (p. 206), but their data only showed that twice as many students in Santa Clara (California) County were enrolled in junior colleges as in proprietary and business institutions.

Nolfi et al. (1978) concluded that competition from the public sector cut student enrollments in proprietary schools by 50 percent between 1963 and 1972-1973. During this same period, they reported, total postsecondary enrollments rose 938 percent to 1.35 million. These authors did not, however, establish the causal relationship which they claimed.

Hyde (1976) provided a case study which showed that the establishment of a community college produced a 77 percent decline in enrollment in a proprietary program which was similar in schedule and length to the comparable community college program. Enrollment in three other programs in the same proprietary school which were on different schedules declined only 5 percent. In addition, although he presented no details, proprietary schools which offered courses not usually taught in community colleges increased by 50 percent in the face of rapid growth in community colleges.

Of these three reports of direct competition (Kincaid & Podesta, 1967; Nolfi et al., 1978; and Hyde, 1976), only Hyde appears to have a strong case; unfortunately, his was also the most restrictive sample. The argument for competition is not yet convincing, but it could be buttressed by a showing that the two types of institutions draw from a common or similar population of students. The following section reviews the literature on student characteristics.

Student Characteristics

This review attempts to summarize the existing literature, but the reader is cautioned that generalization of the findings should be engaged in with care. The community college literature is used to provide some comparisions, but for many reasons the comparisons are perilous.

This literature review emphasizes the late 1960s and the 1970s in order to gain as stable a benchmark as possible. THe earlier literature is sparse, and there is very little proprietary literature which is more recent. The review focusses on the characteristics of individuals who chose to attend proprietary schools. It is divided into several topical areas. The areas selected are those which meet three criteria. First, they involve variables which seem antecedent to actual attendance at a proprietary school. Second, the variables are ones on which at least a modicum of research has been published. Last, the variables are at least arguably independent of the type of school chosen. An example of a variable excluded by the last criterion is financial aid, since financial aid to student in

proprietary schools is in part contingent on accreditation of the school.

The areas of research reviewed here are:

1. socioeconomic status (SES),

2. prior education,

3. sex,

4. ability,

5. age,

6. race,

7. full time versus part time attendance, and

8. motivational factors.

Meta-analysis (Light & Pillemer, 1984; Glass, McGaw, & Smith, 1981) is a means of clarifying known relationships and of extracting new ones by means of systematically analysing previous research reports. In an attempt to develop a meta-analysis of the characteristics of proprietary and community college students, the research literature was searched for studies which meet the following criteria:

1. provide at least some original data or original data analysis on one or more pertinent student characteristics (see list above), and

2. bear a publication date between 1960 and 1980, inclusive.

Traditional literature reviews were excluded. No previous meta-analyses were detected. A total of 26 studies which meet the two

criteria was identified (see Appendix A). For purposes of preliminary evaluation, the studies were examined for three types of information:

1. school and student Ns.

2. design and analysis issues (school and student selection, measurement of attrition and data loss, consideration of reliability and validity issues).

3. statistics reported.

Of the 26 studies, 19 present some information on the characteristics of proprietary school students. Six of the 19 do not state how many schools they examined, and 7 do not state for how many students they have data. Three others estimate the student N by an unstated method, and one does not separate proprietary students from those in the public sector.

Of the 26 studies, 14 present at least some information on community college students; 6 of these do not state how many schools are represented and 1 estimates the number of schools by an unstated method. In 4 of these 14 studies, the number of students is not stated, in another it is estimated by an unstated method, and yet another does not separate public from proprietary students.

Looking at these studies from a different perspective, of the 19 reports which provide information on proprietary students, 10 specified both the number of schools and the number of students. Of the 14 studies which provide information on community college students, 6 provide both the number of schools and the number of students.

In 11 of the 26 studies, there is no statement of how the schools had been selected; 15 of the studies provided no information on how the students had been selected. Student/school attrition/data loss is considered in 5 of the 26 reports. Four studies reported consideration of at least one reliability issue, and 2 studies reported consideration of at least one validity issue. Note that "consideration" does not imply that appropriate actions were taken.

The statistic most commonly reported is the percentage (24 of 26 studies). "Averages" are provided in 3 studies; means also in 3; weighted means in 2 (although the method of weighting is unspecified); chi squared and r each in 2; and t, tau-beta, F, eta, quartiles, and range each in 1 report. Probability values are given in 4 reports, although only in 2 is the corresponding test statistic specified. None of the 27 studies states degrees of freedom, variance, standard deviation, or standard error on any pertinent variable. It is important to note that a statistic is counted as present in a report if it was used even once with any pertinent variable. The reader is advised not to infer a correspondence between mere presence and appropriate use of statistics in the reports reviewed here.

Light and Pillemer (1984) are candid on how to decide whether a meta-analysis is feasible. They state, "A quantitative review is impossible unless studies report the necessary statistical information. All we need are means and standard deviations, or exact test statistics such as t and sample sizes" (p. 101). Of all 27 studies surveyed, only three (Juhlin, 1976; Jung, Campbell, & Wolman, 1976; Wolman, 1972) appear to meet requirements for a meta-analysis.

Subjectively, they are the only three which appear to be professional presentations aimed at professional audiences.

Jung et al. (1976) restricted their consideration to graduates. There is no extant literature on differences between graduates and students at proprietary schools; the characteristics of graduates is, in any event, beyond the scope of the present exercise. Thus the studies of Juhlin (1976) and Wolman et al. (1972) remain for detailed consideration. The present literature review supports and extends the conclusions of Mortorana and Sturtz (1973) that information on the demographics of community college students was "incredibly scarce" (p. 30), and that of Trivett (1974) who concluded that there was little up to date literature on proprietary students.

Although meta-analysing only two studies does not take advantage of the full power of the technique, those two studies are the only game in town. Thus follows a minimeta-analysis.

The proprietary schools of interest to Wolman et al. (1972) had the following characteristics:

1. offered programs in office, health, computer, or technical occupations.

2. located in Atlanta, Chicago, Rochester NY, or San Francisco.

3. listed in classified telephone book, by USBA or NATTS, or elicited from administrators of previously identified schools.

4. for profit.

Wolman et al. identified 150 proprietary schools, exhausting the defined population.

Juhlin's (1976) population of interest had the following characteristics:

1. offered any program, except excluded if only driver training, home study, mortuary science.

2. located in Illinois.

3. for profit.

Juhlin selected a 10 percent stratified random sample of all (N=350) proprietary schools in Illinois. He paid school administrators to administer a questionnaire to students. It is impossible to judge whether the students samples are representative of those in Illinois proprietary schools. Wolman et al. also collected their data via student questionnaire, but their schools and students each exhausted the population, minimizing the possibility of nonrepresentativeness of the data.

The data of Juhlin (1976) and of Wolman et al. (1972) on each of the pertinent variables are discussed below. Caution should be exercised in interpreting these data since both reports were based solely on uncorroborated student reponses to a single questionnaire. Sums of cell frequencies ("totals") given below are from the original reports, and do not necessarily equal the sum of the corresponding cell frequencies. These discrepancies are due to rounding in the process of cell frequency reconstruction (from percentages and Ns), to cases missing, or to rounding and errors in the original reports. For purposes of significance testing, the sums of the reconstructed cell frequencies were used.

Socioeconomic Status. Juhlin states that the fathers of two thirds of his students were blue collar. Wolman et al. list classes of occupations, from which blue collar status can be deduced. For this comparison, the following reponse categories were considered to be blue collar: skilled craftsman/foreman, laborer, service worker, technician, semi-skilled worker, farmer, and armed services. The sum of the percentages of these responses is 54.58, which is substantially lower than Juhlin's figure. However, 12.66 percent of Wolman's subjects responded "other" and 5.57 percent reported "don't know," leaving open the possiblity that the socioeconomic status (SES) of subjects in the two studies may be equivalent.

Educational Background. Both Juhlin and Wolman et al. provide information on both prior educational accomplishment and on type of program enrollment while in high school. Juhlin reports that 70 percent (and elsewhere in his report, 72 percent) of his students were high school graduates and that 8 percent had acquired a GED. Wolman et al., however, give 88.77 percent and 5.06 percent, respectively. After conversion from percentages and Ns to raw frequencies, a table can be constructed (see Table 1).

Table 1

Prior Educational Accomplishment

Education	Juhlin N	Juhlin %	Wolman N	Wolman %
H. S. Grad.	987	71	2964	89
GED	112	8	169	5
Other	299	21	206	6
Total	1398	100	3340	100

There was significant heterogeneity between expected and observed cell values (chi squared = 267.68, N=4738, df=2, p<.001). Eighty percent of the value of chi squared was due to the "other" category. There is no obvious explanation for this finding, and the data in the source reports are insufficient for further analysis on this variable.

The second variable related to educational background is the type of program in which the subjects were enrolled while in high school. If one assumes that Juhlin's categories of business and college preparatory are equivalent to Wolman et al.'s business/commerce and academic, respectively, then direct comparison between the two reports can be made (see Table 2).

Table 2

High School Program

Program	Juhlin N	Juhlin %	Wolman N	Wolman %
Academic	358	27	1382	41
General	558	42	714	21
Business	186	14	555	17
Voc-Tech	212	16	413	12
Other	13	1	181	5
Total	1327	100	3340	100

Wolman et al.'s percentages and N are about 3 percent lower than his report states. For the present purpose, analysis was based on the assumption that the discrepancy reflects missing data. The revised N for Wolman is 3245. Proceeding on that basis, there is substantial heterogeneity between observed and expected cell frequencies (chi squared = 290.40, N=2820, df=4, p$<$.001). Almost half of the value of chi squared is due to one cell, the Juhlin percentage in the general curriculum. Juhlin reported a percentage of 42, while the expected percentage was 27.8.

In each of the two reports, the academic and general programs account for about two thirds of the students, but while Wolman et al. found 41 percent in academic programs, Juhlin found 42 percent in general programs. The obvious candidates for explanation of this difference are the differences in geographic region and in the date of the report, the former being judged more likely. If the difference is geographic, it may be due to varying practices in curriculum labelling, to real differences between the student populations, or to differential program availability. It seems unlikely that a four year difference between publication dates of the reports would create such a dramatic difference. Of course, any number of other variables could conceivably have caused the observed difference.

Sex. Juhlin reports that two thirds of his students were female, while Wolman et al. report that 55.66 percent of his students were female. This information allows the construction of a 2X2 table (see Table 3).

Table 3

Sex

Sex	Juhlin N	Juhlin %	Wolman N	Wolman %
Male	477	33	1481	44
Female	954	66	1859	55
Total	1431	100	3349	100

The data are significantly different from the calculated expected cell frequencies (chi squared = 50.2, N=4771, df=1, p<.001). It is clear that Juhlin's data are more extreme than those of Wolman et al. Since the two sets of data come from sources which are variously heterogeneous (degree of urbanness, type of program, vintage, etc.), it is not clear why this difference obtains. However, it is clear that both studies show proprietary school students to be predominantly female. If the studies had included the not-for-profit schools (e.g., nursing, x-ray technology), then the percentage of female students would certainly have been even higher.

Age. Juhlin reports a mean age of 27 (standard deviation = 9) for his subjects. Wolman et al. report a percentage distribution, the median of which is approximately 20.5 years. Since the Wolman et al. distribution is approximately symmetric, the median can be used as a surrogate for the mean. The standard error of the mean for Juhlin's data is calculable as 0.24. Since the difference between the two averages is 6.5 years (27 standard error units), it is clear that the two distributions are significantly different. The proprietary schools eliminated by Juhlin (driver training, home study, mortuary science) would be unlikely to raise the mean age dramatically. The characteristics of the schools not considered by Wolman et al. remain unknown, with unknown effects on the age distribution. However, since Wolman's schools were drawn entirely from urban areas while Juhlin's may have been in part from rural areas, it is conceivable that the difference is due to correlates of geographic area.

Race. Juhlin and Wolman each provide directly comparable racial percentage distributions. From them, the original cell frequencies can be reconstructed (see Table 4).

Table 4

Race

Race	Juhlin N	Juhlin %	Wolman N	Wolman %
White	731	53	1945	58
Black	331	24	678	20
Amerind	41	3	60	2
Oriental	14	1	151	4
Hispanic	124	9	115	3
Other/Refused	124	9	257	8
Total	1380	100	3340	100

Juhlin reports his percentage white as both 53 and 57; 53 percent was used because it led to a total approximating 100 percent. Wolman et al.'s data, even using their reported percentages "accurate" to hundredths, total to about 96 percent. Because of these two uncertainties, no statistical test was performed on the race data. However, for both sets of data, about 78 percent of the subjects were either white or black, and there were between two and three times as many whites as blacks.

Enrollment Status. Juhlin reported that 60 percent of his students were full time. This contrasts sharply with Wolman et al.'s figure of 16 percent. An explanation for this vast difference may lie in the definition of proprietary school -- Juhlin excluded home study, while Wolman et al. failed to mention home study as included or excluded. Another explanation may lie in the inclusion of significant rural area in Juhlin's region, but not in those of Wolman et al. Rural folk may be less likely to attend part time because the large distances involved may reduce the perceived net gain for part time attendance. Additional possibilities abound, but cannot be tested with these data.

Motivation. Fifty percent of Juhlin's subjects and 60 percent of Wolman et al.'s were seeking skills to get a job. About 8 percent of each group was working toward a promotion (or raise), and 18 percent of Juhlin's students but only 12 percent of Wolman et al.'s were motivated primarily toward changing jobs. In each of the two reports there were several other response alternatives, but they each had small frequencies. (See Table 5).

Table 5

Motivation

Source	Juhlin N	Juhlin %	Wolman N	Wolman %
Get Job	716	50	1994	60
Change Jobs	258	18	387	12
Promotion (Raise)	114	8	260	8
Other	344	24	698	21
Total	1432	100	3342	100

Reconstruction of the raw frequencies showed that there was significant heterogeneity between expected and observed cell frequencies (chi squared = 51.17, N=4772, df=3, p<.001). Nearly 59 percent of the value of chi squared was due to the "change jobs" cells, while 32 percent was due to the "get job" cells.

The value of this finding is uncertain. Since Juhlin's subjects were more than 6 years older than Wolman et al.'s, it is quite reasonable to assume that Juhlin's subjects were also more likely to have been employed; thus they were less likely to attend school to get a job. This assumption, however, is a bit dubious, when viewed in the light of the full time enrollment status of Juhlin's subjects. If they were already employed, one would expect them to be less likely to attend full time. According to the data, 60 percent of Juhlin's students were full time, while only 16 percent of Wolman et al.'s subjects were enrolled full time. No parsimonious explanation for these inconsistencies comes to mind.

With regard to the motivation question, other concerns are also present. The question required multiple discriminations by the respondent among categories which could be confused. In addition, the most socially acceptable alternatives appeared early in the response set. Taken at face value, however, more than three quarters of the subjects in each study reported job related reasons for attending proprietary schools.

Summary of Minimeta-analysis. The analysis compared only two studies, thus making it very difficult to find convincing explanations

for observed discrepancies. Nevertheless, a number of conclusions can now be drawn, more or less safely. They are:

1. The majority of proprietary students is female. Although the two reports differed significantly from each other on the sex variable (as they did on every other variable examined), in each report females predominated.

2. The average age of proprietary students is somewhere between 20 and 30 years.

3. More than half of proprietary students are white; between 20 and 25 percent may be black, although significant regional and urban-rural variation is to be expected.

4. Between half and two thirds of the fathers of proprietary school students are blue collar.

5. Between 70 and 90 percent of proprietary students are high school graduates.

6. About two thirds of proprietary students had been in general or academic programs while in high school.

7. When asked what their primary motivation for attending proprietary school is, about three fourths respond to an employment-related alternative.

These conclusions must be viewed cautiously. The data provided in the two reports are from an urbanized State (Illinois) and four large cities (Atlanta, Chicago, Rochester NY, and San Francisco). In addition to heavy black populations in these areas, there are probably many other demographic factors which make them atypical of the nation

as a whole. Thus the proprietary school industry, in toto, may not be well represented by the data from Juhlin (1976) and Wolman et al. (1972).

The differences observed between the two studies are very likely to be due to differences in the populations examined. It would not be surprising if the reported data were valid, and represented real local variation secondary to underlying population demographics and economic and social conditions.

These two studies are the most illuminating, rigorous, and best reported found in the literature review on the topic of student characteristics. However, a much more inclusive traditional treatment of this literature will likely add more information, and will elucidate points of disagreement. Such a review, paralleling the minimeta-analysis, follows.

Socioeconomic Status. For many years there has been concern about the socioeconomic status (SES) of occupational versus general education students. Counts (1969) felt that vocational courses disproportionately drew from "the ranks of labor" (p. 143) in the secondary schools of sixty years ago. He noted that among other indicators, telephones were less frequently available in homes of trade students, compared to high school students.

Hoyt (1968) stated that students who attended trade, technical, or business schools were mostly from "lower middle socioeconomic backgrounds" (p. 170), but he failed to specify the nature of his sampling technique and of his dependent variable. Juhlin (1976) reported median family income of proprietary school students in

Illinois to be about $12,000, with business and cosmetology students less affluent than (other) vocational students. Parents of white students had the highest reported education, followed by blacks, and then chicanos. For more than 30 percent of his sample, neither parent had completed high school. Two thirds of the sample said their fathers were in blue collar occupations (Juhlin, 1976). Freeman (1974) analysed 1966 Department of Labor data which led him to the conclusion that "proprietary students have come from poorer socio-economic backgrounds than the typical member of their age group" (p. 312).

Other researchers have provided us with some information on the socioeconomic background of community college students. Cross (1970) reported that SES of the family of origin declined from transfer through technical to occupational curriculum students. She noted that even the transfer students were of lower SES than were students in four year colleges. Among community college vocational students in California, the parental income distribution was nearly flat, with a median of about $10,000 per year (California community college students, 1977). Eighteen percent of that population received food stamps.

Mortorana and Sturtz (1973) stated that students of extremely low SES were underrepresented in occupational programs. They also reported that about 40 percent of the parents of community college occupational students did not graduate from high school; 57 percent of the fathers of black students did not have high school diplomas. These percentages were about the same as for the population of all community college students in 1969. Carter (1976) wrote that nearly

half of Virginia community college occupational-technical students had parents who had not finished high school and that more than half of their fathers were in blue collar occupations. Finally, in Sheldon's (1981) sample of California community college students, only 16 percent of vocational students reported they were financially disadvantaged.

There have been only a few published studies which provide comparisons of proprietary and community college students on SES. The earliest of thse was the work of Wolman et al. (1972), who did not detect a difference in either parental education or parental occupation between proprietary and public occupational students. Half of their students stated that both parents had, at a minimum, graduated from high school, but less than 10 percent reported that either parent had a four year degree. Half of the fathers were skilled or semiskilled (25 percent each) and about 20 percent of the fathers were in upper white collar occupations. Nolfi et al. (1978) also suggested that the distribution of SS was "roughly comparable" (p. 167) among public and proprietary vocational students.

On the other hand, according to Wagner (1982) the median full time proprietary student came from a lower income family than did the median full time community college student. A more complex pattern was reported by Juhlin (1976). He found that community college students were more likely to be from middle income families, while white proprietary students were disproportionately of high income families. Black students were of low income families regardless of school type.

Wilms (1973a; 1974; 1975) has been all around the block on this issue. He (1974), citing unpublished HEW data, reported that proprietary students tended to be of higher SES than those attending public institutions. His own data (p. 6) showed no significant difference, but a trend in the opposite direction. However, he concluded that public postsecondary institutions appealed "largely to the tax-paying middle class: (p. 6). Wilms (1973a) concluded that the least advantaged students were the most likely to choose proprietary schools. Subsequently, (Wilms, 1975) he claimed that socioeconomic background was not related to whether students choose public or proprietary institutions. It is fair to say that this area of research is unsettled.

Educational Background. The prior education of proprietary students is another area in which there is little agreement. Berdie and Hood (1965) reported that female high school graduates who planned to attend business schools were likely to have taken the commercial curriculum in high school, and that boys who planned to attend trade schools had likely taken the shop or general curriculum in high school. Hoyt (1966-7) stated that 98 percent of his sample of proprietary business students were high school graduates, 16 percent were either college dropouts or junior college graduates, and 1.4 percent were college graduates. The Georgia study (Proprietary education in Georgia, 1975) showed that while only one third of proprietary students had previously been enrolled in postsecondary education, 10 percent of all proprietary enrollees already had at

least a two year degree and some had a four year degree. This may be due to the inclusion of at least two law schools in their survey.

In stark contrast, Hanson and Parker (1977) stated that as of 1974, proprietary students were "primarily secondary school leavers" (p. 108). According to Juhlin (1976), 70 percent of proprietary school students already had a high school diploma. High school curricula were almost evenly distributed among academic, vocational, and general. Sixty percent of the proprietary school students had previously attended at least one other postsecondary school. Juhlin (1976) concluded that the high school background of proprietary and community college students was similar; his community college sample was not limited to occupational programs. Wilms (1974) cited an unpublished HEW report as evidence that proprietary students have more education before enrolling than do those attending public institutions.

The research conclusions in this area are heterogeneous. In addition, most of the cited authors used data bases which were either limited or inadequately specified. The most reasonable conclusion to draw at this point is that we simply do not know what distribution of prior education to expect of proprietary school enrollees.

Sex. Sex is interesting, but it interacts potently with other variables, especially curriculum. Wilms (1973a) found that 65 percent of his proprietary students were female. Wagner (1982) reported that as of 1978, 50 percent of full time proprietary students were male, while 46 percent of part time students were male. Hoyt (1966-7), who examined 3316 students in 11 business schools, reported that three

quarters of business students were male and that more than 90 percent of secretarial and clerical students were female. Belitsky (1969) found that two thirds of his NATTS sample had enrollments which were at least 90 percent male.

Waldrip et al.'s (1966) study of five broad program classifications in all 16 proprietary schools in North Dakota showed no surprises in the distribution of sex by curriculum. In 1965-1966, the barbering and mechanical trades programs were exclusively male and hair styling was 90 percent female. Females also predominated in data processing and business programs.

Kincaid and Podesta (1967) indicated that females accounted for 90 percent of the students enrolled in their sample of proprietary business and commercial schools. Those females who were over age 30 were disproportionately likely to be enrolled in brush-up or short courses. Kincaid and Podesta also found that in each of the nine cosmetology schools in their sample, "more that 80 percent of the full time students were girls younger than 21" (p. 210). Waldrip's (1966) data on hair styling programs in proprietary schools are remarkably similar. Of 497 enrollees, 413 were female and under the age of 21. This agreement is particularly remarkable because Kincaid and Podesta's data were from Santa Clara County, California, while Waldrip's were for the state of North Dakota.

Braden and Paul (1971) studied Oklahoma proprietary schools and found that two thirds of the students were male and that while males predominated in trade and technical areas, females constituted the majority of business students. The Georgia State Postsecondary

Education Commission (Proprietary education in Georgia, 1975) reported that overall enrollment was two thirds male, with females clustered in traditionally female occupational programs. Jung (1980) found that more than 70 percent of female enrollees in proprietary schools were in office, cosmetology, and health curricula, while more than 60 percent of males were in trade and technical programs. Kay (1979) reported that in 1978 women accounted for 54 percent of the private noncollegiate postsecondary enrollment; females were concentrated in business/office and health curricula, while males were mainly in technical and trades/industry programs.

Several workers have examined sexual representation in the community colleges. Cross (1970) found that males constituted 61 percent of community college technical students and 58 percent of vocational students. Mortorana and Sturtz (1973) reported that for freshman at two year colleges in 1969, three men were enrolled in occupational programs for every two women, but they noted that this ratio is declining and depends on the curriculum in sex-typical ways. Carter (1976) found that most occupational-technical students in the Virginia community colleges were male. In California, Sheldon (1981) showed that 59 percent of community college vocational students were female.

Two publications provide sex comparisons between proprietary schools and community colleges. Wolman et al. (1972) reported that regardless of school type, students in health and office occupations programs were preponderantly female, while students in computer and technical curricula were mostly male. Juhlin (1976) surveyed

proprietary schools in Illinois and found that only one third of the students were male, but that this varied by curriculum, as would be expected (e.g., cosmetology vs. truck driving). In Illinois community colleges, males made up half the student population.

To summarize the data on sex distribution, student populations generally reflected sexual stereotypes, regardless of school type. Few males enter cosmetology, and few females truck driving. When there is disagreement in the literature, e.g., in business programs, it is likely that the cause is the inclusion of secretarial/clerical in some program definitions but not in others. Kay (1979) and Mortorana and Sturtz (1973) agrees that sex stereotyping by curriculum type was declining, but was still overwhelming.

Ability. There is little information on the ability level of occupational students. Gillie (1973) reported that many proprietary schools administered achievement or aptitude tests as part of the admissions process. Unfortunately, none of these data have been published. Berdie and Hood (1965) found that the typical female Minnesota high school graduate who planned to enter business school was at the fiftieth percentile of her high school class. This was somewhat higher than for those planning on trade school or on working, but below those planning on nursing school or college. The males in their sample who planned to enter trade school were on the average at the 32nd percentile, which was similar to the level of the males who were planning to work. Although Berdie and Hood's (1965) study is very old and used a very restricted sample, it is all that the literature on the ability of proprietary students provides.

Studies of the ability of community college occupational students are available. Cross (1970) found that for her sample of community college students, CGP ability profiles were highest for transfer students and lowest for nondegree vocational students; technical students were intermediate in ability. Thornton (1972) displayed two decile distribution of School and College Aptitude Test (SCAT) scores for 4398 junior college students, each distribution representing a junior college. While the scatter of these scores is very high -- only one decile among the two distributions represents less than four percent of the scores in its distribution-- there is an obvious positive skew for each college. Only 36 percent of the "terminal" (vocational?) but 56 percent of the transfer students scored above the 30th percentile on national norms. Mortorana and Sturtz (1973) suggested that the scholastic ability of community college occupational students may be somewhat, but not consistently, lower than that of transfer students. If their conclusion is to be believed, occupational students were in this sense unlike Cross' (1971) "new student," who typically scored much lower in terms of academic ability.

There are no published reports which compare the ability of community college occupational students with that of proprietary students. The paucity of proprietary school data on this variable is unfortunate.

Age. The age distribution of postsecondary occupational students has been examined by a number of writers. Wolman et al. (1972) reported that two thirds of their postsecondary occupational students

had been out of high school for more than a year. Wagner (1982) presented data which indicated that younger students at all postsecondary levels are more likely to be enrolled full time. Hoyt (1968) stated that most students headed toward postsecondary trade, technical, or business schools were under 21 years of age; unfortunately, he did not state whether the schools were private or public. A study of 276 private postsecondary vocatonal schools in Oklahoma (Braden & Paul, 1971) found that the average student age was 20.8 years. Belitsky's (1969) sample of NATTS schools had a day student population with a median age of 20; the median age of evening students was several years older, but less than 26.

The Georgia proprietary school study found that 54 percent of the students were 24 years of age or older (Proprietary education in Georgia, 1975). Trivett (1974), based on his review of the literature, concluded that the typical proprietary student was under 25 years of age.

The age of community college students has also been studied. Thornton (1972) stated that the median age of full time community college students was 20 years, that the age distribution was positively skewed, and that part time students were older. Mortorana and Sturtz (1973) reported that two year college freshman in occupational programs averaged about 20 years of age, while 90 percent of all college freshman were under 20. Carter (1976) reported that occupational-technical students in Virginia community colleges averaged 23 years of age in the late 1960's, apparently the same as in California during the middle 1970's (California community college

students, 1977). Sheldon (1981) also studied California community college students, but found that vocational students had a mean age of nearly 27; the median was about 23, and the distribution has a gross positive skew.

Four researchers have compared the age of public and proprietary students. Wilms (1973a) reported that his proprietary students were slightly younger than corresponding community college students, but his data do not support this conclusion. Juhlin (1976) found that in Illinois proprietary schools the mean age was 27 (s. d. = 9); thus these tended to be nontraditional students. They also were somewhat older than his community college sample. Jung (1980) reported that two thirds of proprietary students were under 25 years of age; this was true of 56 percent of his public institution sample. Wagner (1982) estimated that as of 1980 almost half of the full time but less than one quarter of the part time students at proprietary schools were under 25 years of age. In contrast, he placed the comparable community college/vocational-technical institute figures at 84 and 26 percent, respectively. The median age for both part time, and the proprietary full time, categories fell in the 25-34 year range. Wagner did not separate community college transfer from community college occupational students.

Caution should be exercised in interpreting these studies because of interactions among age, curriculum type, and enrollment status. For example, Kincaid and Podesta (1967) showed that at least 80 percent of full time cosmetoloty students were under 21, while females over the age of 30 were likely to be enrolled in brush-up courses. A

few tentative conclusions can be drawn. Full time students tend to be younger, as do day students, and possibly community college occupational students. This is clearly another area where additional research is needed, and psecial attention must be given to definitions of the curricula in which the sample is enrolled.

Race. Several researchers have examined the distribution of race in proprietary schools. In Georgia, blacks accounted for 25 percent of total enrollment, but 72 percent of enrollment in the trades (Proprietary education in Georgia, 1975). The Georgia report claimed that "white enrollment is weighted toward programs that would appear to be more prestigious" (p. 24). Doherty (1973) found that 25 percent of students at the Bell and Howell schools were black.

Community college students were studied by Mortorana and Sturtz (1973), who reported that in 1969, 92 percent of freshmen in occupational programs were white; while blacks represented only 5 percent of that sample, they are overrepresented when compared to the distribution of all community college freshmen. Cross (1970) reanalyzed her 1968 data on 63 community colleges and estimate enrollment at 84 percent white, 8 percent black, and 3 percent oriental. In technical programs the figures were 79, 7 and 7 percent, respectively, while in occupational programs she found 70 percent white, 14 percent black, and 7 percent oriental. Sheldon's (1981) information on California Community College vocational students indicated that 70 percent were white, 12 percent hispanic, and 10 percent black. Another California study found that 65 percent of

community college vocational students were white (California community college students, 1977).

Seven studies compared the racial characteristics of proprietary and public students. Wolman et al. (1972) stated that minority students were more likely to avoid proprietary schools due to their cost. On the other hand, Wilms (1974) claimed that minorities were more likely to attend proprietary schools than their public counterparts. Wilms (1973a) stated that minority race individuals were less likely to go to public schools than to proprietary ones; his later study (1980) reported that this difference was attributable to "other" (presumably hispanic and oriental) minorities; blacks were more likely to attend public institutions. All of Wilms' reports must be interpreted cautiously since they are limited to large SMSAs and since two of his four regions (Miami and San Francisco) have unusual patterns of minority population. In addition there are other peculiarities in his design and analysis (see Levin & Clowes, 1981).

Jung, Campbell, and Wolman (1976) used 1966 Department of Labor data to compare proprietary and public graduates in four SMSAs. Although the limitation to four SMSAs makes their data vulnerable to the same criticism as Wilms', their methodology is otherwise nearly flawless. They found that while 17 percent of proprietary graduates were nonwhite, 31 percent of the nonproprietary graduates were black. One should extrapolate these data to students only with caution, since there may be differential dropout and stopout probabilities.

Juhlin (1976) studied proprietary schools in Illinois. He reported only 53 percent of the students were white while 24 percent

were black (p. 11), while later in the same report (p. 33) he stated
that 57 percent of proprietary school students were nonwhite.
According to Wagner (1982), as of 1978 the racial distribution for
proprietary schools was nearly identical to that of the two year
college/vocational-technical institute group. Seventy-six percent of
the students in each group were white; of part time students, 89
percent of the two year college/vocational-technical group and 90
percent of the proprietary group were white. His data for blacks,
hispanics, and "other" varied by no more than 3 percent by school
type. The homogeneity by school type is noteworthy.

Interaction of race by curriculum seems probable. For example,
Wolman et al. (1972) reported that blacks were overrepresented in
office occupations programs. From another perspective, black studies
and chicano studies have been proposed as curricula in community
colleges (e. g., Thornton, 1972); no proprietary school has been cited
as having given serious consideration to such a curriculum. In the
context of discussing community college students from ghettos,
Thornton cites James McHolland's statement, "We are in the self-esteem
business" (p. 152). Proprietary schools are not (see Jones, 1973).

The overriding determinant of racial distribution in
postsecondary occupational programs is clearly the racial distribution
in the institution's service area. There appears to be no reliable
difference between proprietary and public institutions in this regard.

Enrollment status. Enrollment of full time versus part time
students has been considered by several investigators. Juhlin (1976)
found only a blurry distinction between full time and part time

status; the bounday seemed to be about 21-25 hours per week for proprietary schools. Therefore the utility of the following findings may be limited.

Wagner (1982) reported that at all postsecondary levels, younger students are more likely to attend on a full time basis. Kincaid and Podesta (1967) found that eight of their nine cosmetology schools provided for full time tutelage only. Therefore, enrollment status patterns may in part be a function of restrictions imposed by the institutions, and in part a function of age.

Belitsky (1969) suggested that for the majority of proprietary programs, evening enrollment implies part time enrollment. Wilms (1973a) reported that 80 percent of his proprietary students were enrolled full time. Hanson and Parker (1977) reported that in 1973-1974 proprietary schools enrolled 583,866 full time and 303,499 part time students. Of eight school types they listed, part time enrollment predominated only in the categories "flight" and "other." Juhlin (1976) found that 60 percent of Illinois proprietary students said they were full time, and two thirds said they were day students.

Thornton (1972) and Mortorana and Sturtz (1973) reported on community college enrollment statuses. Thornton concluded that part time enrollment often exceeded full time enrollment in community colleges, and that full time students were younger. Mortorana and Sturtz stated that almost half the occupational enrollment in community colleges was full time.

Two studies provided comparisons of enrollment status between proprietary and community college students. Wolman et al. (1972)

reported that 83 percent of their proprietary sample but only 61 percent of their public sample said they were considered to be full time students. Students in office and computer programs were more likely to be part time. In contrast to the Wolman study, Jung (1980) concluded that only 48 percent of proprietary students were full time; this suggests that there may be vast differences among schools and programs within the proprietary sector.

Wagner (1982) has provided us with a more careful examination than most. He indicated that in 1978 full time proprietary students were likely to come from a lower income family than were part time students. This relationship also held for community college/vocational-technical students, though it was less pronounced. The family income distribution for part time students did not differ by school type.

Since schools and students vary in their perceptions of full time status, this area is a singularly murky one. It seems reasonably clear that part time students are likely to be older. There does not seem to be a reliable difference between school types; idiosyncrasies of the various school and program samples probably conceal most differences that might exist on the enrollment status variable.

Whether or not other student characteristics discriminate between populations of proprietary and community college enrollees, the mere fact of differential choice suggests some difference in motivation. Many writers have made suggestions on what that difference may be.

Motivation. One example of a motivational factor purported to influence school choice, employment opportunity, will be used to

illustrate a difficulty which pervades this area of the literature.
Employment opportunity, according to Belitsky (1969) is likely the
most important motivation for proprietary students. Others who believe
job motivation to be important include Nolfi et al. (1978), Kincaid
and Podesta (1967), Podesta (cited in Fulton, 1969), Braden and Paul
(1971), Clark and Sloan (1966), Jung (1980), Trivett (1974) and Clowes
and Dickerson (1981). Three monitions are pertinent. First, all of
these studies, and most others in the area, are retrospective and thus
reflect the vagaries of memory rather than the situation when the
choice was actually made. Second, and closely related, the response
may be in part rationalization for the irreversible commitment of
significant fiscal and other personal resources (see, e.g., Festinger,
1957). Third, the ranked importance of a putative motivator may be in
part dependent on the number, identity, and perceived size of those
alternatives (see Torgerson, 1968). With the above caveats to be kept
clearly to the fore, it is still of some value to review what previous
writers have concluded.

Prior educational experiences and feelings about them have been
considered to be related to school choice. Braden and Paul (1971)
claimed that a "sizeable portion" (p. 201) of proprietary school
students is composed of those who dropped out of high school or who
reject the value of academic courses. This seems directly in conflict
with Wolman et al. (1972) who reported that "Proprietary and
nonproprietary students have almost identical profiles in terms of the
type of high school program pursued and the average grades received"
(p. 85). Ninety percent of Wolman's sample held a high school diploma.

Numerous writers do cite the nonacademic orientation of the proprietary school as a significant drawing card (Hoyt, 1966-7; Ivarie, 1967; Kincaid & Podesta, 1967; Podesta, in Fulton, 1969; Doherty, 1973; Juhlin, 1976; Nolfi et al., 1978). Wilms (1974) was particularly clear in this belief. He stated that while proprietary students were more concerned with postgraduate employment than were their public counterparts, he found no difference in achievement motivation. He believed that proprietary students made their choices based on an aversion to the public institutions which he claimed reminded them of the secondary schools in terms of structure, goals, faculty, academic orientation, and student population.

The above writers may mislead, absent a baseline for purposes of comparison. Cross (1970) found that community college students were fairly critical of their high schools. Between 40 and 45 percent of transfer, technical, and vocational students considered high school courses a waste of time. It is not clear that proprietary students have significantly more negative attitudes toward high school.

Another motivational factor often given as affecting educational choice is interpersonal influence. Kandel and Lesser (1970) argued that maternal aspiration, peer aspiration, and high school program type are major determiners of college attendance. A somewhat different list was provided by Williams (1972) who suggested that educational aspirations of high school seniors are most strongly affected by parental influence, and little by peers, with teachers intermediate. Perhaps reflective of the parental influence variable, Berdie and Hood (1965) reported that boys planning on trade school

attendance were disporportionately likely to have fathers who were in the skilled trades.

Curriculum may interact with susceptibility to influence. Juhlin (1976) showed that the effectiveness of advertising varies inversely with peer influence by type of school. For example, truck driving is effectively advertised, but barbering schools recruit best via peers.

The promise of vigorous job placement programs is another factor which is alleged to lead to the choice of a proprietary school (Kincaid & Podesta, 1967; Podesta, cited in Fulton, 1969; Jung, 1980). This expectation may not always be realistic. Less than a fifth of Wolman et al.'s (1972) proprietary school graduates reported that they got jobs as a result of school placement assistance. In addition, Jung et al. (1976) reported that "placement percentages for proprietary and nonproprietary graduates were similar .... considering only those persons who used school placement services, about 57% of the nonproprietary graduates found the service helpful, as compared to only 37% of the proprietary graduates" (p. 215). They also reported that only one out of five of their proprietary graduates reported finding a job as a result of placement services provided by the school.

Other motivational factors are also suggested in the literature. They include short program length (Ivarie, 1967; Podesta, cited in Fulton, 1969; Trivett, 1974; Nolfi et al., 1978) and flexibility of proprietary programs (Clark & Sloan, 1966; Belitsky, 1969). Cost of tuition is also discussed by several writers as affecting motivation. Kincaid and Podesta (1967) considered competition among proprietary

schools. They suggested that at least in cosmetology curricula, students appear to infer a correlation between school quality and tuition level. Perhaps those most susceptible to this fallacy are among the proprietary students who have rejected the less expensive community college alternative.

The fact that students at proprietary schools pay significantly greater tuition than they would at public institutions has been used to infer a strong motivation on the part of those students (Braden & Paul, 1971). Some support for this position was provided by Jones (1973), who pointed out that proprietaries seek out the goal oriented student, not the one who goes to school in order to "find himself" (p. 179). However, Wilms (1973a) claimed that students at proprietary schools are not more highly motivated, but find proprietary schools more psychologically compatible. Subsequently, Wilms (1974) cited an unpublished report which he said concluded that proprietary students appeared to be more highly motivated than those attending public institutions.

A variety of motivational factors is also suggested as causally related to the choosing of a community college. Cross (1970) stated that "research is virtually unanimous in concluding that students give 'nearness to home' as a primary reason for attending community colleges" (p. 182), a reason seldom attributed to proprietary students. Her data indicate that strength in major was an even more important factor for technical and vocational students; it was only of minor importance for transfer students.

Sheldon's (1981) sample of community college vocational students gave a variety of reasons for enrolling. Pre-employment training was given by 53 percent, 20 percent said inservice training, and 6.4 percent said retraining was a reason for enrollment. Therefore, about two thirds said they were in their vocational curricula for job related purposes. However, Sheldon appears to have allowed multiple responding.

Two groups of researchers compared proprietary and public students on motivational variables. Clowes and Dickerson (1981) sampled public and proprietary institutions offering two year degrees in clothing and textile programs. While 92 percent of the proprietary institutions saw preparation for immediate employment as their major objective, this was true of only 72 percent of the public colleges in their sample. Wolman et al. (1972) found that the reasons students gave for selecting the school attended were not distinguishable by school type. Eighty percent of their sample stated that their most important goal in attending the school was job related. Seventy-five percent of the students said they came to the school because it had the program they wanted. Public students said low cost influenced their decision, while proprietary students cited frequent program starts and shorter programs.

Motivation for school choice is even more problematic than are the other student characteristics previously considered. Many of the writers ascribing one motivational force or another as influencing student choice provide no supporting data; they often infer purported causes from the attributes of the schools. Few authors describe the

instrument they used to collect data from the students, and no sample of students is representative of proprietary students in general. In addition, motivational variables are particularly susceptible to context effects in retrospective data collection, an issue no previous writer in this field has addressed. Other maladies abound. The percentages, and even the relative importance, attributed to each of the purported motivational factors considered remains unknown, both for proprietary and for community college students. It is unfortunate that this promising set of variables remains opaque.

Summary

This chapter summarizes the history of both proprietary schools and community colleges, and discusses relationships between them. The literature on student characteristics is thoroughly reviewed for the pertinent time frame, and an acute shortage of high quality data is noted throughout. Nonetheless, the issues raised in the literature on student characteristics are deemed sufficiently important that further investigation is merited.

CHAPTER THREE

DESIGN AND METHODOLOGY

This chapter includes a description of the data base, and
discussions of the case selection process, the geographical
distribution of cases, variables selected for examination, indices of
internal consistency, and the method of analysis.

Data Base

The following description of the data base is taken from
Riccobono, Henderson, Burkheimer, Place, and Levinsohn (1981).

The National Longitudinal Study of the High School Class of 1972
(NLS), developed under contract to the National Center for Education
Statistics, is a deeply stratified national probability sample of
22,652 students who were high school seniors in 1972. The Background
Survey, including a test battery, a school record information form,
and a student questionnaire, was given in the spring of 1972; at least
a portion of the Background Survey was completed by 19,001 students
from 1,061 high schools.

Four followup surveys were administered. The first followup
survey was conducted from October 1973 to April 1974. It included
previous respondents and 4,450 seniors from 257 additional schools
which had not previously participated. Data were obtained from 21,350
subjects.

The second followup survey was conducted from October 1974 to April 1975. Data were obtained from 20,872 subjects. The third followup survey was conducted from October 1976 to May 1977; 20,092 subjects responded. The fourth, and final, followup survey was conducted from October 1979 to May 1980; data are available for 18,630 subjects.

Seventy-three percent (16,450) of the cases in the file contain at least some information for each of the five (Background plus four followup) surveys. This data base, while noisy, is the best available for the purpose of examining the hypotheses of interest here.

Case Selection

A case was selected if its composite FICE code for October 1972 was valid and corresponded to a Higher Education Directory (HED) code of 13 (public two year postsecondary), 16 (public two year postsecondary branch), or 27 (proprietary), as recorded on the Institutional Data Base (IDB) file.

If there was no match of a FICE code for October 1972 on the IDB file, then the case's FICE code was matched with the FICE Directory file to generate the institution's name and city. Then up to three reference works were consulted in an attempt to determine what HED code would be appropriate for the institution. The three reference works used were:

Directory of Postsecondary Schools with Occupational Programs
(Kay,1973-4);

Accredited Institutions of Postsecondary Education and Programs

(Council on Postsecondary Education, 1975); and

College Blue Book (Macmillan, 1973, 1977).

If two of the three institutional identifiers (FICE code, name,

city) matched an entry in a reference work, the reference work's

description of the institution was read. If there was sufficient

information, a HED code was assigned. If the assigned HED code was

13, 16, or 27, the case was selected. It is important to note that

for this purpose a 27 code was assigned to for-profit, nongovernmental

not-for-profit, and religious institutions whose stated purpose was

occupational education. Proprietary schools, in this sample, include

a few correspondence schools.

Additional case selection decisions have been made, and some

noise detected. No distinction has been maintained between the 13

and 16 codes because no differential prediction is made and because it

is not clear from the above reference works that the distinction is a

reliable one for the years 1972-5, given the rapid change in many

institutions' character and governance.

It was not possible to maintain distinctions among the allied

medical schools. Almost all were hospital related, and they were

predominately nursing, although xray and possibly other similar fields

are represented. It is possible that some three year nursing schools

were included in the sample. Almost all the allied medical and nursing

schools were proprietary.

The distinction between community colleges and public vocational

or technical or trade (etc.) schools has not been elicited from these

data. HED codes do not make such a distinction, I make no differential prediction, definitions of the institutions were not consistent from state to state, and the rapid change in institutions during that period make this distinction pointless. In addition, the distinction is now quite a bit fuzzier than even in the early 1970s, and since a purpose of this work is to extrapolate to the present, making distinctions among public two year postsecondary institutions seems unproductive. The key dimension for this study is public versus private occupational enrollment, and that dimension is reliably measured.

The population of cases selected for purposes of this study is contaminated. An unknown number of the subjects who attended public postsecondary schools were not in vocational programs. Curriculum information was often missing or ambiguous. Elimination of all those cases for which curriculum was either uncertain or not vocational would exclude more than 80 percent of the cases. On the other hand, analyses only at the level of the population would be of uncertain applicability to vocational students.

Because of these difficulties, a sample of the population was selected, and is subsequently referred to as the "vocational sample." It consists of the 487 public and 145 proprietary students in the population who stated that they were in vocational curricula. Because of problems with autocorrelation and fuzziness, no comparisons can be made between the population and the vocational sample; each, however, contributes information deemed to be of some value.

The geographical distribution of schools represented by selected cases was assembled. Table 6 lists the states which are not represented by at least one proprietary or public postsecondary institution.

Table 6

Geographic Distribution: States Not Represented

Entire Sample		Vocational Subsample	
Public	Proprietary	Public	Proprietary
Alaska	Alaska		Alabama
	Arizona	Alaska	Alaska
	Delaware		Arizona
	Georgia	Delaware	Delaware
	Nevada		Georgia
	North Dakota		Maine
	South Dakota	Montana	Montana
		Nevada	Nevada
		New Hampshire	New Hampshire
			North Dakota
		Rhode Island	
		South Dakota	South Dakota
			Utah
			Vermont

The states most frequently represented in the cases selected are given in Table 7, in descending numerical order, within category.

Table 7

The States Most Frequently Represented in the Data

Entire Sample		Vocational Subsample	
Public	Proprietary	Public	Proprietary
N=3012	N=357	N=487	N=145
California (691)	Pennsylvania (45)	California (93)	Pennsylvania (19)
New York (277)	Ohio (32)	New York (29)	New York (13)
Texas (219)	New York (28)	Texas (28)	New Jersey (10)
Illinois (171)	New Jersey (18)	Wisconsin (24)	Virginia (8)
Florida (168)	California (18)	Michigan (23)	Ohio (7)
Michigan (141)	Illinois (17)	Illinois (22)	California (6)
Alabama (88)	Texas (16)	Florida (21)	Nebraska (6)
Washington (85)	Missouri (15)	N. Carolina (20)	Tennessee (6)
N. Carolina (82)	Minnesota (12)	Washington (15)	Illinois (5)
Wisconsin (71)	Tennessee (12)	Alabama (14)	Missouri (5)
	Virginia (12)		

In general, states with large populations tend to be heavily represented, while those states with small populations are less likely to be represented in both the entire sample and the vocational subsample.

Variables

The NLS file contains 3,542 variables, some of which are redundant and some of which are composites of others; most are irrelevant to the task at hand. The variables selected for the present purpose fall into three major categories: demographic, background, and motivational.

Demographic. These variables included sex, race, and socioeconomic status. Each is a composite score.

Background. This category is divided into three subsets: educational, parental influence, and peer influence. The educational background group includes a composite aptitude score derived from four standardized ETS tests, a high school program composite which indicates whether the student was in a general, academic, or vocational technical curriculum, and a variable which indicates whether a student was ever active in a vocational education club.

There are four parental influence variables. The first is the student's estimate of how much his parents influenced his postsecondary plans. The second is the student's estimate of how much schooling his father wanted him to receive, and the third is the student's estimate of how much schooling his mother wanted him to receive. The last parental influence variable is the student's

perception of whether his parents encouraged him to go to school for vocational or technical training.

Peer influence is represented by two variables. The first is the student's description in 1972 of what his close friends planned to do in the next year. The second peer influence variable is the student's perception of whether peers encouraged him to attend school for vocational or technical training.

Motivational. Three questions were asked as part of each of the five surveys (in 1972, 1973, 1974, 1976, and 1979). The questions were:

"How important is each of the following to you in your life?

1. Being successful in my line of work.

2. Having lots of money.

3. Being able to find steady work."

Internal Consistency

Whenever self-report data are considered, there should be increased concern about the consistency of the information. The NLS-72 data allow several within-subject checks for concordance among measures; this section describes the concordance checks which were performed.

Each concordance check examines information on the type of school attended in October 1972. In most of these checks, a self-reported item is compared with the type of school either as given in the Higher Education Directory (HED) or as imputed by the author based on criteria described in the case selection section of this document.

The first check compared the HED code (given or imputed) with the student's description of the school's curriculum type: vocational, technical, or business; two year; or four year. Even though this NLS-72 question was not worded clearly, it should give us an indication of the reliability of the response. For purposes of this check, the only cases used were the 205 proprietary students whose responses were given and were considered by NLS-72 coders to be unambiguous. Remarkably, 202 of the 205 proprietary students said they were in vocational programs. The public students' responses were pointless to analyze here, since for many of them either vocational or two year would have been an appropriate response. It is noteworthy that only one proprietary and twelve public postsecondary students in this sample responded with a four year code. This validates the selection of the sample, which is designed to exclude four year students.

The second check compared the HED code with the students' evaluation of the school as publicly or privately controlled. Of the public students, 1082 responded unambiguously; of them, all but 20 said they were in public institutions. The proprietary students were considerably less accurate; of those responding unambiguously, 103 said they were in private schools while 90 said they were in public schools. This confusion on the part of the proprietary students is understandable since the question was worded in such a way that it was not clear whether the response was to be about control or access. In the case of the public students, control and access would have yielded

an identical response, while in the case of proprietaries, access is generally public even though control is not.

The third set of analyses compares the students' description of the schools as vocational, two year college or four year college, with the students' description of their curricula from a menu of nine groups of academic and seven groups of vocational areas. Presumably, those students who say they are in vocational schools ought to disproportionately be in vocational curricula; however those who are in vocational curricula could easily perceive themselves as in an academic program in a two year college.

Of the 324 respondents who said they were in vocational schools, 42 said they were in academic curricula. This putative error rate is probably spuriously high, since 24 of the 42 who apparently misclassified themselves gave their academic curriculum as "business." The 623 respondents who said they were in two year colleges reported their curricula about as would be expected -- 257 vocational and 366 academic, reflecting the dual mission of the community college.

The fourth set of analyses relates HED codes to student description of curriculum. As expected, students whose HED codes indicated a two year public postsecondary institution split almost evenly. Of the 1074 two year students who provided usable data on the curriculum variable, 587 reported that they were in academic curricula. The proprietary students' reported curricula, also as expected, were heavily tilted toward the vocational. Of the 173 proprietary students who provided usable data on the curriculum variable, only 28 said they were in academic curricula; 12 of those

reported "business" as their academic curriculum. Therefore, as with the above variables, student responses are reasonably dependable, but not overwhelmingly so.

The fifth set of analyses, as well as the sixth, is derived from a listing of an arbitrarily selected group of 100 consecutive respondents (cases 500-599 on the file of proprietary and public two year postsecondary students). The purpose of the fifth set is to compare the students' designation of curricular area with the code corresponding to the students' designation of his field of study in response to a previous question. For example, someone who said he was studying psychology should have coded social science as his academic area, and someone who said he was learning to be a policeman should have coded public service as his vocational area.

Of the 100 selected cases, 35 had unambiguous responses to both questions bearing on curricula. Table 8 lists the codes and the alphabetic equivalents for the two questions. Note that while the first two columns refer to a question with 16 response categories (9 academic and 7 vocational), the third and fourth columns contain information coded in the NLS-72 Field of Study Directory which has thousands of categories.

Table 8

Curriculum Consistency Check

Reported Curriculum Area			Field of Study	
Code	AC/VOC	Name	Code	Name
1	AC	Biological Sciences	1206	Medicine
2	AC	Business	502	Accounting
			502	Accounting
			501	Business
			501	Business
			502	Accounting
			506	Business Management
			506	Business Management
			501	Business
3	AC	Education	801	Education
			823	Early Childhood Ed.
			808	Special Education
			823	Early Childhood Ed.
4	AC	Engineering	171599	Elect Xmission Sup.*
5	AC	Humanities/Fine Arts	832	Music Education
			1005	Music
			1004	Music
			1004	Music
6	AC	Physical Sci./Math.	1901	Physical Sciences
			1204	Dentistry *
7	AC	Social Sciences	2001	Psychology
			2207	Political Science

Reported Curriculum Area			Field of Study	
Code	AC/VOC	Name	Code	Name
7	AC	Social Science	2201	Social Science
9	AC	Undecided	805	Higher Education
10	AC	Office/Clerical	140700	Secretary
			40300	Clerical
12	VOC	Mech./Engr. Technology	202	Architecture *
			171599	Elect Xmission Sup *
			171300	Drafting
			171400	Electrical Occpns.
			171400	Electrical Occpns.
14	VOC	Public Service	823	Early Childhood Ed *
			90203	Food Mgr./Broker
			90203	Food Mgr./Broker
16	VOC	Undecided	801	Education *

* = possible mismatch of Curricular Area and Field of Study

Of the 35 cases represented in Table 8, 6 can be considered inexact matches. Electrical Transmission Supervisor is represented both in Academic - Engineering and in Vocational - Mechanical/Engineering Technology. Dentistry is paired with Academic - Physical Sciences/Mathematics. Architecture is paired with Vocational - Mechanical/Engineering Technology. Early Childhood Education is paired with Vocational - Public Service. Education is paired with Vocational - Undecided. In each of these cases there is an easily inferred rationale for the inexactness of the match.

The sixth, and final, analysis compared the FICE code initially derived from the school name provided by the respondent with the composite FICE code which was later added by NLS staff. In the same sample of 100 cases used in the fifth analysis, there were 35 perfect matches between the original and the composite codes. In an additional 11 cases, the composite was embedded within the original FICE code. In the remaining 54 cases there was no original FICE code. There were no instances of outright disagreement between the original and the composite codes.

Therefore, where one would reasonably expect concordance between pairs of the variables discussed in this section, there is evidence of concordance.

Method of Analysis

A chi squared (for nominal scale variables) or a Mann-Whitney U (for ordinal scale variables) was performed on each of the pertinent variables in comparison with the Higher Education Directory (HED) code for school type. These two nonparametric tests were selected for good

reason. The chi squared is one of the few well known tests for bivariate nominal distributions; it tests the hypothesis that "two groups differ with respect to some characteristic and therefore with respect to the relative frequency with which group members fall in several categories" (Siegel, 1956, p. 104). Siegel further points out that when the chi squared test is used "there is usually no clear alternative" (p.110).

The Mann-Whitney U tests the hypothesis that "two independent groups have been drawn from the same population" (Siegel, 1956, p. 116). According to Siegel, its power-efficiency approximates that of the t test while not requiring the latter's assumptions of normality, homogeneity of variance, and interval scaling.

It is recognized that the use of more powerful and more sensitive parametric and multivariate tests could have been justified. In fact, future research should take advantage of such tests. The intent of the present study, however, was preliminary examination, on a variable by variable basis. It was deemed judicious to use tests which would be moderately familiar to (and interpretable by) the likely consumer, and which make few assumptions about the characteristics of the distributions.

CHAPTER FOUR

RESULTS AND ANALYSIS OF THE STUDY

This chapter contains the results of the statistical analyses, and interpretations of their meaning.

Results

Following is a description of the outcome of the nonparametric testing, variable by variable. For each variable, information on its behavior in the entire population of students attending public two year postsecondary or proprietary institutions will be presented first. Second, each variable's behavior among only those cases in which the respondent indicated that he was in a vocational curriculum will be addressed; this latter group of cases constitutes the vocational sample. Each member of the sample is also a member of the population. This autocorrelation, as well as fuzziness and the presence of both occupational and nonoccupational students in the population, demands that no statistical comparisons be made between the population and the vocational sample.

Table 9 lists the number of cases by group and variable. Case retention was high. The lowest retention of cases in each group was on father's schooling expectation, but even there data were available for more than 80 percent of the cases in each group.

Table 9

Case Retention by Group and Variable

	Entire Population		Vocational Sample	
Variable	Public	Prop.	Public	Prop.
Sex	3010	357	486	145
Race	2994	356	483	145
SES	2997	356	486	145
High School Program	3010	356	487	145
Voc-Ed Club	2752	325	447	139
Father's Expectation	2526*	294*	411*	123*
Mother's Expectation	2585	303	425	127
Parental Encouragement	2805	333	482	140
Plans of Friends	2751	329	447	141
Peer Encouragement	2765	324	473	138
Total Cases	3012	357	487	145

*lowest percentage retention within group

The first variables to be considered are demographic: sex, race, and socio-economic status. The composite score for sex is based on five responses to the question over a period of 7 years. The valid response alternatives were dichotomous. Sex was significantly related to type of postsecondary school (HED) for the population (chi squared=96.11, N=3367, df=1, $p < .01$) and for those cases in which the student indicated that he was in a vocational curriculum (chi squared = 28.80, N=631, df=1, $p < .01$). (See Tables 10 and 10A).

Table 10

Relationship Between HED and Sex - Entire Population

Sex	Public N	Public %	Proprietary N	Proprietary %
Male	1564	52	87	24
Female	1446	48	270	76
Total	3010	100	357	100

Table 10A

<u>Relationship Between HED and Sex - Vocational Sample</u>

<u>Sex</u>	<u>Public N</u>	<u>Public %</u>	<u>Proprietary N</u>	<u>Proprietary %</u>
Male	220	45	29	20
Female	266	55	116	80
Total	486	100	145	100

Examination of the tables shows that the public postsecondary options are approximately equally attractive to males and females; males made up 52 percent of the entire public population and 45 percent of the vocational public sample. Proprietary schools males made up 24 percent of the entire population, and 20 percent of the vocational sample. Examined from another perspective, while the proprietary schools attracted 30 percent of the females in the vocational group, less than 12 percent of the males in the vocational sample selected proprietary schools.

The composite score for race is based on one response to the question in each of three surveys. Race is significantly related to HED for the entire population (chi squared = 27.08, N=3350, df=5, $p <$ .01); cells with low expected frequencies precluded analysis by chi squared for the vocational sample. Combining the Amerind, Hispanic, Asian, and Other cells for the vocational sample allows the test to be made (chi squared = 9.19, N=628, df=2, $p < .02$). (See Tables 11 and 11A).

Table 11

Relationship Between HED and Race - Entire Population

Race	Public N	Public %	Proprietary N	Proprietary %
Amerind	32	1	1	0
Black	322	11	33	9
Hispanic	195	6	8	2
Asian	91	3	0	0
White	2288	76	307	86
Other	66	2	7	2
Total	2994	100	356	100

Table 11A

Relationship Between HED and Race - Vocational Sample

Race	Public N	Public %	Proprietary N	Proprietary %
Amerind	6	1	1	1
Black	38	8	15	10
Hispanic	42	9	3	2
Asian	7	1	0	0
White	379	78	123	85
Other	11	2	3	2
Total	483	100	145	100

For the entire population, 76 percent of those in public schools were white while in proprietaries 86 percent of the students were white. The next largest difference on the race variable was that no asian-american in the entire population attended a proprietary school, while three percent of the public population was asian-american. In the vocational sample, whites constituted 78 percent of the public and 85 percent of the proprietary students. Also in the sample, 9 percent of public enrollees were hispanic, while this was true of only 2 percent of proprietary enrollees.

The composite score for socio-economic status (SES) is based on an equally weighted combination of father's education, mother's education, parents' income, father's occupation, and household items. The scores were considered low if in the lowest quartile, high if in the highest quartile, and middle if within the semi-interquartile range. For the entire population, SES is significantly related to HED (Mann-Whitney U = 499813, N=3353, p=.03). (See Tables 12 and 12A).

Table 12

Relationship Between HED and SES - Entire Population

SES	Public N	Public %	Proprietary N	Proprietary %
Low	667	22	79	22
Middle	1594	53	219	62
High	736	24	58	16
Total	2997	100	356	100

Table 12A

Relationship Between HED and SES – Vocational Sample

SES	Public N	Public %	Proprietary N	Proprietary %
Low	135	28	34	23
Middle	271	56	89	61
High	80	16	22	15
Total	486	100	145	100

Only 53 percent of the entire public population was of the middle class, compared to 62 percent of the proprietary population. About 24 percent of the public students was upper class, versus only 16 percent of the proprietary attendees. Analysis of the smaller, vocational, sample produced a nonsignificant U.

The second class of variables to be considered is background variables, which are grouped into three subsets: educational background, influence by parents, and influence by peers.

The composite aptitude score is the first of three variables related to educational background. The aptitude score was derived from the simple sum of four standardized ETS scores (vocabulary, reading, letter groups, and mathematics). The sums were then partitioned by the semi-interquartile range as previously described with SES. Neither for the entire population nor for the sample was U significant.

The second educational background variable is the high school program composite (PGM) which was derived from responses by school personnel to the School Record Information Form, as well as from student responses from each of three surveys. For the entire population PGM was significantly related to HED (chi squared = 33.21, N=3366, df=2, $p < .01$). (See Tables 13 and 13A).

Table 13

Relationship Between HED and High School Program - Entire Population

Program	Public N	Public %	Proprietary N	Proprietary %
General	1138	38	101	28
Academic	1283	43	140	39
Voc - Tech	589	20	115	32
Total	3010	100	356	100

Table 13A

Relationship Between HED and High School Program - Vocational Sample

Program	Public N	Public %	Proprietary N	Proprietary %
General	210	43	42	29
Academic	132	27	42	29
Voc - Tech	145	30	61	42
Total	487	100	145	100

In the entire population, more than 32 percent of proprietary students had been in high school vocational-technical programs, while this was true of less than 20 percent of those in public postsecondary schools. On the other hand, public students were more likely to have been in general high school programs (38 percent) compared to proprietary students (28 percent). A similar set of relationships obtains when one considers only the vocational sample (chi squared = 10.94, N=632, df=2, p< .01).

The third and final variable in the educational background group is the student's response regarding whether he had ever been active in a vocational education club, and whether he had been a leader in such a club. Considering the entire population, there was a significant relationship between club activity and HED (U = 406976, N=3077, p< .01). (See Tables 14 and 14A).

Table 14

Relationship Between HED and Vocational Education Club Activity –

Entire Population

Voc-ed Club	Public N	Public %	Proprietary N	Proprietary %
Never a member	2134	78	223	67
Was active	436	16	71	22
Was a leader	182	7	31	10
Total	2752	100	325	100

Table 14A

Relationship Between HED and Vocational Education Club Activity –

Vocational Sample

Voc-ed Club	Public N	Public %	Proprietary N	Proprietary %
Never a member	315	70	94	68
Was active	93	21	31	22
Was a leader	39	9	14	10
Total	447	100	139	100

Proprietary students were more likely to have been active, and to have been leaders, in such clubs. However most (78 percent of public and 69 percent of proprietary) students had never been active in these clubs. The analysis for the vocational sample produced a nonsignificant U.

The second subset of background variables, influence by parents, is represented by four variables. The first variable is an estimate by the student of how much his parents influenced his postsecondary plans. Neither for the entire population nor for the vocational sample was U significant.

The second parental influence variable is the student's estimate of how much schooling his father wanted him to receive. For the entire population, chi squared is uninterpretable due to a low minimum expected cell frequency. However, if the Quit High School and the High School Grad cells are combined, the test can be used (chi squared = 349.19, N=2820, df=5, $p < .01$). It is striking that 58 percent of proprietary students reported that their fathers wanted them to attend a vocational, technical, trade, or business school; this was true of only 15 percent of public postsecondary students. (See Tables 15 and 15A).

Table 15

Relationship Between HED and Father's Schooling Expectation –

Entire Population

Father Expected	Public N	Public %	Proprietary N	Proprietary %
Quit High School	5	0	0	0
High School Grad	68	3	18	6
VTTB	380	15	171	58
2 yrs. College	583	23	13	4
4 yrs. College	936	37	55	19
Grad/Prof School	282	11	9	3
Don't Know	272	11	28	9
Total	2526	100	294	100

Table 15A

Relationships Between HED and Father's Schooling Expectation –

Vocational Sample

Father Expected	Public N	Public %	Proprietary N	Proprietary %
Quit High School	0	0	0	0
High School Grad	14	3	9	7
VTTB	123	30	84	68
2 yrs. College	109	26	5	4
4 yrs. College	92	22	13	10
Grad/Prof School	19	5	1	1
Don't Know	54	13	11	9
Total	411	100	123	100

For the vocational sample also, the relationship between father's preference and HED was significant (chi squared = 73.43, N=534, df=5, p< .01). Approximately 68 percent of proprietary but only 30 percent of public students perceived their fathers to want them to attend a vocational, technical, trade, or business school.

The third parental influence variable is the student's estimate of how much schooling his mother wanted him to receive. As with the preceding variable, chi squared could not be interpreted for the entire population because of a low minimum expected cell frequency. Similarly, combining the Quit High School and the High School Grad cells allows the calculation to be interpretable (chi squared = 353.5, N=2888, df=5, p< .01). (See Tables 16 and 16A).

Table 16

Relationship Between HED and Mother's Schooling Expectation -

Entire Population

Mother Expected	Public N	Public %	Proprietary N	Proprietary %
Quit High School	7	0	0	0
High School Grad	64	2	11	4
VTTB	419	16	188	62
2 yrs. College	618	24	20	6
4 yrs. College	1000	39	57	19
Grad/Prof School	288	11	9	3
Don't Know	189	7	18	6
Total	2585	100	303	100

Table 16A

Relationship Between HED and Mother's Schooling Expectation -

Vocational Sample

Mother Expected	Public N	Public %	Proprietary N	Proprietary %
Quit High School	0	0	0	0
High School Grad	15	4	5	4
VTTB	137	32	89	70
2 yrs, College	111	26	6	5
4 yrs. College	111	26	18	14
Grad/Prof School	14	5	1	1
Don't Know	37	9	8	6
Total	425	100	127	100

Also paralleling the preceding analysis, 62 percent of proprietary versus 16 percent of public students reported that their mothers wanted them to attend a vocational, technical, trade, or business school. The parallel also held for the vocational sample (chi squared = 64.29, N=552, df=5, p< .01).

The last parental influence variable is the student's perception of whether his parents encouraged him to go to school for vocational or technical training. The content of this variable overlaps the previous two, but was asked a year later, in 1973. For the entire population this variable was significantly related to HED (chi squared = 105.56, N=3138, df=3, p< .01). (See Tables 17 and 17A).

Table 17

Relationship Between HED and Parental Encouragement for Voc-Tech –

Entire Population

Parents	Public N	Public %	Proprietary N	Proprietary %
Encouraged	1331	47	256	77
Discouraged	183	6	7	2
Both	168	6	15	4
Neither	1123	40	55	16
Total	2805	100	333	100

Table 17A

Relationship Between HED and Parental Encouragement for Voc-Tech –

Vocational Sample

Parents	Public N	Public %	Proprietary %	Proprietary %
Encouraged	332	69	114	81
Discouraged	12	2	1	1
Both	34	7	6	4
Neither	104	22	19	14
Total	482	100	140	100

In the entire population, more than three fourths (77 percent) of proprietary students, compared to less than half (48 percent) of public students, reported that their parents encouraged them to obtain vocational or technical training. For the vocational sample, a similar relationship is present (chi squared = 8.83, N=662, df=3, p=.03); 81 percent of the proprietary, compared to 69 percent of the public, students reported encouragement to gain vocational or technical training.

The third subset of background variables, influence by peers, is represented by two variables. The source of data on the first variable is the student's description in 1972 of what his close friends planned to do in the next year. For the entire population, plans of friends was significantly related to HED (chi squared = 74.41, N=3080, df=7, p<.01). (See Tables 18 and 18A).

Table 18

Relationship Between HED and Plans of Close Friends –

Entire Population

Friends' Plans	Public N	Public %	Proprietary N	Proprietary %
Military	57	2	4	1
VTTB	224	8	61	18
Homemaker	31	1	11	3
College	1873	68	168	51
Apprent. or OJT	20	1	4	1
Work Full Time	242	9	48	14
Don't Know	241	9	21	6
Other	63	2	12	4
Total	2751	100	329	100

Table 18A

Relationship Between HED and Plans of Close Friends –

Vocational Sample

Friends' Plans	Public N	Public %	Proprietary N	Proprietary %
Military	8	2	1	1
VTTB	69	15	30	21
Homemaker	6	1	2	1
College	232	52	65	46
Apprent. or OJT	5	1	2	1
Work Full Time	51	11	21	15
Don't Know	64	14	12	8
Other	12	3	8	6
Total	447	100	141	100

For the entire population, while 51 percent of proprietary students said their friends planned to attend college, this was true of 68 percent of the public postsecondary students, and while 18 percent of proprietary students said their friends would be attending a vocational, technical, trade, or business school, this was true of only 8 percent of public students. For the vocational sample, chi squared was not significant.

The second peer influence variable was the student's perception of whether peers encouraged him to attend school for vocational or technical training. (See Tables 19 and 19A).

Table 19

Relationship Between HED and Peer Encouragement of Voc-Tech –

Entire Population

Peers	Public N	Public %	Proprietary N	Proprietary %
Encouraged	778	28	154	48
Discouraged	155	6	13	4
Both	262	9	34	10
Neither	1570	57	123	38
Total	2765	100	324	100

Table 19A

Relationship Between HED and Peer Encouragement of Voc-Tech –

Vocational Sample

Peers	Public N	Public %	Proprietary N	Proprietary %
Encouraged	183	39	73	53
Discouraged	24	5	5	4
Both	60	13	15	11
Neither	206	44	45	33
Total	473	100	138	100

For the entire population there was a significant relationship between the encouragement of friends and HED (chi squared = 56.56, N=3089, df=3, p< .01). Of proprietary students 48 percent perceived that peers encouraged them to obtain vocational or technical training, versus 28 percent of public students. A similar relationship holds for the vocational sample (chi squared = 9.02, N=611, df=3, p=.03).

The third class of variables to be considered is attitudinal variables. Three attitudinal questions were asked as part of each of five surveys (in 1972, 1973, 1974, 1976, and 1979). The questions were:

"How important is each of the following to you in your life?

1. Being successful in my line of work.

2. Having lots of money.

3. Being able to find steady work."

The response alternatives in each case were: not important, somewhat important, very important.

For the base year (1972) the first question, success in work, was not significantly related to HED for either the entire population or the vocational sample. The second question, importance of money, was significantly related to HED for the entire population (U = 274942, N=2518, p=.03); the largest difference among the pairs of cells was that 19 percent of public, compared to 12 percent of proprietary, students thought that having lots of money was very important. For the vocational sample U was not significant. The third base year question, steady work, showed no significant relationship with HED for either group.

From the data obtained on the three attitudinal variables during the 1973, 1974, and 1976 follow-up surveys no significant U was obtained for either the entire population or the vocational sample.

In the 1979 (fourth follow-up) data, the first variable, importance of success in work, was significantly related to HED (U = 332832, N=2665, p=.01) for the entire population. The largest difference among the cells was that while 21 percent of public postsecondary students thought success was somewhat important, 28 percent of proprietary students thought so. None of the other Us for 1979 was significant.

For the attitudinal variables 30 Mann-Whitney Us (5 surveys x 3 variables x 2 sample sizes) were performed. Two of the tests were significant; once on importance of money and once on success in work.

Interpretation of Findings

While males made up about half of both public school groups, they accounted for less than one third of each private group. The minimeta-analysis in Chapter Two yielded estimates of 44 and 33 percent female. Thought there are vast differences in design and analysis among the studies, the consistent predominance of females is overwhelming. The obvious, and likely true, explanation is that the private entities offer popular curricula which traditionally attract only female enrollees, e.g., nursing, beautician; these curricula appear to be less common in public entities. On the other hand, the high technology, capital intensive, and male stereotypic programs such as auto mechanics, diesel mechanics, engineering, etc., are infrequently offered by proprietary entities.

In the present study, proprietary school students were more likely to be caucasian. Hispanics, asian-americans, and blacks were each underrepresented in proprietary schools. This finding is in stark contrast to the data in the minimeta-analysis, where caucasians constituted less than 60 percent of proprietary students. The present data should be taken more seriously than those examined in the minimeta-analysis, since the two earlier studies were limited to geographic areas with unusually high black and other minority populations. Almost two thirds of the proprietary students represented in the present data and in the minimeta-analysis were middle class. These findings can be applied to federal and state educational policy. For example, if racial integration and inclusion of the lower class in postsecondary occupational education are policy goals, consideration might be given to emphasizing the funding of the public institutions, which are more likely to serve non-white and lower class students.

While the composite aptitude score was unrelated to school type, those who attended proprietary schools were much more likely to have been vocational-technical students while in high school. However, while the present data show 42 percent of proprietary students to have been in vocational-technical programs in high school, the minimeta-analysis suggests 30 percent or less. Due to previously discussed inconsistency on this measure within the minimeta-analysis, the present data are taken as more authoritative.

Proprietary students are more likely to have been active, or leaders, in high school vocational education clubs. Thus high school curricular activity tends to predict postsecondary activity.

Parental influence is potent; more than two thirds of mothers and more than half of the fathers of proprietary students wanted the student to attend a vocational, trade, technical or business school. In contrast, this was true of only about one sixth of the parents of public students. Even a year after high school graduation, the effect of parental influence was significant, although considerably diminished.

Peer influence was also of some import. Proprietary students were as likely as not to report that their friends would attend college; 18 percent of proprietary students reported their friends would be attending a vocational, trade, technical, or business school. More than two thirds of public students reported that their friends would attend college, while eight percent reported that friends would be attending a vocational, trade, technical, or business school. Thus, people tend to do what their peers do, a conclusion which hardly breaks new ground. Further, data on the second peer influence variable, student's perception of whether peers encouraged attending school for vocational or technical training, showed that people tend to do what their peers want them to do, a miniscule extension of the preceding conclusion.

The attitudinal variables were expected by this writer to be the most potent group. Since the proprietary school literature in general, and the minimeta-analysis in particular, emphasize finding work and succeeding at work, it seemed safe to assume that work related attitudes would discriminate between proprietary and public students, especially when there is considerable likelihood that the

public population is contaminated with general education students while the private population is not. Assumptions must fall before conflicting data. And these data are overwhelming. Of three questions asked during each of five different years in two different sample sizes, for a total of 30 statistical comparisons, only two were significant, and they were neither in the same year nor for the same variable nor of any impressive magnitude. The two significant comparisons must be considered aberrations. These attitudinal variables are unrelated to choice of school type.

The research questions can now be answered for the traditional postsecondary student. First, those who choose proprietary education are disproportionately female, caucasian and middle class, likely to have been in a high school vocational curriculum, and likely to be similar in aptitude to those who choose public postsecondary schools. Second, two motivational factors clearly predict choice: pressure from parents and pressure from peers. Attitudes toward work and money, at least as measured here, decidedly do not predict educational choice.

The question of competition for a common student pool by public and proprietary institutions can be answered by saying that at a national level there are significant differences between characteristics of recent high school graduates who enroll in proprietary, rather than public, postsecondary institutions. This does not rule out the possibility that competition, particularly at the local level, exists. Local evidence of competition is occasionally found (e.g., Hyde, 1976). The present data show that pressure exerted by peers, and particularly by parents, is a strong predictor of school

choice. Thus there may be competition, not directly for students, but for the minds of significant others.

Some observed demographic differences may be explained without reference to competition. One such set of explanations may be found in the pattern of curriculum offerings. Female oriented curricula are most common in proprietary schools. Specific, job-focussed, curricula may disproportionately attract traditional middle America. More important, it seems likely that if your friend is planning to become a secretary, you will likely do so, too; however, it is unlikely that even though your friend is studying philosophy or mathematics, you will do so. Specifically, we tend to model the concrete goals of others, but not the more abstract ones, especially when we cannot relate the goal to our own prior experience.

This approach is quite consistent with that of Willis (1977), who found that working class students actively made those choices which ensured that they would remain in the same class. Additional support can be found in the fact that aptitude did not differ between school types. However, the data are also consistent with the more manipulative assumptions of Bowles and Gintis (1976) and Karabel (1972) in that peer and parental pressure appear to strongly influence school choice. It is likely that both active and passive processes are coordinate.

CHAPTER FIVE

SUMMARY, CAVEATS IN INTERPRETATIONS OF FINDINGS,

CONCLUSIONS AND RECOMMENDATIONS

This chapter includes a summary, caveats in interpreting

findings, conclusions, and recommendations for further study.

Summary

Prior studies of proprietary school students have been extremely

limited, in scope, in generalizability, and in value to the reader.

Despite the claims of Jung (1980), Wilms (1973b), Braden and Paul

(1971), and others, that the public sector of postsecondary education

competes with the proprietary school industry, there is little in the

literature to test their argument.

If there were competition, one would expect that the

characteristics of the student populations would be quite similar and

that motivation for enrollment would also be similar. While there are

some data on characteristics of public postsecondary students (e.g.,

Mortorana & Sturtz, 1973), there is precious little known of the

proprietary student. The present research examines data from the

National Longitudinal Study of the High School Class of 1972

(Riccobono, et al., 1981) in order to expand our knowledge of

proprietary student characteristics and to test the competition

argument.

In excess of 3300 cases were located on the NLS file which met the major criterion that in 1973 there was evidence of attendance at either a proprietary or public postsecondary institution as defined for purposes of this study. Analysis of demographic variables showed that proprietary students were more likely to be white, middle class, and female. They were also more likely to have studied in a vocational-technical curriculum in high school, were encouraged by parents and peers to attend a vocational, technical, trade, or business school, and were more likely to have friends who planned to enroll in one, too. Expected differences in work related attitudes were not observed.

Support for the competition argument is not found in the present population. There are substantial differences between those who attend proprietary and those who attend public schools. Peer and parental influences appear to predominate as determiners of choice.

Caveats in Interpreting Findings

The students represented in the data entered postsecondary study within one year after leaving high school. These students may be different in demographic characteristics and motivation from those who enroll later in life.

The present data constitute a population selected from a sample, and thus are visited with all of the sins of the larger sample. The defining characteristics are arbitrary, but not capricious; other definitions could have been selected, with unknown consequences for the findings. Analyses of internal consistency showed some noise in the data; considerable other error may well be present.

The use of a sample of the selected population, in addition to using the population itself, may raise a question. The entire population certainly contains a larger proportion of nonvocational public students than does the sample. In addition, the full population certainly contains vocational students who did not properly code their curriculum. This is especially likely with the present data, as discussed in Chapter Three. From the writer's perspective, the population and the sample have complementary defects, and since there was remarkable consistency in the data between the full population and the vocational sample, the use of this device seems to have done little harm. However, since no one else has used this method in the proprietary literature, some caution in generalizing may be called for.

It is vital to note that the subjects in the current research were all recent high school graduates. Therefore, the present research did not examine the older postsecondary student. It is difficult to be certain how big a portion of the proprietary school population has been excluded; since the minimeta-analysis found mean age estimates of 20.5 and 27 years, we know that some students are older, but have no reasonable way to guess how many.

The greatest problem in interpretation is in generalizing to the proprietary schools of today. Although the present data are not archaic when compared to the bulk of the proprietary school literature, twelve years have passed since the commencement of data collection. The funding of proprietary schools, and possibly the characteristics of the schools and of their students, have changed.

While the writer suspects the changes are less than overwhelming, there is no way to know. Certainly the proprietary literature is of little assistance.

Conclusions

The present study is the first to select cases from a nationwide random sample in order to characterize students who attend proprietary schools and to compare them with students who attend public institutions which offer less than a four year curriculum. For a variety of reasons, including the societal and economic changes which have occurred since the early 1970s, the following conclusions should be read with some caution. However, the conclusions are based on the best available data pertinent to the questions addressed.

Until the present study there was little research published on the characteristics of proprietary students, although there was much speculation. Now we know that proprietary students who have recently graduated from high school are disproportionately white, female, and middle class, although they do not differ in aptitude from their public counterparts.

Since little was known of the characteristics of proprietary students, it is not surprising that spokesmen for the proprietary industry (e.g., Kincaid and Podesta, 1967) concentrated on characteristics of the schools as the factors motivating students to enroll. Now we know that parental pressure and peer pressure are strong predictors of proprietary school attendance among recent high school graduates. In addition, measures of job related attitudes, which the literature suggests should differentiate the two types of student, fail to do so.

At least on the national level, there is no evidence of competition for the traditional high school graduate between proprietary and public institutions since they draw from different populations. This finding has implications for marketing strategy, assuming that the goal is to more effectively exploit the population from which current students are drawn. First, proprietaries should attempt to increase their distinctiveness in the marketplace. Second, they should do so by emphasizing middle class ideals. Third, the pitch should be aimed at white, middle class parents as well as at the students and their peers.

That there is no compelling evidence of competition at the national level for recent high school graduates should not blind the observer to other phenomena. We know little of the characteristics of later enrollees. In addition, the existence of competition at the local level has a reasonable probability, although it has not been investigated systematically. Such competition would be masked in national data. The careful collection and analysis of local data on this issue should be of high priority for those who draft education policy at all levels. While the present analyses cannot speak to local competition, they do have something to say about national education policy.

Education policy makers at the federal level should not succumb to plaintive cries from the proprietaries for increased tax support because of competition with public institutions. There is at present only one study (Hyde, 1976) which seems to support that argument, and that study involved only two schools in one locality. It is true that

proprietary schools fail at a high rate. However, poor marketing and management strategies or lack of demand, rather than competition, are more likely to be responsible. Proprietaries were failing long before their alleged public competitors became prominent. The high failure rate should not be taken to mean that the industry is in trouble, but that the niche is a narrow one in a changing landscape, and that those that are nimble survive, often quite handily. Increased tax support is likely to engender the very competition which the proprietaries so fear.

Recommendations for Further Study

The present study examined only the traditional postsecondary student. We still know little of the older postsecondary student. This lacuna must be addressed. The present methodology and data base can be used to fill the gap in part.

Since there has been increased tax support for proprietaries during the past twelve years, it would be quite interesting to examine newer data on the same variables; the prediction to be tested is that there is more overlap in student characteristics now than there was in 1973, since both school types now have access to federal funding for attracting students. Although the present evidence provides little support for putative competition for students, the recent decrease in the traditional postsecondary school population may have changed the picture.

The data used in the present study are from the early 1970s. Much has changed since then. There is strong pressure on schools receiving federal funds to reduce sex differences in curriculum enrollment. The

patterns of job and wage competition and of unemployment have shifted, and service industries have overwhelmed manufacturing in the job market. The U. S. population has become older and the supply of traditional high school graduates has declined. More females have entered both higher education and the job market. The population of proprietary schools has probably changed, and the building boom of community colleges has ended. These factors (and probably others) suggest the need for research using more recent data.

The minimeta-analysis discussed in Chapter 2 indicates that local differences in student characteristics may well exist, especially as reflected by racial and socioeconomic characteristics of the populations. Local differences in program availability, in part due to variability among job markets, are also likely to affect the student populations. Studies are needed which examine, at the local level, the characteristics of proprietary and public postsecondary students.

There are likely to be real, but as yet unexamined, differences among segments of the proprietary community. In particular, the characteristics of students enrolled in correspondence schools and in private not-for-profit schools seem likely to differ from those in other segments of the proprietary industry.

It would be of considerable interest to adequately define the characteristics of existing proprietary schools, with a view toward comparing curricula with those available in community colleges. Care would need to be taken, since common curricular names may well mask significant differences. It is in the area of curriculum that I suspect there is the greatest difference between public and private,

and I also suspect curriculum has the greatest potential for being a competitive battleground.

We know little, other than Jung's (Jung, Campbell, & Wolman, 1976) work, of what happens to graduates of proprietary schools. Our knowledge of graduates is even more sparse and problematic than is our knowledge of students. The consequences of postsecondary occupational education are of great importance to both policy makers and consumers.

The proprietary industry is vast, with an everchanging membership. That so little is available in the literature poorly serves both the industry and the public.

References

, Accredited institutions of postsecondary education and programs.

(1975). Council on Postsecondary Education.

Arns, K. F. (1981). Editor's notes: Responding to a changing world.

New Directions for Community Colleges, 33, 1-10.

, Belitsky, A. H. (1969). Private vocational schools and their students:

limited objectives, unlimited opportunities. Cambridge MA:

Shenkman Publishing.

Bender, L. W. (1977). The contract college: latest version of the

community college. Community College Review, 5(2), 43-54.

Berdie, R. F. & Hood, A. B. (1965). Decisions for tomorrow: Plans of

high school seniors for after graduation. Minneapolis: Jones

Press.

Blocker, C. E., Plummer, R. H., & Richardson, R. C., Jr. (1965). The

two-year college: A social synthesis. Englewood Cliffs:

Prentice-Hall.

Bowles, S. & Gintis, H. (1976). Schooling in capitalist America. New

York: Basic Books

Braden, P. V. & Paul, K. K. (1971). Vocational education and private

schools. In Law, G. F. (Ed.), Contemporary concepts in vocational

education. Washington D. C.: American Vocational Association, pp.

200-204.

California community college students: A brief profile of

those enrolled, particularly in vocational education. (1977).

Sacramento: California Community Colleges, Office of the Chancellor.

Carter, E. H. (1976). A followup study of former occupational technical students at Virginia Community Colleges. (ERIC Document Reproduction Service No. ED 136 899).

Clark, H. F. & Sloan, H. S. (1966). Classrooms on main street. New York: Teachers College Press.

Clowes, D. A. & Dickerson, K. G. (1981). Clothing and textile programs: Contrasting public, private, and proprietary schools. Journal of Studies in Technical Careers, 3, 126-134.

Cohen, A. M. & Brawer, F. B. (1982). The American community college. San Francisco: Jossey-Bass.

College blue book. (1973, 1977). N. Y.: Macmillan.

Community, junior, and technical college directory. (1975-82). Washington D. C.: American Association of Community and Junior Colleges.

Counts, G. S. The selective character of American secondary education. (1969; reprint of 1922 edition). New York: Arno Press.

Critique of research entitled "The effectiveness of public and proprietary occupational training" by Welford W. Wilms. (1974). Washington D. C.: American Vocational Association.

Cross, K. P. (1970). The role of the junior college in providing postsecondary education for all. In Trends in postsecondary education. Washington D.C.: U. S. Government Printing Office.

Cross, K. P. (1971). Beyond the open door. San Francisco: Jossey-Bass.

Doherty, G. P. (1973). Case Study: The Bell and Howell schools. In

    Vermilye, D. W. (Ed.), The future in the making. San Francisco:

    Jossey-Bass, pp. 182-189.

Erickson, E. W., Hill, W., Winokur, H. S., Jr., Atwater, D., &

    Guerrier, U. (1972). Proprietary business schools and community

    colleges: Resource allocation, student needs, and federal

    policies. (Contract No. 05-71-134). Washington D. C.: Department

    of Health, Education, and Welfare.

Erwin, J. M. (1975). The proprietary school: Assessing its impact on

    the collegiate sector. Ann Arbor: University of Michigan Center

    for the Study of Higher Education.

Festinger, L. (1975). A theory of cognitive dissonance. Stanford:

    Stanford University Press.

Fields, R. R. (1962). The community college movement. New York:

    McGraw-Hill.

Freeman, R. B. (1974). Occupational trianing in proprietary schools

    and technical institutes. Review of Economics and Statistics,

    56(3),

    310-318.

Fulton, R. A. (1969). Proprietary schools. In Ebel, R. L. (Ed.),

    Encyclopedia of educational research. New York: Macmillan, 4th

    ed., pp. 1022-1028.

Gillie, A. C., Sr. (1973). Principles of postsecondary vocational

    education. Columbus: Charles E. Merrill.

Glass, G. V., McGaw, B., & Smith, M. L. (1981). Meta-analysis in

    social research. Beverly Hills CA: Sage Publications.

Goodman, P. W. (1980). UCLA study found flawed. Update, 2(9), 1.

Grant, W. V. & Eiden, L. J. (1982). Digest of education statistics. Washington D. C.: National Center for Education Statistics.

Grede, J. F. (1981). Changing form and focus of occupational education. In Arns, K. F. (Ed.), Occupational education today. New Directions for Community Colleges, 33, 1-10.

Hanson, G. A. & Parker, E. C. (1977). The vocational education industry. In Meyer, W. G. (Ed.), Vocational education and the nation's economy. Washington D. C.: American Vocational Association, pp. 99-116.

Harris, N. C. & Grede, J. F. (1979). Career education in colleges. San Francisco: Jossey-Bass.

Hosler, R. J. (1971). Business education. In. Deighton, L. C. (Ed.), The Encyclopedia of education. New York: Macmillan.

Hoyt, K. B. (1966-67). The vanishing American. Delta Pi Epsilon Journal, 9(2), 1-8.

Hoyt, K. B. (1968). The specialty oriented student research program: A five year report. Vocational Guidance Quarterly, 16, 169-176.

Hyde, W. D., Jr. (1976). Metropolitan vocational proprietary schools. Lexington MA: Lexington Books.

Ivarie, T. (1967). Private business schools: yes and no. Journal of Business Education, 42, 138-139.

Johnson, S. E. (1974). Proprietary education: A search of the literature. Berkeley: Center for Research and Development in Higher Education. (ERIC Document Reproduction Service No. ED 095

387).

Jones, J. H. (1973). Proprietary schools as a national resource. In
Vermilye, D. W. (Ed.), The future in the making. San Francisco:
Jossey-Bass, pp 177-181.

Juhlin, L. A. (1976). Characteristics of students enrolled in
resident proprietary schools in Illinois. Carbondale: Southern
Illinois University.

Jung, S. M. (1980). Proprietary vocational education. Information
series No. 197. Columbus: Ohio State University, National Center
for Research in Vocational Education. (ERIC Document Reproduction
Service No. ED 186 760).

Jung, S. M., Campbell, V. N., & Wolman, J. M. (1976) A comparative
study of proprietary and nonproprietary vocational training
graduates. Journal of Vocational Behavior, 8, 209-225.

Kandel, D. & Lesser, G. S. (1970). School, family, and peer influences
on educational plans of adolescents in the United States and
Denmark. Sociology of Education, 43, 270-287.

Karabel, J. (1972). Community colleges and social stratification.
Harvard Educational Review, 42(4), 521-562.

Kay, E. R. (1971 et seq.). Directory of postsecondary schools with
occupational programs. Washington D. C.: National Center for
Education Statistics.

Kay E. R. (1978). Occupational education: Enrollments and programs in
noncollegiate postsecondary schools, 1976. Washington D. C.:
National Center for Education Statistics. (ERIC Document
Reproduction Service No. ED 171 954).

Kay, E. R. (1979). Enrollment and programs in noncollegiate postsecondary schools, 1978. Washington D. C.: National Center for Education Statistics.

Kincaid, H. V. & Podesta, E. A. (1967). An exploratory socio-economic study of private vocational schools. In Quirk, C. & Sheehan, C. (Eds.), Research in vocational and technical education. Madison: University of Wisconsin Center for Studies in Vocational and Technical Education, pp.202-221. (ERIC Document Reproduction Service No. ED 021 976).

Levin, B. H. & Clowes, D. A. (1981). [Review of Vocational education and social mobility: A study of public and proprietary school dropouts and graduates]. Community/Junior College Research Quarterly, 5(3), 293-297.

Light, R. J. & Pillemer, D. B. (1984). Summing up: The science of reviewing research. Cambridge MA: Harvard University Press.

Manley, K. K. & Vogler, D. E. (1983). Vocational education: A synopsis. Journal of Studies in Technical Careers, 5(1), 55-61.

Medsker, L. L. (1960). The junior college: Progress and prospect. New York: McGraw-Hill.

Miller, J. W. (1971). Independent business schools. In Deighton, L. C. (Ed.), Encyclopedia of education. New York: Macmillan, pp. 531-537.

Miller, J. W. & Hamilton, W. J. (1964). The independent business school in American education. New York: McGraw-Hill.

Monroe, C. R. (1972). Profile of the community college. San Francisco: Jossey-Bass.

Moreland, P. A. (1977). A history of business education. Toronto:

   Pitman Publishing.

Mortorana, S. V. & Sturtz, A. J.   (1973).   The occupational student.

   New Directions for Community Colleges, 1(3), 15-33.

Nolfi, G. J., Fuller, W. C., Corazzini, A. J., Epstein, W. H.,

   Freeman, R. B., Manski, C. F., Nelson, V. I., & Wise, D. A.

   (1978). Experiences of recent high school graduates: The

   transition to work or postsecondary education. Lexington MA:

   Lexington Books.

Peterson, J. H. (1982). Community college and proprietary school

   relationships within the educational marketplace. New Directions

   for Community Colleges, 10(3), 51-57.

Population characteristics -- vocational school experience. (1976).

   Current Population Reports, Series P-20, No. 343. Suitland MD:

   Bureau of the Census (DOC), Population Division.   (ERIC Document

   Reproduction Service No. ED 176 122).

Proprietary education in Georgia. (1975). Atlanta: Georgia State

   Postsecondary Education Commission. (ERIC Document Reproduction

   Service No. ED 138 746).

Riccobono, J., Henderson, L. B., Burkheimer, G. J., Place, C., &

   Levinsohn, J. R. (1981). National longitudinal study: Base year

   (1972) through fourth follow-up (1979) data file users manual

   (Vols. 1-3). Washington D. C.: National Center for Education

   Statistics.

Sheldon, M. S. (1981). Statewide longitudinal study : Report on

   academic year (sic) 1978-1981. Los Angeles: Los Angeles Pierce

College.

Shoemaker, E. A. (1973). The challenge of proprietary schools.
Change, 5(6), 71-72.

Siegel, S. (1956). Nonparametric statistics for the behavioral
sciences. New York: McGraw-Hill.

Thornton, J. W. (1972). The community junior college. New York:
Wiley.

Tonne, H. A. & Nanassy, L. C. (1970). Principles in business
education. New York: McGraw-Hill.

Torgerson, W. S. (1968). Scaling. In Sills, D. L. (Ed.),
International Encyclopedia of the social sciences. New York:
Macmillan, pp. 25-39.

Trent, J. W. & Medsker, L. L. (1968). Beyond high school: A
psychosociological study of 10,000 high school graduates. San
Francisco: Jossey-Bass.

Trivett, D. A. (1974). Proprietary schools and postsecondary
education. Washington D. C.: American Association for Higher
Education. (ERIC Document Reproduction Service No. ED 090 889).

Venn, G. (1964). Man, education, and work. Washington D. C.:
American Council on Education.

Wagner, A. P. (1982). Postcompulsory education and training: An
inventory of programs and sources of support. Education and
Urban Society, 14, 271-300.

Waldrip, L., et al. (1966). Private vocational schools in North
Dakota. Research Report No. 3. Grand Forks: University of North
Dakota Center for Research in Vocational and Technical Education.

(ERIC Document Reproduction Service No. ED 013 307).

Williams, T. H. (1972). Educational aspirations: Longitudinal evidence on their development in Canadian youth. Sociology of Education, 45, 107-133.

Willis, P. (1977). Learning to labor. New York: Columbia University Press.

Wilms, W. W. (1973a). Proprietary versus public vocational training. Berkeley: University of California, Center for Research and Development in Higher Education.

Wilms, W. W. (1973b). A new look at proprietary schools. Change, 5(6), 6-7, 80.

Wilms, W. W. (1974). Proprietary and public vocational students. College and University Bulletin, 26(7), 3-6.

Wilms, W. W. (1975). Public and proprietary vocational training: A study of effectiveness. Lexington MA: D. C. Heath.

Wilms, W. W. (1980). Vocational education and social mobility: A study of public and proprietary school dropouts and graduates. Los Angeles: University of California, Graduate School of Education. (ERIC Document Reproduction Service No. ED 183 966).

Wolman, J. M., Campbell, V. N., Jung, S. M., & Richards, J. M. (1972). A comparative study of proprietary and non-proprietary vocational training programs. Palo Alto: American Institutes for Research in the Behavioral Sciences. (ERIC Document Reproduction Service No. ED 067 523).

Studies Reporting Student Characteristics - School and Student Information

| Author/Year | Proprietary Schools | | | Public Schools | | |
	N	Ss[1]	Selection[2]	N	Ss[1]	Selection[2]
Belitsky, 1969	S[3]	U[4]	U-U	–	–	–
Berdie & Hood, 1965	–	–	–	S[5]	S[6]	S-S
Braden & Paul, 1971	S	U	U-U	–	–	–
California Community College						
Students, 1977	–	–	–	U	S	S-S
Carter, 1976	–	–	–	S	S	S-S
Clark & Sloan, 1960	U	U	U-U	–	–	–
Cross, 1970	–	–	–	S[7]	S[8]	U-U
Doherty, 1973	S	S[7]	S-S	–	–	–
Freeman, 1974	U	U	U-U	–	–	–
Hoyt, 1966-7	S	S	U-U	–	–	–
Hoyt, 1968	U	S	U-U	U	S[7]	U-U
Juhlin, 1976	S	S	S-U	–	–	–
Jung et al., 1976	S	S	S-S	S	S	S-S
Kandel & Lesser, 1970	–	–	–	S[5]	U	U-S
Kay, 1976	S	S	U-S	S	S	U-S
Kincaid & Podesta, 1967	S	U	S-U	S	U	S-U
Mortorana & Sturtz, 1973	–	–	–	U	U	U-U
Nolfi et al., 1978	U	U	S-U	U	U	S-U
Proprietary Education						
in Georgia, 1975	S	S[7]	S-U	–	–	–

APPENDIX 1 (continued)

Studies Reporting Student Characteristics - School and Student Information

Author/Year	Proprietary Schools			Public Schools		
	N	Ss[1]	Selection[2]	N	Ss[1]	Selection[2]
Thornton, 1972	-	-	-	U	S	S-U
Wagner, 1972	U	S[7]	U-U	-	-	-
Waldrip et al., 1966	S	S	S-S	-	-	-
Williams, 1972	U	U	S-S	U	U	S-S
Wilms, 1974[9]	S	S	S-U	S	S	S-U
Wilms, 1980	S	S	S-U	S	S	S-U
Wolman, 1972	S	S	S-S	S	S	S-S

[1] number of students

[2] schools-students

[3] stated by the author(s); applies to each use of "S"

[4] unstated by the author(s); applies to each use of "U"

[5] high schools

[6] not separated from proprietary students by the author(s)

[7] estimated by the author(s)

[8] high school students

[9] same research as Wilms (1973a) and (1975); possibly overlaps Wilms
(1980)

APPENDIX 1 (continued)

Studies Reporting Student Characteristics – Data Analysis

Author/Year	Reported Considering Validity[1]	Reliability[1]	Statistics Used[2]
Belitsky, 1969	NO	NO	%
Berdie & Hood, 1965	NO	NO	%
Braden & Paul, 1971	NO	NO	%
California Community College Students, 1977	NO	NO	chi squared, p, %, "average"
Carter, 1976	NO	NO	%, "average"
Clark & Sloan, 1960	NO	NO	–
Cross, 1970	NO	NO	%
Doherty, 1973	NO	NO	%
Freeman, 1974	NO	NO	%
Hoyt, 1966–7	NO	NO	%
Hoyt, 1968	NO	NO	%
Juhlin, 1976	YES	NO	%, mean, chi squared, F, eta
Jung et al., 1976	NO	NO	"approximate" %
Kandel & Lesser, 1970	NO	NO	%, tau-beta, p
Kay, 1976	YES	YES	%, "average"
Kincaid & Podesta, 1967	NO	NO	%
Mortorana & Sturtz, 1973	NO	NO	%
Nolfi et al., 1978	NO	NO	%

Appendix 1 (continued)

Studies Reporting Student Characteristics - Data Analysis

Author/Year	Reported Considering Validity[1]	Reliability[1]	Statistics Used
Proprietary Education			
in Georgia, 1975	NO	NO	%, "average"
Thornton, 1972	NO	NO	%
Wagner, 1972	NO	NO	%, quartile
Waldrip et al., 1966	NO	NO	%, mean, range
Williams, 1972	YES	YES	r
Wilms, 1974	NO	NO	%, weighted mean, p
Wilms, 1980	NO	NO	%, weighted mean, t, p
Wolman, 1972	YES	NO	%, mean, r

[1] reported considering at least one reliability or valid issue

[2] reported using named statistic(s) with one or more of the variables reviewed in Chapter 2.

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Abstract

CHARACTERISTICS OF RECENT HIGH SCHOOL GRADUATES WHO ARE

POSTSECONDARY PROPRIETARY SCHOOL STUDENTS

by

Bernard H. Levin

This study was designed to: 1) measure selected characteristics of
postsecondary proprietary school students; 2) compare those students
to students at public community colleges, area vocational-technical
institutes, and similar tax-funded institutions; and 3) evaluate the
claim by proprietary school spokesmen that they are competing with the
public institutions. The data represent only students who were about
to graduate high school in 1972, and who reported in 1973 that they
had enrolled in either a proprietary or public postsecondary
institutution. Students at proprietary schools were more likely to be
white, female, and middle class. The predominant reason for recent
high school graduates to attend proprietaries seems to be influence by
parents and peers. Since there are statistically and conceptually
significant differences between the two types of students, the present
data do not present a compelling case for competition between the two
types of postsecondary institutions. However, because this sample is
national, it may be masking competition at the local level.