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PERCEIVED NEEDS OF ENTERING
STUDENTS AT THE UNIVERSITY OF PUERTO RICO:
AN EXPLORATORY STUDY

A Dissertation Presented

by

MYRNA I. VELEZ

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
of the requirements for the degree of

DOCTOR OF EDUCATION

February 1996

School of Education

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STUDENTS AT THE UNIVERSITY OF PUERTO RICO:
AN EXPLORATORY STUDY

A Dissertation Presented

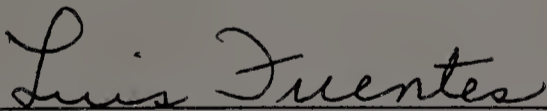
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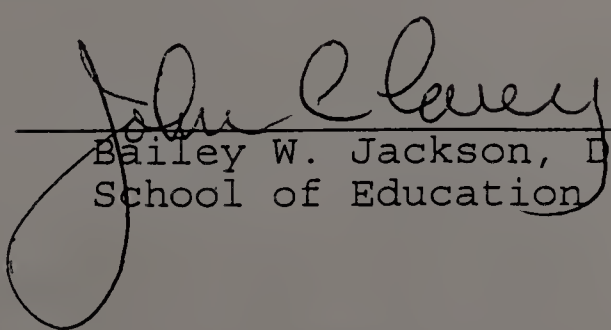
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Luis Fuentes, Member



Francisco Javier Cevallos, Member



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To My Parents,
Francisco and Isabel

Thank you for teaching me the meaning and value of
an education. Your love and support
guided me throughout the
doctoral process.

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My dedication to a career in higher education and commitment to help the University of Puerto Rico and its students have been the most important motivating factors during more than two decades of serving in the educational roles of student, teacher, counselor, and administrator. The opportunities and the privileges of working closely with faculty, staff, and students at all levels have helped me to understand better the nature and, indeed, the multiple realities that make up the social world of our time. In this world of multiple realities, the university is a learning institution which guides us in our search for truth and for meaning in our lives.

Although I had contemplated writing about my concerns relating to Puerto Rico's public system of higher education for several years, it was not until I took a leave of absence from the University of Puerto Rico in the summer of 1987 to study at the University of Massachusetts located in Amherst, that I was able to begin a serious outline for such a book. The opportunity to write it became a reality when I was commissioned, as part of my comprehensive examination, to plan a book relating to my special field of interest. The final result of that initial undertaking was a work entitled, Current Issues in the Public System of Higher Education in Puerto Rico.

After the successful completion of the comprehensive examination, I was required to register for my dissertation credits. I began to work on my dissertation topic and later on, submitted to the School of Education the proposal entitled, Perceived Needs of Entering Students at the University of Puerto Rico: An Exploratory Study that was finally approved by the Graduate School.

Many persons deserve recognition for their help in this research. I wish to express my deep appreciation to Dr. Gloria M. de Guevara, chair of my committee, for encouraging me to fulfill my dream and allowing me to initiate the process of writing my dissertation. I am also grateful for her constructive criticism and strong support during the preparation of my dissertation and for her advice during the time that she has served as my chair. My deep appreciation is also directed toward the other members of my committee, Dr. Luis Fuentes and Dr. Francisco Javier Cevallos, for their support and advice. I would also like to thank my professors at the University of Puerto Rico, Río Piedras Campus who initially taught me the importance of the search for knowledge and justice, a search that was later enriched by the lectures and wisdom of my professors at the University of Massachusetts.

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States. I am grateful to Dr. Efraín González Tejera, Chancellor of the University of Puerto Rico, Río Piedras Campus for his support by granting permission and resources to conduct this research. My biggest thanks go to the freshman students at the UPR-Río Piedras Campus who willingly participated in this study. These students will always be very special to me. I am exceedingly grateful to them for taking time to answer the questionnaire.

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I am exceptionally indebted to my family, especially my parents, Fernando and Isabel and my daughter, Isamir, to whom this dissertation is dedicated. Their moral support and faith in my ability to produce this work never wavered during the long writing and editing process. Also, I really want to express my love for my daughter, who was so patient and understanding about the time and personal attention required to bring it to completion. Finally, thanks to God for helping me fulfill my dream, to finish my doctoral studies in the higher education field.

ABSTRACT

PERCEIVED NEEDS OF ENTERING STUDENTS

AT THE UNIVERSITY OF PUERTO RICO:

AN EXPLORATORY STUDY

FEBRUARY 1996

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Research has indicated that the first year of college is more stressful for the college student than the three remaining years. A descriptive, exploratory study was conducted which assessed the general freshman population of a large public university in Puerto Rico, a Spanish-speaking country. Freshmen (N=1665) completed, in the Fall of 1993, a 73-item survey which collected data on demographics, academic and financial backgrounds, employment patterns, and academic, career, and personal needs. Students were asked to rate the intensity of the needs they were experiencing as they entered the University of Puerto Rico, Rio Piedras Campus.

Results indicated that participants, as a group, rated academic-career related items stronger than personal items. In general terms, higher need levels were associated also with specific sub-populations of freshmen: females, students coming from public schools in Puerto Rico, and

students enrolled in the Colleges of Business Administration, Natural Sciences, and Social Sciences.

The findings of this study are valuable for planning college counseling services at the University of Puerto Rico, Rio Piedras Campus and for clarifying student development theory. The identification of these needs should enable administrators, orientation planners, counselors, and policy makers of this University to design programs to better meet the academic, career, and personal needs of the freshman population as well as the individualized needs of specifically designated subgroups of incoming freshmen. The planning of such interventions must be followed by systematic evaluation of the effects of the programs that are developed.

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C H A P T E R I

INTRODUCTION

The 1990s is being projected as a decade of great change and financial instability for colleges and universities in the United States. Contrary to the 1960s and 1970s, when these institutions enjoyed great economic stability and an increasing growth, today they face what George Keller (1983) has called "the expecter of decline and bankruptcy" (p.3). This is a period characterized by rising tuition costs, decreased federal assistance to students as well as reduced state appropriations to higher education, and increased accountability from state and federal legislators.

While this is happening, new developments are taking place in American higher education. Institutions are experiencing a reduction in the number of traditional-aged students available for college and even more important, high attrition rates particularly of the freshman population (Keller, 1983; Levitz & Noel, 1989; Mayhew, 1979; Terenzini, 1986; Tinto, 1987). Bearing this in mind, colleges and universities not only have to increase their recruitment efforts, but also have to review their retention strategies if they want to survive the 1990s.

Freshman enrollment is decreasing at an alarming rate. For example, Scully (1980) has predicted that in

the 1990s and beyond, colleges and universities will face a "demographic depression" caused by a decline in the number of college candidates, that may diminish enrollment from 5 to 15 percent. Cyert (Keller, 1983) has noted also that, "By the 1990s there will be one-fifth fewer high school graduates, which means greater competition for a decreasing number of college candidates" (p. vi,). This sharp decline in prospects for college enrollment, the first in the history of American higher education which has been ascribed to the "birth dearth" of the 1960s and 1970s, will certainly impinge upon student enrollment. It is important to point out that most colleges and universities depend on student enrollment for operating funds. Attracting new students from a shrinking population increases the institution's operational costs.

This situation is aggravated by the fact that, in American higher education, students who initiate college have a high probability of leaving their institution without earning a college degree. For example, Cuseo (1991) has reported that, "In 1986, approximately 2.8 million students began college for the first time" (p.1). He further noted that, from this population, 40 out of 100 entering students will depart from their institution without ever completing a college degree. Tinto (1987) has estimated that approximately 39 percent of all college beginners will leave the institution without earning a baccalaureate degree. These projections demonstrate that

student attrition is a pressing issue for American colleges and universities today, as it was in the 1970s.

Not only is there a great predisposition among students towards dropping out during their college career but both literature and research on student retention indicates that attrition is alarmingly high during the first year of college (Eckland, 1964; Levitz & Noel, 1989; Marsh, 1966; Rootman, 1974; Terenzini, 1986). For example, Levitz and Noel (1989) have noted that at least one-third of all entering students enrolled in colleges and universities are not at the same institution one year later. Terenzini (1986) has stated also that approximately 50 percent of all students leave their institution during the first year.

Furthermore, there is evidence indicating that the first semester of classes is a traumatic, stressful period during which many freshmen are more likely to leave their college campus. Researchers such as Banning (1989), Blanc, Debuhr, and Martin (1983), and Levitz and Noel (1989) have identified the first six to eight weeks of the first semester as the period during which a great majority of freshmen will depart from college. Likewise, Levitz and Noel (1989) have indicated that, "Freshman's most critical transition period occurs during the first six weeks" (p.66). Evidently, the first weeks of college are a critical time for the successful transition of first-time college students to a new environment.

In Puerto Rico, decreases in freshman enrollment mirror American trends. High school graduates are the slowest growing group in the country. Regarding this issue, Irizarry (1993) has indicated that,

School age population, will continue to decline, both in absolute terms and as a proportion of the total population, will continue to decline. The most recent population estimates for the year 2000 based on 1990 Census data, project an absolute decrease of 18,026 of the 15 to 18 years age group; that is, a 5.5 percent reduction (p.32).

This sharp decline in the number of high school graduates available for college, also the first in Puerto Rico's educational history, will undermine undergraduate enrollment. Besides, colleges and universities in the island are losing a number of freshman students after they have been successfully enrolled in the institution. The College Board (1994), in its report, Student Transition from High School to College in Puerto Rico, has pointed out that institutions of higher education are experiencing a decline in the number of students who persist from entry to the sophomore year, and a decrease of two-fifths in the freshman population that completes the minimum course requirements for the first year of college.

These facts indicate that colleges and universities today, as in the 1970s, need to concentrate their efforts in developing strategies that will help freshman students "to stay" in college. The academic success and retention of freshmen become pressing issues for institutions of post-secondary education particularly during an era of

declining enrollments, high attrition rates, and shrinking financial resources. More than ever before, colleges and universities need to retain their students to maximize tuition revenues, institutional resources, and to avoid the increasing costs of attracting new students from a dwindling population. The survival of institutions of higher learning in the 1990s and beyond as well as the vitality of the United States and Puerto Rico are at stake if they overlook these significant issues. Both countries depend, in great measure, on the education of their freshmen "who will be the movers and shakers of the next generation" (Jewler, 1989, p. 200).

Background of the Problem

In the light of the aforementioned attrition statistics it is worth asking: Why do so many students depart from college during the first year? The literature on student development and retention evidences that the transition process is difficult and stressful for almost all entering students. For example, Tinto (1988) has pointed out that, "For virtually all students, the process of separation from the past [communities] is at least somewhat stressful and the parting [from home and high school] at least temporarily disorienting. For some, they may be so severe that they constrain persistence in college" (p. 443). Palladino and Tryon (1978) have stated also that, "Entrance into college can be viewed as a transition that causes stress" (p.313). Boyer (1987) has

asserted that, "Students find the transition from school to college haphazard and confusing" (p.2).

Evidently, the transition from high school to college is a highly challenging and complex process that requires a lot of time and energy. New students are, after all, moving from their previous communities - high schools and families - to the new communities - academic and social - of the life of the college (Tinto, 1988). This movement involves drastic changes in the norms, habits, and patterns of behavior of the students (Tinto, 1988) as well as complicated decision-making processes for most of them (Medalie, 1981).

First of all, this process involves the unlearning of past habits and behavioral patterns and the learning of new ones required for integration into the life of the college. For students entering the first year of college, it also means overcoming various developmental tasks which involve losing their friends, previous support systems (Medalie, 1981) and established identities. In their place, new identities, relationships, and social networks must be established and new academic and social structures, norms, and behaviors must be adopted. Likewise, first-time college students must achieve academic success by working toward the fulfillment of their educational goals (Medalie, 1981).

Thus, entrance into college represents a time of growth and developmental change for a vast majority of

freshmen. Of course, this transition has the potential for creating problems as well as needs that impinge upon student's successful adjustment to the academic and social systems of college life. Tinto (1988) clearly asserts that these transitional problems and needs are "as much a reflection of the problems inherent in shifts of community membership as they are of the personality of individuals or of the institution in which membership is sought" (p. 442). In other words, these problems and needs are a result of the personal attributes of the students experiencing them as well as of the movement from high school to a new environment or a product of the institution in which they occur. Let us not forget that, as freshmen move from their previous environment, they have to face the problems and difficulties of a new and more demanding one.

Suffice to say that each year, hundreds of thousands of new students enter American colleges and universities. They bring with them a number of complicated needs that are intrinsically related to making an effective transition to a new college environment. As they move in, freshmen have to deal with developmental tasks, transitional difficulties, and adjustments related to their intellectual and emotional growth (Chickering, 1969; Erickson, 1968; Perry, 1968). Entering students have to deal with the general growth tasks, and transitions including self-esteem, establishment of a sense of

identity, separation from parents, developing a set of beliefs and competencies, managing emotions, establishing intimacy and new relationships, adjustment to freedom, selection of a career and a life-style. While attempting to overcome these problems and difficulties, new students also need to be successful academically and socially.

During the last decades, academic pressures to succeed in college faced by freshman students have increased dramatically. Students have to select the appropriate courses to meet institutional requirements and plan course schedules. Many entering students experience anxieties about choosing academic majors and future careers. They are not sure of their career choice. "Uncertainty about what to study is the most frequent reason high ability students give for dropping out of college" (Levitz & Noel, 1989, p.69).

Freshmen feel also the pressure to make high grades. Many students believe that they must accomplish academic success since this will permit them to compete for employment in a job-market which is already saturated. Besides, freshman students want to study careers that are highly profitable and that will improve their job-chances. Moreover, many freshmen believe that the most important benefit of a college education is its effects on the earning power. For example, Astin, Green, and Korn (1987) found that for many new students it is very important to be very well off economically.

In addition to being successful academically, freshman students have to face the social demands that college life impose upon them. As they enter college, freshmen experience a combination of needs related to their personal lives. For example, many students are forced to revise their parental relationships so as to maintain family ties as well as to succeed in adjusting to a new setting. First year students experience fear and isolation when they separate from their families. They need to review their goals, values, establish new friendships, and patterns of behavior. Moreover, many students feel pressure from their parents to choose practical majors that they may not want but will guarantee them a well-paying job.

The successful transition of freshmen to a new college environment is affected by these academic and social demands, developmental needs, and transitional problems which are typical of the first year of college. In most cases, freshmen enter unprepared to deal with these demands and needs, each of which has direct and indirect impact upon their academic achievement and personal development (Tinto, 1988). Besides, many students do not have the knowledge and academic skills required to successfully overcome these difficulties. Nevertheless, students are expected to make their own way through this transition process, which is highly disorienting, challenging, and stressful for almost all of

them. Many freshmen are not successful in coping with the problem of adjusting to the academic and social systems of the college. Students do not understand the adjustments they have to make and depart from college. "Without assistance, they [students] often flounder and withdraw without having made a serious attempt to adjust to the life of the college" (Tinto, 1988, p. 444).

Interestingly, new students' inability to cope with these problems and needs that arise as they attempt to integrate into a new environment not only impinges upon their academic performance but also upon their probability of persisting in college. By the way, as colleges and universities address the needs of first year students they are not only investing in their intellectual and personal growth, but also in promoting their success and indeed, retention.

Student persistence in college is a function of the degree of fit between the student and the institution (Tinto, 1975; 1987). Upon entering a new college environment, the student interacts with the academic and social systems of the college, and subsequently becomes integrated into the institution (Tinto, 1975, 1987). In short, satisfying and positive experiences and interactions of the student with the academic and social systems of the life of the college will lead to a higher level of integration and indeed, to improved retention (Tinto 1975, 1987). Negative experiences and interactions

will lead to less integration in those systems of the college and eventually, to student departure from a particular institution (Tinto, 1975, 1987).

Thus, the key to freshman retention is integration (Tinto, 1975, 1987). Students' integration occurs in two forms: academically and socially. First-time college students will accomplish academic integration through the educational process, and interactions with faculty and university staff within the classroom while social integration will depend upon the experiences and activities that increase students' involvement with the college campus, and interactions with faculty members and peers, particularly outside the classroom (Pascarella & Chapman, 1983; Pascarella & Terenzini, 1980; Tinto, 1975). Furthermore, academic integration is more important than social interaction in influencing the academic achievement and persistence of first year students (Pascarella & Chapman, 1983; Tinto, 1975, 1987). "Largely, the results of the person's experience in the academic domain, the person may reevaluate his [or her] educational expectations to withdraw from the institution. This may occur despite his [or her] having been socially integrated into the institution" (Tinto, 1975, pp. 95-96).

Taking into consideration these facts, orientation services are very important to the student's integration into the campus environment (Tinto, 1975; 1987). Orientation and counseling programs can connect new

students into the academic and social domains of college life by providing them the experiences and interactions through which such integrative associations arise. But to be effective, orientation experiences, activities, and services must respond to the educational and personal needs of freshman students. In this way first year students will have a positive perception of the institutional environment. It can be argued that when student needs are met within the campus environment then, from the student's perspective, a certain degree of fit exists.

The positive impact of orientation and counseling services on freshman's academic achievement and retention is documented in the student development literature. For example, Boyer (1987) indicates that, "Orientation, when well accomplished, improves the student's day-to-day ability to cope and it has a positive impact on persistence" (p.47). Levitz and Noel (1989) point out also that orientation programs improve freshman retention. Moreover, Perigo and Upcraft (1989) assert that, "Participation in orientation activities can result in better academic achievement and higher retention" (p.94).

Many studies have explored counseling as a major contributor to freshman success and retention. For example, Bishop and Brenneman (1986) assessed the initial role of a counseling center on retention and found that, of the 122 freshmen enrolled at the University of Delaware

who sought and received counseling services regarding a retention issue, 86 percent did enroll at least another semester; only three of the counseled students voluntarily withdraw from the institution. Frank and Kirk (1975) who compared users and nonusers of university counseling services found that the graduation rate of students who received counseling was higher. Fidler (cited in Cuseo, 1991) found that entering students, who participated in a freshman orientation seminar at the University of South Carolina, exhibited higher rates than non participants. Similar retention compensatory effects of the freshman seminar have been reported for "undecided" freshmen at Bowling State University, as found by Scherer (cited in Fidler & Hunter, 1989).

Summarizing, there is enough theoretical and empirical evidence supporting the value of orientation and counseling services for promoting student's persistence and academic achievement. Thus, colleges and universities aware of the importance of freshman retention, have moved toward the development of such programs in an effort to increase student-institution fit and reduce departure from college. The counseling program can function as a retention mechanism by assessing the academic, personal, and vocational needs of first year students and providing the experiences, activities and services that respond to their urgent needs (Mayes & McConatha, 1982). This will foster a "staying environment" for freshmen.

During the last decades, institutions of higher learning throughout the United States have recognized the responsibility for understanding the needs of college freshmen and providing them the knowledge and counseling that students require for their academic and personal development. As a result, many colleges and universities conducted investigations to identify the academic, personal, and vocational needs of entering students. These research findings have helped them to design services and activities to meet the needs of the freshman population, and also to determine the necessary resources to provide those services efficiently and adequately.

Furthermore, the results of these studies have given researchers, student affairs practitioners, institutional policy makers, orientation planners, and counselors the opportunity to observe trends and delineate patterns in needs and concerns faced by first year students and to investigate sex, size of class, academic area of enrollment, place of residence, and college setting differences that impact freshman needs.

Collectively, these studies have contributed significantly to identify the academic and social needs of freshman students in the United States but has little to say about the concerns of freshmen born and raised in other countries.

Statement of the Problem

Research on student retention indicates that attrition is alarmingly high during the first year of college (Eckland, 1964; Levitz & Noel, 1989; Marsh, 1966; Rootman, 1974; Terenzini, 1986). Student support services, particularly orientation and counseling programs, successfully promote retention by assessing the developmental needs of freshman students and providing them the services that respond to their unique needs.

For many years, colleges and universities have conducted investigations to identify the developmental needs of first year students in an effort to enhance their retention and success. These studies have contributed to a better understanding of the needs of freshman students (Astin, Green & Korn, 1987; Gove & Tudor, 1973; Harris & Anttonen, 1985; Kramer & Washburn, 1983; Mayes & McConatha, 1982; Nagelberg, Pillsbury, & Balzer, 1983; Palladino & Tryon, 1978; Sagaria, Higginson, & White, 1980). Some studies have led to the formulation of assumptions about concerns and problems that affect student development. Researchers have suggested also that academic concerns have primacy over social matters for the successful integration of entering students. Moreover, results of some studies have provided information about the unique needs of specific sub-populations of freshmen.

Unfortunately, research on freshmen needs have focused on first year students enrolled in colleges and

universities in the United States, an English-speaking country, and neglected to examine the developmental needs of freshmen matriculated in post-secondary institutions in Spanish-speaking countries. Thus, freshman perceptions of their own needs in a college setting in a Spanish-speaking country have not been investigated.

The University of Puerto Rico, Rio Piedras Campus, belonging to the Public System of Higher Education of Puerto Rico, a Spanish-speaking island located in the Caribbean, is the research site for this study. The University is a coeducational, publicly-funded institution founded in 1903. During the last years, the University, like its American counterparts, has experienced a decline in the pool of applicants for admission to the first year. For example, high school applicants have decreased 17% from 4,901 in 1990 to 4,071 in 1992 (Admissions Office, June 8, 1993). This change has been ascribed to a reduction in the number of traditional-aged students available for college. Freshman enrollment has also decreased from 3,317 in 1988 to 2,079 in 1992.

With fewer high school students available for college, a decrease in freshman enrollment, and students leaving the campus, the University of Puerto Rico not only has to increase its recruitment efforts but more important, has to review its retention strategies.

Considering that student-support services, particularly orientation and counseling programs enhance

freshman retention and success, it is important that the Institution make the programmatic changes to better serve the counseling needs of first year students. It is the responsibility of the University to provide the knowledge and counseling that freshman students require for their academic and personal development.

The University of Puerto Rico must identify the developmental needs of their freshmen so that the programmatic changes will be appropriate to the unique needs of freshman students born and raised in a country with a different culture and language. Although freshmen in institutions of higher education in the United States and Puerto Rico may share some commonalities, there are serious limitations to generalizing the needs of freshmen enrolled in the University of Puerto Rico from perceptions of these needs held by freshman students matriculated in colleges and universities in the United States. There may be similarities as well as differences in students' developmental needs across countries. It is important to note that college freshmen experience significant changes in their needs as a result of environmental impact.

Purposes of the Study

The primary purpose of this exploratory, descriptive study was to examine the counseling needs of freshman students enrolled at the University of Puerto Rico, Rio Piedras Campus. Specifically, this research identified

the demographic characteristics, academic and financial backgrounds, employment patterns as well as the academic, vocational, and personal needs of freshmen affecting their academic performance as recognized by this population. The secondary purpose of the investigation was to identify significant differences in the needs of first year students on particular variables such as sex, type of high school, and college of enrollment.

Unlike previous studies in the United States that have only investigated sex, academic area of enrollment, size of class, place of residence, and college setting variables, this study was designed to determine if there were any significant differences in the urgent needs of freshmen by sex, high school of origin (public/private), and college of enrollment. An effort was made to delineate a pattern of freshman needs as a result of the analysis. Special attention has been directed to the implications of these needs for program development for entering students at the University of Puerto Rico as well as for yielding relevant information about the developmental needs of freshmen enrolled in a college setting in a Spanish-speaking country. Also, comparisons of freshman needs by sex, college of enrollment, and type of high school were made in an effort to provide additional data for planning differential programs for specific sub-populations of freshmen. A comparative analysis was undertaken to establish any significant

relationships between the dependent variables - sex, type of high school, and college of enrollment - and the independent variables of the study.

The following questions guided this research:

1. What are the demographic characteristics that entering students have in common? (e.g., age, sex, marital status, educational level of parents).
2. What urgent needs do entering students perceive themselves as having?
3. What are the urgent needs of male students?
4. What are the urgent needs of female students?
5. What are the urgent needs of entering students coming from the public school?
6. What are the urgent needs of entering students coming from the private school?
7. What are urgent needs of entering students according to their college of enrollment?
8. Are the needs of entering students enrolled at the University of Puerto Rico different from those of freshmen matriculated in colleges and universities in the United States?

Significance of the Study

A better understanding of the developmental needs of freshmen enrolled at the University of Puerto Rico, Rio Piedras Campus is significant. It will help orientation

planners, policy makers, student affairs practitioners, counselors, and administrators of the University of Puerto Rico in developing policies and making decisions regarding the type of student-support program, specially orientation and counseling services, that should be delivered to students during the first year to enhance their retention and success. Particular emphasis is placed in providing orientation planners and counselors of the University information about the pattern of needs of first year students so helpful for developing appropriate preventive and developmental orientation and counseling services and activities for the freshman population. Also, the findings of this study will yield valuable information about the developmental needs of Puerto Rican freshmen for educational researchers and theoreticians in the United States as well as in Puerto Rico. This research will pave the way for future studies on freshman needs in colleges and universities in Puerto Rico as well as in other Spanish-speaking countries.

Definition of Terms

In order to establish a common frame of reference, the important terms used in this research are defined:

Academic Success: To have satisfactorily completed a bachelor's degree with a minimum grade point average of 2.00.

Developmental
Needs

: Refers to concerns of an academic, vocational, personal or social nature experienced by freshmen in their transition from high school to the college environment.

Entering Student:

First-year college student enrolled in the University of Puerto Rico, Rio Piedras Campus for the Fall of 1993. For the purpose of this study, the following terms will be interchanged: college freshmen, first-time college student, new student, freshmen, freshman student, college beginner, first year student.

Freshman Success:

To complete the first year of college with the minimum grade point average of 1.6 required and 24 credits approved.

Urgent Need:

Any item statement that freshmen identify as a personal, academic or vocational concern in the questionnaire by marking one of the following responses: Strong or Moderate Need. For the

purpose of the study the following term will be used indistinctively: perceived need.

Puerto Rico: An island in the Caribbean which is a territory of the United States and a Spanish-speaking country.

Retention: The number of students enrolled in the University of Puerto Rico, Rio Piedras Campus for two years or more.

University of Puerto Rico: The Public System of Higher Education financed by the government of the Commonwealth of Puerto Rico. It is a multi-campus system which comprises eleven campuses divided as follows: five autonomous units (the Rio Piedras Campus, Mayaguez Campus, Medical Sciences Campus, Humacao University College, Cayey University College), six non-autonomous units (Bayamon Technological College, Arecibo Technological College, Ponce Technological College, Aguadilla Regional

College, Carolina Regional College, Utuado Regional College) and a Central Administration under the authority of a President. Enrollment at UPR system was 53,521 in 1992-93.

University of
Puerto Rico,
Rio Piedras

Campus: It is the main institutional unit of the University of Puerto Rico located in the Rio Piedras town. This unit is the oldest and largest one, with an enrollment of approximately 20,000 undergraduate and graduate students.

Organization of the Study

This dissertation consists of five chapters. Chapter I includes an introduction, background of the problem, purpose of the study, significance of the study, and definition of terms. Chapter II provides a review of relevant literature that summarize significant research on the topic under investigation including a historical background and in-depth study of published research as well as institutional and government documents. Chapter III describes the methodology and instrumentation used in the research. Chapter IV centers on the analysis of the

data, and interpretation of the findings as they relate to the research questions that guided this study, Chapter V presents a summary of the study, implications for further research, and recommendations for the development of orientation and counseling services and institutional policies that will improve freshman retention and success in public colleges and universities.

C H A P T E R II

REVIEW OF THE LITERATURE

A comprehensive literature review relevant to freshman characteristics, developmental needs, and orientation practices in colleges and universities was conducted. To identify articles, books, reports, and studies, searches were made of various documents or data bases such as Research on Higher Education, Dissertation Abstracts, College Student Personnel Abstracts, and the ERIC System. Reports from professional and scholarly associations such as the American College Personnel Association, American Council on Education, The Carnegie Foundation for the Advancement of Teaching, The College Board, and others were reviewed. The search also included the study of documents, reports, and publications pertaining to the University of Puerto Rico, particularly those located in the Central Archives of the Institution.

This chapter is divided in two sections: the first includes freshman students in the United States, early and current orientation practices and activities, and relevant research concerning the needs of freshmen in American colleges and universities. The second covers research efforts made by the University of Puerto Rico, Rio Piedras Campus to characterize freshman students.

Freshmen in the United States

Historical Perspective

The literature indicates that entering students in colleges and universities in the United States are not a recent phenomenon. Their presence in American colleges can be traced back to the sixteen century, when nine colleges were founded: Harvard, Yale, Princeton, Pennsylvania, Columbia, Brown, Dartmouth, William and Mary, and Rutgers (Dwyer, 1989; Brubacher & Rudy, 1976). The purpose of these colonial colleges was to train leaders for the church and government. In those days, freshmen were educated under the tradition of classical scholarship. They were prepared to become "gentlemen" (Brubacher & Rudy, 1976). According to Dwyer (1989), in that period the word "freshman" was used "to describe a newcomer or a novice in any field of endeavor" (pp. 25-26).

The first men to attend college entered Harvard University in 1638 (Dwyer, 1989; Brubacher & Rudy, 1976). At that time, being a freshman was a privilege reserved for a male elite. As newcomers, they were placed under the custody and direction of a master who taught them one subject at a time and later on, when they fully handled it, moved them to another. Freshmen had a prescribed curriculum which included French, Greek, Latin, elocution, mathematics, and ethics (Dwyer, 1989). Academic standards for admission were very high.

Throughout the colonial period, freshman students were considered servants, and like that they were treated. They had an inferior status and were required to do menial work for reduced tuition. Their servile position is clearly illustrated by Dwyer's (1989) assertion: "Entering freshmen might devote themselves almost exclusively to the task of gaining acceptance among the privileged few" (p.34).

In the early days, first-time college students began to experience adjustment problems, both in the academic and social domain. To help them in their transition to college life, in 1877, John Hopkins University established a system of faculty advisers and later on, in 1889, Harvard also appointed a board of freshman advisers (Rudolph, 1962). With the establishment of these systems, American colleges and universities began to recognize the academic needs of new students, and their responsibility to assist them in their adjustment to college (Gordon, 1989).

The first freshmen were very homogenous. Most students shared the same demographic characteristics and social status. Freshmen experienced similar problems of academic and personal adjustment. "Because there was a remarkable homogeneity among these first-time college students (statistically, they were very much alike) and because they were perceived to share common problems of academic and personal adjustment, it was hard to differentiate among them" (Gordon, 1989, p. 38). This homogeneity produced a lack of research on freshmen.

But in the nineteenth century the United States experienced an important expansion of educational opportunities. Institutions of higher education developed in many states and territories. Many colleges and universities began to offer education to Native American and Blacks. Dwyer (1989) named a few of these institutions: Fisk (1865), Hampton (1868), and Tuskegee (1881).

In that same period, new opportunities surfaced for women's higher education. According to Brubacher and Rudy (1976), reformers such as Mary Wollstonecraft and others demanded equality for women in the educational field. This initiated a movement to guarantee educational opportunities for women, who were considered intellectually inferior, and as such, members of a subservient caste (Brubacher & Rudy, 1976).

The first females to go to college were admitted, in 1837, to Oberlin College (Dwyer, 1989; Brubacher & Rudy, 1976). Thus, the beginnings of coeducational higher education can be traced back to that institution located in Ohio. Nevertheless, it expanded rapidly to other states principally through the establishment of land-grant colleges and public universities.

Also, at that time, the first women's colleges were founded; Wesleyan Female College (1836), Mount Holyoke College (1837), Judson College (1838), and Mary Sharp College (1852) (Brubacher & Rudy, 1976). The first institution to grant higher degrees to women was the

Wesleyan Female College of Macon, Georgia (Brubacher & Rudy, 1976).

Until the nineteenth century, most institutions of higher learning believed that they could deliver their curriculum, norms, and values to all kind of students. But surprisingly, increased enrollments in the twentieth century brought about new differences such as sexual, religious, political, and economic, among freshman students. For example, discrimination against poorer students was very intense and thus, freshmen had to dedicate themselves to gain acceptance among the rich students (Dwyer, 1989).

Today, the number of institutions of higher learning is 3,100 approximately (Keller, 1983). They continue to enroll freshmen every year. These students are not as homogenous as the ones in the medieval colleges. The tendency has been that freshman students have become more diverse and different. They are, in some ways similar to their predecessors but in many other aspects they are different (Upcraft & Gardner, 1989). This diversity will continue to grow. In this respect, Upcraft and Gardner (1989) predicted that, "Over the next decade, these freshmen will be increasingly diverse and substantially different from the freshmen who have preceded them" (p.1).

Early and Current Freshman Orientation Practices and Activities

Early recognition of the unique experience, adjustment problems, and counseling needs of freshman students in

colleges and universities in the United States can be traced back to 1888 when Boston University established the first freshman course to assist new students in their transition from home and school to the college environment. But interestingly, by the 1920s, freshman orientation efforts have become a prominent feature of college life.

In 1966, Drake conducted a comprehensive review, both in scope and detail, of the literature on freshman orientation. In the review, he described the presence and extent of various orientation activities and practices from the 1900s to the 1960s.

Drake identified four devices used during that period to assist freshmen in their transition and adaptation to the college setting: freshman course (1900), freshman week (1923), pre-college clinic (1949), and the small-group discussion (1954).

Freshman Course

The freshman course was the earliest device employed to orient new students. As already mentioned, the first course was inaugurated at Boston University in 1888. Drake further classified the orientation course in three types. First, courses organized to assist first-time college students with personal adjustment to college life, which began in 1900. The first courses of this kind were established in the University of Michigan (1900), Reed College (1911), and the University of Washington (1911). The vast majority of these courses required freshman students to register for a series

of weekly assemblies whose objective was to counsel them about the various phases of university life. Second, orientation courses offered to orient new students toward future careers such as the course installed at Oberlin College in 1916. Third, courses which attempted to introduce students to the broad social, economic, philosophical, scientific, and political issues of the period. A good example of this course was the one entitled "Evolution" created in 1919 by Dartmouth College to which later was added, in 1924, the new component "Problems of Citizenship". Also, the course "Introduction to Contemporary Civilization" inaugurated by Columbia University that same year.

Fourth, courses that intended to be broad introductions to important issues of the period as well as to orient new students in such areas as study habits, etiquette, career choice, and how to use the library. In sum, in its early beginnings orientation courses attempted either to introduce freshmen to broad issues of the time or to assist them with problems particular to their freshman status. The latter purpose has almost replaced the former during the history of higher education.

Freshman Week

The "Freshman Week" was another device used by colleges and universities to assist new students in their transition to the college environment. "Freshman Week" was the name given to a period of one to seven days preceding the regular

work of the term. This period was scheduled for lectures, registration for classes, informing, counseling, testing, and participating in social activities prior to the opening of classes. The University of Maine was the first that, in 1923, named this period "Freshman Week".

From 1920 to 1960 the Freshman Week became the most popular means for orienting students to college; its duration was three days and was set aside for attending lectures, registration for courses, dances, and group sessions to discuss freshman problems and concerns. This practice rapidly extended to other American colleges and universities.

While Freshman Week has fluctuated in extent of use from its beginnings, its basic elements continue practically unchanged until the present time. Today, the typical Freshman Week includes almost the same activities.

Pre-College Clinic

The pre-college clinic was another device used to orient freshman students to college. It was an introductory period of two to four days. It was usually held during the summer months, and the groups were small. In 1949, Michigan State University established the first summer clinic. Reports concerning the pre-college clinic were greatly favorable, indicating that this device was effective in: improving the grades and the adjustment to the college setting; providing a good public relations tool; reducing the fall testing load; lessening confusion; and helping

personalize the big institution. The pre-college clinic continues to be a device used mostly by large universities to orient their freshmen.

Small-group Discussions

In 1954, some colleges and universities such as the University of Kentucky and Hoffstra College, began to use small-group discussions as a procedure to assist new students in their adaptation to the college environment. Reports on its effectiveness were also favorable.

In general terms, the purposes of these devices reflected the concern for immediate problems and needs of first year students such as study skills, information about college life, testing, and socializing. Orientation offered to freshmen was not based on their needs, but rather on what institutions perceived to be the students' needs (Drake, 1966; Warner, 1975).

Today, orientation and counseling programs employ one or more of the following delivery modes for freshman orientation: a course that usually last one term; freshman week lasting at least five days and/or a summer program that lasts one to three days (Tintley, 1985). Also, small-group discussions and individual counseling are used for orienting freshmen.

But surprisingly, the freshman course or seminar has become the most common device employed in colleges and universities. "By now, the freshman seminar has become almost as commonplace on college and university campuses as

freshman English" (Jewler, 1989, p.198). According to Gordon (1989), of 2600 institutions surveyed by the American Council of Education, 78% reported that they taught a credit or non-credit course or seminar. In most cases, these courses have been designed to meet the needs of the freshman population. Thus, freshman seminars are currently being taught at institutions of all types and sizes because "there is conclusive evidence that the freshman seminar is a very powerful way of enhancing freshmen success" (Upcraft & Gardner, 1989, p.11).

Current orientation and counseling services at the college level help freshman students to successfully make the transition from high school to the new college environment. Orientation is commonly defined as a device for "helping students adjust to their new physical and academic expectations" (Gordon, 1989, p.183). Perigo and Upcraft (1989) describe orientation as "any effort to help freshmen make the transition from their previous environment to the collegiate environment and enhance their success" (p.82). Counseling is defined also as a tool for helping freshman students to successfully make the transition to college through personal, academic, and career development (Rayman & Garis, 1989).

Institutions of higher education today, more than ever before, are giving more attention to developing their orientation and counseling services since there is considerable evidence that these programs help retain

students. Many colleges and universities have established, as an important component of their orientation and counseling services, a freshman year experience program to orient their freshmen in this Knowledge Era. Besides, they have recognized that not only has the mix of their students changed, but also their understanding of what happens to them after they enroll in college. Moreover, many colleges and universities are very interested in learning more about its freshman characteristics, developmental needs, and transition difficulties as an strategy for enhancing student success and retention.

Freshmen Under Investigation

Before the 1930s, research on freshman students was not abundant. Not a great deal of consideration was given by theorists and researchers in the educational field to the needs, expectations, and demographic characteristics of first year students. In the early days, freshman characteristics were thought to be so homogenous that it was presumed that students shared the same goals, needs, values, aspirations, and transition difficulties. Moreover, researchers considered that the important problems and needs of freshmen were mostly related to their immediate adjustment to a new college environment (Drake, 1966).

Nevertheless, the scarce research conducted in that period attempted to examine the problems and concerns affecting freshman adjustment to college. Most educators identified the needs in general terms: curriculum

adjustment, influence of upperclassmen, budgeting time wisely, extracurricular activities, and transition problems (Dwyer, 1989). Most concerns were considered to be a by-product of the difficulties that first year students brought to college with them in their transition from high school to the university environment. Therefore, schools and families were blamed for students' adjustment problems.

Although researchers and theorists in the educational field were interested in the problems and needs affecting entering students, it was not until the 1950s that an increasing number of reports concerned with characterizing freshmen began to appear. For example, in 1955, Moser studied the fears of entering freshman and found the five highest ranking to be: ability to do college work; selection of the academic major; friendliness of faculty members; ability to make new friends; and securing a good roommate. Thus, academic needs were rated higher by students than personal-social concerns.

Nevertheless, later, Koile and Bird (1956) examined the problems of freshmen enrolled at East Texas State University and found that half of the concerns identified by the freshman population were related to interpersonal relationships. Three years later, Johnson (1959) conducted an investigation regarding the problems and concerns expressed by first-time college students. Research findings indicated that students ranked their most urgent problems as follows: emotional adjustment to a new college, academic

adjustment, living conditions, family relations, finances, and health. According to the results of these studies, the most urgent needs for freshman students of the late 1950s, were personal-social and academic, in that order.

Research on freshman characteristics and needs for orientation continued to increase during the 1960s. For example, in 1961, Taufest administered a survey of expectations for orientation to 78 freshmen enrolled at Purdue University and found that college beginners were very concerned about academic responsibilities. New students expected the orientation program first, to help them with academic responsibilities; second, to assist them with academic planning; and finally, to familiarize them with campus life. Based on the findings of Taufest's study programmatic changes were made in the orientation program to better meet the academic and intellectual needs and expectations of the freshman population. It is also important to note that the first two expectations, orientation related to academic responsibilities and academic planning, were similar to the fears identified by Moser (1955) in a previous research.

Likewise, in 1964, Chauncey (cited in Brubacher & Rudy, 1976), sponsored by the Educational Testing Service, surveyed 13,000 freshmen entering a broad cross-section of institutions of post-secondary education and indicated that half of the students were primarily interested in social life, extracurricular activities, and the establishment of

new friendships. Almost one-third of the students gave top priority to vocational goals and less than one-fifth reported the cultivation of intellect as their primary objective.

In the 1970s, several studies looked at freshman needs. Snyder, Hill, and Derksen (1972) found that freshmen enrolled at Southern Illinois University rated depression, choice of academic major, and the future as their most urgent concerns. Fullerton and PotKay (1973) assessed freshmen problems at Western Illinois University. The findings of the study indicated that students were very preoccupied with making good grades, finances, and social problems, in that order. The researchers concluded that the majority of students were mostly concerned with enhancing their academic performance and surviving financially first.

Three years later, in 1976, Astin, King, and Richardson administered a questionnaire to 186,000 freshmen from 366 institutions of post-secondary education. Major findings showed that most students were vocationally oriented; 70% of entering freshmen preferred academic majors with an occupational focus rather than a liberal arts education. In contrast, a study conducted by Bachman and Johnson (1979) with new students indicated that their primary concern was first, to establish good personal relationships and second, to achieve success and stability in their work.

The results of these studies clearly reveal that, in the 1960s and 1970s, adjusting to college life, finances,

and selection of academic major moved up in the rankings of problems partially displacing interpersonal and intrapersonal concerns.

Recently, several studies have been conducted to examine the needs and concerns that freshmen face in their transition from high school to college. For example, Scott and Williamson (1986) surveyed the initial experiences of 4,800 first-time college students entering the University of Florida in the Fall of 1985. A Freshman Phonathon was planned to assess these experiences and to personalize the university. New students were asked to identify the urgent problems encountered by them during the first six weeks of classes. Freshmen reported problems in the following areas: finances, course registration, dropping and adding courses, academic advising, and traffic and parking. Students identified as positive aspects of the campus environment, fraternities and sororities, classes, faculty, residence life, football games, and recreation and intramurals.

Astin, Green, and Korn (1987) found that freshman students were concerned with obtaining the material rewards of life. A vast majority of first-time college students expressed that it was essential to be very well-off financially. The researchers found also a decrease in the perceived importance of developing a philosophy of life.

Likewise, Schwalb and Sedlacek (1988) administered the University New Student Census (UNSC) to 546 freshmen attending the University of Maryland, College Park.

Research findings showed that new students perceived their greatest adjustment to college would be budgeting time wisely (24%) and studying efficiently (24%). Also, students expressed that they would utilize opportunities for counseling and educational skills services, with the greatest concern shown in educational and career planning (39%) and learning to study more efficiently (31%). Students' responses to the survey items showed the strong career orientation among the freshman class.

Stoughton and Wanchick (1988) conducted an investigation to assess entering students' problems and perceptions in the initial adjustment of freshman students at Slippery Rock University during the first six weeks on campus. Freshmen students (N=128) were asked to complete a self-report questionnaire. Research findings revealed a high rate of homesickness which strongly correlates with thinking of departing from college.

The needs of entering students, expressed before initial orientation and enrollment, were also investigated. Sagaria, Higginson, and White (1980) surveyed the needs of 2,566 incoming students using the Freshmen Issues Concerns Survey (FICS), an instrument developed at Pennsylvania State University. They found that both academic issues were important, but academic needs had primacy. The prevailing concern for academic matters was evidenced by the percentage of students that ranked course scheduling (83.4%), choice of major (57.8%), and sources of academic information (41.0%)

as highly important. In fact, two categories, course scheduling and choice of major felt within the level of high importance. The third category, sources of academic information was rated in the medium importance area while orientation was ranked next after the academic domain with medium importance. The fourth category in the personal domain considered also important included housing, finances, out-of-classroom activities, and social activities. According to the authors, these findings indicated that freshmen, in general, were more concerned with academic matters thus dissipating the belief that this domain was important only for the most academically-oriented students.

The studies already mentioned, were conducted using a quantitative methodology. But not only research utilizing this method has been done. For example, Staik and Dickman (1988) investigated freshman needs using a qualitative approach rather than a quantitative one. The researchers asked 439 college beginners enrolled at the University of Montevallo in Alabama, who were attending a required freshman orientation course in the Fall of 1987, to list their most severe stressors or problems. Findings indicated that the most frequently reported stressor category was academic concerns, followed by friendship and campus life, finances, and managing time wisely. The results of this study showed that freshmen enrolled in this small, public university experienced more stress related to their academic achievement than in any other aspect of their university

life. Freshmen listed within the academic category the following concerns: making good grades, managing test anxiety, dealing with expectations of faculty, getting an adequate schedule for classes, and homework.

The perceived needs of freshman students have changed over the years and will continue to change in the future. This tendency was documented by Palladino and Tryon (1978) who compared the problems endorsed by students entering the university in 1976 and 1969 within each of the 11 problem areas of the Mooney Problem Check Lists (PCL) (Mooney & Gordon, 1950). Research findings revealed an overall increase in the problems reported by first year students from 1969 to 1976. Freshmen in 1976 showed greater concern than those in 1969 in the following areas: finances, living conditions, and employment; curriculum and teaching procedures; adjustment to college work; family matters; and the future-vocational and educational. In general terms, entering students were still primarily preoccupied with problems involving the personal and social domains. The authors ascribed these findings to the fact that perhaps students were disclosing more than they did in 1969.

Mayes and McConatha (1982), who administered also the PCL to incoming students in 1980, found these students to be more concerned with adjustment to college work, finances, living conditions, and employment than were freshmen in 1969. The most frequent reported category was in the area of adjustment to college work. The next most important need

or problem was social-psychological relations followed closely by personal-psychological relations. Finances, living conditions and employment was the fourth ranked category.

It is important to note that the major problem areas reported by freshmen in the Mayes and McConatha study differed from the rank order of perceived needs and concerns of Palladino and Tryon. Students in the former were more concerned with adjustment to college work, financial difficulties, living conditions, and unemployment but they expressed less concern about their future-vocational and educational.

Using the same instrument, Koplick and DeVito (1986) compared the needs and concerns of first-time college students from classes 1976 and 1986. They found that students in the class of 1986 seemed to be more distressed than those of 1976 in the following aspects: health and physical development; finances, living conditions, employment; social and recreational activities; social-psychological relationships; personal-psychological relations; dating; sex and marriage; family matters; morals and religion; adjustment to college work; and the future-vocational and educational. More specifically, students in 1986 were very concerned about college work, future success in life, unemployment after graduation, and choosing classes that will prepare them for remunerated jobs. In fact, the most urgent concern was "wondering if I'll be successful in

life". Moreover, freshmen in 1986 did not believe they were prepared for the demands that college life imposes upon them. Undoubtedly, a comparison of the major problem areas reported by students surveyed in 1969, 1976, 1980, and 1986 reveals that adjustment to college work, financial and employment matters have moved up in the ranking of problems to the top major problem areas.

Colleges and universities should be aware of these changes and trends in freshman needs (Koplick & DeVito, 1986). Knowledge of these shifts in major problem areas will allow institutions of higher education to review counseling services to better meet the changing needs of the freshman population.

Trends and changes in freshman needs have been delineated also in the literature on student development. For example, Houston (1971) reviewed the literature of college students from 1940s to the 1960s and identified academic matters as most stressful. Other urgent problems included autonomy from parents, dating, peer relationships, heterosexual adjustment, and career planning.

In 1980, Tryon conducted a review of literature concerning student needs and problems and found that there had been a shift from interpersonal concerns to making good grades, financial difficulties, and choosing a career.

Recently, Rayman and Garis (1989) documented the current concerns of freshman students. According to the authors, in the academic area, first year students continue

to be worried with adjustment to college work and academic achievement. Most students continue to experience stress associated with selection of an academic major, developing study skills, making good grades, managing time wisely, and discussion of curriculum and testing procedures. Entering students are interested also in learning more about academic requirements. Moreover, new students are extremely concerned with being economically well-off and with choosing academic majors that will secure them a well-paying job. "Freshmen are very preoccupied that their college education will lead to tangible career outcomes, which increases pressure on them as they consider academic choices, course selections, and academic performance" (Rayman & Garis, 1989, p. 131).

In the career area, entering students continue to be concerned with establishing their career goals. They are very preoccupied with making decisions regarding their career plans. Freshmen need to identify their interests, aspirations, values, and abilities. Most students are primarily interested in educational and career information. Most students are selecting vocationally oriented majors. Moreover, first year students are worried about developing decision making skills.

Finally, in the personal area, freshmen continue to be worried with the adjustments they have to make as a result of the movement from high school to a new college environment. They are preoccupied with dating and

establishing new friendships. Students are also worried about family problems such as parental divorce, unemployment, and substance abuse.

These reviews of the literature have provided the opportunity to recognize that the increasing diversity of student needs is a trend that is not likely to change. Therefore, continual reevaluation of students' needs will allow counselors, orientation planners, and policy makers to know more about the changes in students' problems.

Studies comparing the needs of female students and male students have been conducted. In 1958, Anastasi found that females indicated more problems than males on personality inventories and interviews. Gove and Tudor (1973) indicated also that females were more likely than males to attempt suicide and to be psychologically ill.

Three years later, in 1976, Palladino and Tryon investigated sex differences in personal problems. They administered a self-report checklist and found like Anastasi that females reported more personal problems than males. In a study conducted by Nagelberg and Shemberg (1980), females showed greater mental illness than did males. Furthermore, Nagelberg, Pillsbury, and Balzer (1983) administered to freshmen the Beck Depression Inventory. The results revealed a much higher rate of depression for females than for males.

Likewise, Koplick and DeVito (1986) found that more female students in the class of 1976 complained of loneliness than did male students. In contrast, in the class of 1986, more males wanted to be very popular while more females felt inferior. Moreover, the Schwalb and Sedlacek (1988) study revealed significant differences between female students and male students. They found that females (38%) were less likely than males (50%) to answer that their primary goal was to learn career skills. Besides, students were asked about their academic weaknesses. Mathematics scores were reported weaker among females (23%) than for males (17%). Study habits were a weaker area for males (43%) than for females (30%).

Sex differences were also highlighted by Harris and Anttonen (1985) who conducted an investigation of entering freshmen at a medium-sized public university using a needs survey, which was adapted from the Student Needs at Pennsylvania State (SNPS). The sample consisted of 356 entering students, 135 males and 221 females, who attended the summer orientation program in the Fall of 1982.

Findings showed that:

- there were major differences between the needs of males and females
- females had higher needs in the personal and academic domains
- females ranked higher the needs related to adjustment to college work, academic advising, course selection,

use of the library, and student involvement with campus activities and university staff

- in the areas where males and females had a need, in all cases females had a higher need than the males
 - in low needs areas females needs were also higher
- major problems such as drugs, alcohol, etcetera, perceived as important by the staff were not viewed as a need by freshmen

Schwalb and Sedlacek (1988) found that females were less likely than males to express that their primary goal was to obtain career skills. It is apparent from the results of these studies that the needs of males and females differ in the emotional, personal, and academic areas. Colleges and universities should be aware of this difference. In general terms, female students reported more items as problematic and also showed higher need than males for assistance with personal problems.

Nevertheless, the study conducted by Mayes and McConatha (1982) revealed similarity across the male-female population. The four major categories identified by both sexes were in the domain of personal and social needs. They included adjustment to college work, psycho-social relationships, personal-psychological relations, finances, living conditions and employment. Sagaria, Higginson, and White (1980), who compared the needs of male students (n=1253) and female students (n=1310), similarly found no significant differences between males and females regarding

the nine needs categories when controlling for sex. Thus, the authors concluded that students shared similar concerns regarding the academic, orientation, and personal domains.

Although Harris and Anttonen (1985) found major differences between the needs of first year students in the personal and emotional domains, both sexes rated as needs the areas of academic skills required for academic courses, self-image, physical and mental health, financial difficulties and knowledge of institutional facilities. Likewise, Staik and Dickman (1988) reported no significant differences in the stressors of male students and female students. Both groups reported academic concerns as their major stressor. Colleges and universities should be aware of this similarity.

Research has been conducted to determine differences in needs according to the new students' place of residence. For example, Sagaria, Higginson, and White (1980) found that commuters and students living in residence halls ranked housing significantly different. Commuter students (N=222) considered this category to be very unimportant. In contrast, residence hall students (N=2334) ranked this category higher. It is important to note that commuters and residence hall students rated similarly all other categories. For commuters, the housing category simply dropped to the ninth rank, with the bottom four categories (managing money wisely, extracurricular activities, social activities and miscellaneous) each moving up one position.

Studies comparing freshmen with upperclassmen were also conducted. For example, Stern (cited in Drake, 1966) compared first year students with seniors attending a higher education institution. The author used two kinds of indexes: the college characteristics index and the activities index. The findings indicated that freshman students expected to find less pressure toward personal independence than seniors. Also, new students expected to find more pressure toward extreme forms of emotional expression than seniors. Moreover, freshmen anticipated an academic emphasis higher than that reported by seniors.

The above studies reveal that during the last decades abundant research have been conducted to identify the developmental needs of freshman students. These needs assessments have provided the opportunity for colleges and universities to make programmatic changes to meet the counseling needs of their students. These studies have contributed also to a better understanding of the needs of freshman students as well to the formulation of assumptions about concerns and problems that affect student adjustment to a new college environment. Researchers have suggested that academic concerns have primacy over social matters for the successful integration of entering students. The results of some studies have provided information about the unique needs of specific sub-populations of freshmen.

Unfortunately, research on freshmen needs have focused on first year students enrolled in colleges and universities

in the United States (English-speaking). New students' perceptions of their own needs in a college setting in other country (Spanish-speaking) have escaped investigation. Although most critics of student development theories acknowledge that freshmen in other countries are similar to American freshmen in their developmental needs, no research has been done to validate or reject this assertion.

Although these studies reveal that there are so many commonalities among freshman students and institutions of higher education, every college and university must conduct their own needs assessment. Only then, they can make all the programmatic changes appropriate to the unique needs of their students.

Freshmen in Puerto Rico

Recent reviews of the literature have revealed that few research efforts have been made in Puerto Rico over the past 20 years to examine the needs of freshman students enrolled in institutions of post-secondary education. Only a handful of studies have been conducted, all of them at the University of Puerto Rico, Rio Piedras Campus. These investigations differ from one another in several methodological aspects. Some of the samples are not representative of the freshman population; they are small in size ($N < 100$). For example, Del Toro Ruiz (1990) assessed the general needs of first-time college students entering the University of Puerto Rico, Rio Piedras Campus and the sample only consisted of 90 students. Other studies have

only provided descriptive information about freshmen (Botero, 1966; Office of Academic Planning, 1992; Ramos-Perea, 1989). For example, Gochman and Grubler (1976) examined only students' psycho-social backgrounds. Studies are characterized as being exploratory and lacking any theoretical framework. Some studies examined a few general areas of needs among freshman students and did not use a systematic needs assessment methodology.

Although some of these studies suggest need areas that concern freshmen, they lack the specificity and the comprehensiveness on which to base the planning and delivery of orientation services. The delivery of orientation services depends on knowing the specific needs of the target population. The identification of specific issues helps administrators, orientation planners, policy makers, and student-support personnel to design and evaluate orientation programs and activities based on such data.

The lack of valid studies on freshman needs justifies that this investigation be conducted in the University of Puerto Rico, located in Puerto Rico, to yield information that could be used to plan orientation services to better meet the needs of their freshman population as well as for clarifying student development theory.

The researcher firmly believes that the University of Puerto Rico, Rio Piedras Campus has a critical need for a comprehensive assessment of entering students' needs in order to plan adequate and effective orientation services

and programs, and this should be followed by evaluation of the services and activities developed.

Summary

Chapter II presented a review of literature relevant to entering students. Chapter III will describe the methodology used in this study.

C H A P T E R I I I

METHODOLOGY

The present research explored the needs of entering students at the University of Puerto Rico, a Hispanic University located in Puerto Rico. This chapter describes the methodology used in this exploratory, descriptive study. The procedures for designing the research and gathering the data as they relate to the specific questions of the study have been included. Following is a description of the research site, target population, delimitations, procedure, instrument, and data analysis that was used.

Research Site

The University of Puerto Rico, Rio Piedras Campus is a public-funded, coeducational institution of higher education entrusted by law to serve the 3.5 million people of the Commonwealth of Puerto Rico. It belongs to the Public System of Higher Education funded by the government of Puerto Rico which comprises a Central Administration, three university campuses, two university colleges, six community colleges, and other adjunct units.

The Rio Piedras Campus is the largest, most complex, and oldest unit founded in 1903, shortly after Puerto Rico became a territory of the United States. It is an autonomous campus with an enrollment of approximately

20,265 students for the academic year 1991-92 (Irizarry, 1993), with twice the number of women than men. It is located in the Rio Piedras town, and has three big cities, Bayamon, Carolina, and San Juan in its service area. But the Institution also provides post-secondary opportunities for students from other towns, and cities in the Island. It is the flagship campus of the System and the most competitive unit. The mission of the Institution places great emphasis on educational excellence. It is fully accredited by the Middle States Association of Colleges and Universities.

At the higher education level, the Rio Piedras Campus, with its high admission standards, lower tuition cost, and greater variety of academic offerings, has been the first educational option for high school graduates coming from the public and private schools in Puerto Rico. Since its foundation until 1989, it has never experienced a decline in its freshman enrollment. Nevertheless, during the last four years, there has been a decrease in the pool of applicants as well as in the number of freshman students enrolled in the Institution. This reduction may be ascribed to a decline in the school age population, that is, in the 15 to 18 years age cohort group.

Student retention has become an important concern for the Rio Piedras Campus. A follow-up study conducted by the Office of Academic Planning in 1991 showed that 16.4

percent of the new students that entered in 1984 were still enrolled seven years later; 39.2 percent had earned their baccalaureate degrees while approximately 44.3 percent had left the Institution without ever completing a college degree. Thus, student departure from college has become a problem for the Rio Piedras Campus given the significant institutional and public investment implicit for each student and the Institution's mission which clearly emphasizes educational excellence.

The researcher currently serves as Special Assistant to the Chancellor. Until recently, she was the Director of the Counseling Center for Student Development at the University of Puerto Rico, Rio Piedras Campus. In that capacity she oversaw the delivery of orientation and counseling services to the general student population, particularly to entering freshmen.

The researcher holds a Bachelor's degree in Psychology and a Master's degree in Rehabilitation Counseling from the University of Puerto Rico, Rio Piedras Campus. The academic preparation and twenty two (22) years serving in the roles of teacher, counselor, and administrator helped the researcher to select the quantitative methodology to address the particular set of questions for this study. This research design was considered to be appropriate because the purpose of the study was to collect objective data of the phenomena under investigation. Similar to Staik and Dickman (1988) and

other scholars, the researcher firmly believes that a better understanding of the specific needs of freshmen as perceived by this population is necessary for administrators, orientation planners, and policy makers to plan student-support services, particularly orientation and counseling programs, that will help students cope with the developmental needs that movement into college entails. Effective coping reduces attrition and enhances students' academic achievement and success.

Target Population

For the purpose of this study, freshmen were defined as first-time entering students at the University of Puerto Rico, Rio Piedras Campus for the academic year 1993-94. The survey questionnaire was administered to the general freshman population ($N=1665$) that participated in a three-day orientation program scheduled for the Fall of 1993 as part of the activities sponsored by the University of Puerto Rico, Rio Piedras Campus for incoming students. This study is distinctive because it surveyed the freshman population instead of a representative sample drawn from this population as previous studies did. There were 1180 female and 485 male participants in the study. Permission was granted by the Institution to conduct this research. (See Appendix D).

The Admissions Office at the University of Puerto Rico, Rio Piedras Campus assisted in the identification of the target population. The entire population was surveyed

which virtually insures that even the smallest variations in the data are statistically significant, so the concern throughout is solely with the substantive significance of the findings for campus decision making.

Delimitations of the Study

Despite the relative strength of the statistical analysis in this study, there is a limitation that should be noted. Only the general freshman population enrolled in a single institution was used as the sample, thereby limiting the ability to generalize the results to institutions other than similar public colleges and universities in Puerto Rico.

An attempt to delineate a pattern of needs of freshmen was made but caution should be exercised before attempting to apply automatically these results to first year students enrolled in colleges and universities in other Spanish-speaking countries. In other words, the fact that academic-career related needs have primacy at the institution studied, the University of Puerto Rico, Rio Piedras Campus, does not mean that the results are generalizable to institutional settings in other Spanish-speaking countries. Clearly, replication in other college settings would be desirable.

Procedures

As part of the three-day orientation program, freshman students were assembled in a classroom at the

College of General Studies. Each day there were 25 groups, each one with 30 students approximately. Freshmen were alphabetically assigned by college of enrollment to a counselor for a three-hour introduction to the policies, procedures, and services of the Institution. During these sessions, 1,665 respondents completed a questionnaire that required approximately 20 minutes for completion. Students were asked to provide demographic, academic, financial, employment, and needs data. The participants were encouraged to complete the two sections of their questionnaires, and return them to the counselor. In order to protect the participants' identity, they were asked not to include their names; only the college and program code were required.

A "Participant Consent Form" which introduced the researcher, identified the nature and purpose of the study, guaranteed confidentiality, and requested participation as a subject was completed also by the target population.

Instrumentation

A self-report questionnaire was the primary method for collecting data from freshman students. It was developed to identify the extent of entering students' counseling needs in three areas: academic, career, and personal. The survey contained two sections. The first section on students' characteristics collected data on demographics, academic and financial backgrounds, and

employment patterns of freshman students enrolled in the University of Puerto Rico, Rio Piedras Campus. It consisted of 19 questions carefully selected to yield a general profile of the entering student. Each question consisted of two or more categories. The second section of the questionnaire assessed the counseling needs of the freshman population. It consisted of 54 items identifying potential developmental needs of freshmen. Data was collected on three major categories of needs: academic, career, and personal.

Following Dillman's (1978) recommendation for organizing a survey and Volk, Rengel, and Loeffler (1985) and Weissberg, Berentsen, Coté, Cravey, and Heath's (1982) studies, the survey items were grouped into these three categories rather than dispersed throughout the instrument. Each category consisted of a list of items. Students were asked to respond to each of the need items by marking one of the following responses: "Strong Need", "Moderate Need", "Weak Need", or "No Need". In this manner, new students rated the intensity of the needs they were experiencing.

The formulation of the items for each category was based on a needs assessment conducted by Weissberg et al. (1982) which also consisted of three parts: personal needs (40 items), career development needs (9 items), and academic needs (16 items). Items were also generated from previous surveys and from the researcher's own counseling

experience. Most items were modeled from the ones developed by Weissberg et al. This decision was based on Weissberg et al.'s assertion that "Items for the survey were generated by a thorough review of the student development literature, through interviews with student affairs' professionals, and from an examination of previous needs assessment surveys" (p.116). The needs assessment tool developed by Weissberg et al. was a theory-based, objective questionnaire. According to Evans (1985), "a well designed questionnaire with a solid theoretical base can provide a comprehensive and accurate overview of student concerns" (p.107).

A theory based, self-report survey was the instrument chosen by the researcher for this study. Several reasons influenced the researcher's decision. First, the questionnaire has been the most commonly used tool for systematically identifying students' needs (Evans, 1985). Second, surveys can be administered efficiently, yield uniform, quantifiable responses, and are inexpensive. Third, theory-based surveys are more likely to result in a comprehensive description of the perceived needs of a specific population (Evans, 1985). Fourth, a greater degree of anonymity could be assured to participants.

The purpose of the study, to make an objective, factual inquiry without probing for emotions and sentiments was also taken into consideration when the tool was chosen. The size of the study and resources available

to carry out the needs assessment were considered in selecting the instrument to be used in the research. "Responses to questionnaires were [are] much easier and faster to tabulate than responses to interviews" (Evans, 1985, p.113).

The needs assessment survey included an introduction that explains the purpose of the study, warrants confidentiality to the student, and indicates him/her how to answer the questionnaire. Also a "Participant Consent Form" was included. The questionnaire and the participant consent form, originally developed in English, were translated into Spanish because the freshmen's primary language is Spanish.

Once constructed and translated, a prototype of the survey was pilot tested for calibration. For this pretest, a sample of subjects ($N=100$) from a population similar to that from which the researcher planned to draw the participants, was identified. A brief analysis of the pretest results was conducted. Improvements were made in the questionnaire as a result of field testing and then, it was administered to the target population. Careful attention was paid in constructing a format that facilitated collection and analysis of data.

Data Analysis

The survey questionnaire was answered in an IBM sheet and processed through the Computer Center at the

University of Puerto Rico, Rio Piedras Campus using the Statistical Package for Social Sciences (SPSS, Inc. 1993, Version 4.1). Descriptive and correlational statistics were used.

Descriptive analysis of the data was made. Data on questions 1 to 19 were analyzed using frequency distribution, percentage, mean, and standard deviation. 1-19 differences in responses were determined using percentages for each category. A mean ranking was calculated and a frequency distribution was derived. Also, the frequency of participants in each category as a percentage of the total was determined. A profile of the freshmen population was developed in the light of the findings of the frequency distributions and percentages of each of the questions from 1 to 19. The descriptive statistics presented in the analysis of these questions involved the description of scores on a single variable. The measures of central tendency (mean, median) and standard deviation were used to point out the general characteristics (demographic, academic and financial backgrounds, and employment patterns) of the freshman population. The mean and standard deviation scores are essential to estimating the magnitude of treatment effect.

In this study, the researcher was interested also in describing the relationship between two or more variables. Thus, correlational analysis was undertaken to establish any significant relationships between the dependent

variables - sex, type of high school, and college of enrollment - and the independent variables (e.g., age, marital, status, degree aspirations, parents' level of education, high school grade point average, scores in the College Entrance Exam, career information, sources of financial aid, work experience, number of hours working per week). Sex included male and female categories. The college of enrollment was specified in the following terms: Natural Sciences, Education, Business Administration, Social Sciences, General Studies, Humanities, Public Communication, and Architecture. In the analysis conducted by type of high school, students coming from public and private schools in Puerto Rico, from public and private schools in other country as well as those that approved the high school equivalency, were included.

Findings were obtained through cross tabulation of dependent and independent variables, frequency distributions, percentages, and chi-square tests. The correlational coefficient Pearson, Likelihood Ratio, and Mantel-Haenszel were derived as test pertinent to establish a relationship among variables. A chi-square (X^2) test was used because the research data was in the form of frequency counts. These frequency counts were placed in two or more categories. Under this condition, chi-square is the appropriate test of statistical significance. Subsequently, the value to test the

relationships among variables was $p < .05$ or less.

Significant chi-square results were presented by asterisks in particular cases.

Finally, the perceived needs of entering students were determined using frequency distributions and percentages. The mean, median and the standard deviation were used also to yield a freshman need profile. In discussing the results, if a majority (i.e., 50% or more) of the freshmen rated the need as strong or moderate, it was classified as an urgent need. If a majority (i.e., 50% or more) rated the need as weak or no need, then it was classified as a low need.

Chi-square analysis (sex X 4 levels of the need) was used to test any significant differences between students' sex and the 54 needs items. Chi-square was also used to determine any significant differences in students' needs by type of high school and college of enrollment. In sum, the differences in needs by sex, type of high school, and college of enrollment were analyzed by chi-square test in which relative frequencies of category occurrence were compared. The level of significance was established also at the $p < .05$ or less.

Summary

Chapter III described the methodology and instrumentation used in the research. Chapter IV will center on the analysis of the data, and the interpretation of the findings as they relate to the research questions.

C H A P T E R I V

FINDINGS

Introduction

This chapter centers on the analysis of the data and interpretation of the findings as they relate to the research questions that guided this exploratory, descriptive study. First, it includes a description of the demographic characteristics, academic and financial backgrounds, and employment patterns of the 1,665 freshmen enrolled at the University of Puerto Rico, Rio Piedras Campus (UPR-RP), who completed a survey questionnaire in the Fall of 1993. These data yield a general profile of the freshman population at the UPR-RP Campus. Second, a needs profile of the freshman class of 1993 is generated as a result of the analysis. Third, an analysis of the significant differences in freshman needs, if any, by sex, type of high school, and college of enrollment is included. Finally, comparisons between the dependent variables - sex, type of high school, and college of enrollment - and the 19 independent variables that describe the demographics, academic and financial backgrounds, and employment patterns provide the data needed to establish if there are any significant relationships among them.

Some comparisons are possible with the relatively few previous studies characterizing freshmen which have been conducted at the University of Puerto Rico, Rio Piedras Campus. Whenever appropriate, comparisons of the needs of freshman students enrolled in colleges and universities in the United States with those matriculated in the UPR-RP Campus during the Fall of 1993 are made. Results of the remaining questions of the questionnaire are found in Appendix E.

UPR-RP Campus: Freshman Profile

Survey data are difficult to interpret without a sense of the characteristics, academic and family backgrounds, and employment patterns of the students which they represent. Students' needs expressed in the survey data reflect, in large measure, the types of entering students who are recruited into the UPR-RP Campus. The following questionnaire results portray the important features of the freshman population enrolled during the Fall of 1993.

Demographic Characteristics

Table 1 presents data related to the sex, age, birthplace, and marital status of the freshman population. An analysis of these demographics shed light upon the prevailing characteristics of freshman students which, in large measure, are likely to be among the dominant features of the general student population.

Table 1

Frequency Distribution and Percentage of Freshman Students by Sex, Age, Birthplace, and Marital Status (Questions 1, 2, 3, 4)

Item	F	P	M (SD)
Sex			
Male	481	29.0	1.71 (.454)
Female	1178	71.0	
Age			
16 years old or less	68	4.1	1.98 (.311)
17-18 years old	1559	93.9	
19-20 years old	23	1.4	
21-22 years old	4	.2	
23 years old or more	6	.4	
Birthplace			
Puerto Rico	1,519	91.7	1.11 (.419)
United States	77	4.7	
Other Country	59	3.6	
Marital Status			
Married	16	1.0	1.99 (.130)
Single	1,635	98.4	
Separated	8	.5	
Widow	1	.1	

Note: F = Frequency; P = Percent; M (SD) = Mean (Standard Deviation).

Sex. Seventy-one percent of the entire population ($N=1665$) were females ($n=1180$) and 29.0% ($n=485$) were males. Proportionally, there were more female students than male students in the Rio Piedras Campus; that is, almost a ratio of 2.4:1. In other words, 2.4 females for every male, 71.0% of the total. This means that the number of female students that entered the university was higher than the number of males. It is expected then, that the number of females that continue graduate studies will be higher than that of males.

This finding clearly demonstrates also that female participation in higher education continues to increase. For example, during the Spring of 1988 there were in the Rio Piedras Campus two females for every male (Dean of Students' Office, 1989). In 1990, most students (71.5%) admitted to the University were also females (Office of Academic Planning, 1992).

As a matter of fact, in the 1960s, sex did not appear to be an important factor in higher education enrollment. The number of female students and male students were almost the same (Nieves-Falcón, 1965). But surprisingly, in the 1970s, women's enrollment in post-secondary institutions began to increase; more females than males entered colleges and universities in Puerto Rico (Gochman & Gruber, 1976). Perhaps one of the reasons for such increase was that proportionally, there were more females than males in the Puerto Rican population. It may be

assume that, as a result of this demographic change, women were able to increase their participation in higher education and indeed, to expand their educational opportunities.

This trend has remained constant over time. For example, in 1989, the pool of applicants of the University of Puerto Rico, Rio Piedras Campus was studied to determine the sex distribution of the entering freshmen (Dean of Students' Office, 1989). The findings indicated that, in general terms, sex distribution of the pool of applicants was similar to that of the Puerto Rican population. Today, the proportion of females continues to be higher than that of males.

It is important to note that statistics on the sex distribution of the pool of applicants to the Public System of Higher Education clearly demonstrate that a high percentage of female applicants is admitted (Dean of Students' Office, 1989). The increase in female enrollment at the Rio Piedras Campus is due, not to its admission policy, but rather to the demographic characteristics of the Puerto Rican population. This, in turn, has helped Puerto Rican females to overcome the ancient barriers due to sex which have limited the opportunities for women's higher education in other countries.

Age. Most freshmen (93.9%) were in the range of 17 to 18 years old; 1.4% were in the range of 19 to 20 years

old; 2.0% were in the range of 21 to 22 years old; 4.1% were 16 years old or less while .4% were 23 years old or more. Thus, students attending college for the first time were typically young. These percentages are similar to those obtained in previous studies. In 1984, the freshman population was also young; three out of every four students were 18 years old (Ramos-Perea, 1989). Likewise, 93.4% of freshman students enrolled at the UPR-RP Campus in 1990-91 were 17 to 18 years old (Office of Academic Planning, 1992).

Birthplace. A vast majority (91.8%) indicated that they were born in Puerto Rico; 4.7% were born in the United States; and 3.6% were born in another country. It is worth to note that previous findings demonstrate that the number of students born in Puerto Rico that were admitted to the UPR-RP Campus have increased consistently through the last decade. For example, in 1984-85, of a total of 1,814 first year students enrolled at the Rio Piedras Campus, about 85.5% reported that they were born in Puerto Rico (Ramos-Perea, 1989).

Data gathered about the students admitted to the Institution for the Fall of 1990 showed also that 90.8% of the respondents, had been born in Puerto Rico (Office of Academic Planning, 1992). This means an increase of 6.3% in the number of freshmen that were born in Puerto Rico admitted to the Rio Piedras Campus in 1993 from those in 1984.

Marital Status. Most freshmen (98.4%) were single; 1.0% were married; .5% were separated; and .1% were widows. The prevalence of female students is evidenced also when this variable was considered. Females prevailed over males in the following marital status; single (70.0%/28.5%); married, (.6%/.4%); separated, (.3%/.1%); and widowed, (.1%/-).

Thus far, student demographics are similar to those of students admitted in 1984 and 1990. In 1984, 70.9% of the entering students were females; 98.6% were single; 96.0% had 18 years or less; and 85.5% were born in Puerto Rico (Ramos-Perea, 1989). Likewise, in 1990, 71.5% were females; 97.1% were single; 92.8% were 17 to 18 years old, and 90.9% had been born in Puerto Rico (Office of Academic Planning, 1992).

In sum, several studies demonstrate that the demographic characteristics of entering freshmen at the University of Puerto Rico, Rio Piedras Campus have been fairly stable over time (Ramos-Perea, 1989; Office of Academic Planning, 1992; Dean of Students' Office, 1989). Since the 1970s, the ratio of females to males have been approximately 2:1. Between 90.0% to 94.0% of the entering students have been in the range of 17 to 18 years old; almost 92.0% were born in Puerto Rico; and 98.0% have been single.

Academic Background

The analysis includes the following variables: type of high school, grade point average (GPA), scores in the College Entrance Exam, career information in high school, degree aspirations, parents' level of education, college of enrollment, and academic program. These data provide freshman's educational background prior to college entrance.

Type of High School. More than half (52.5%) attended a private school in Puerto Rico; 46.3% a public school in Puerto Rico; .4% a private school in other country; .4% attended a public school in other country while .4% passed the high school equivalency test offered by the Department of Education of the Commonwealth of Puerto Rico (see Figure 1). The percentage of students that attended a private school in Puerto Rico was higher than those that attended a public school in Puerto Rico; that is, a difference of 6.2%.

It is important to note that during the last 10 years, the number of freshman students coming from the public schools in Puerto Rico have decreased drastically; that is, almost 19.0% from 1984 to 1993. This trend is supported by previous research data. For example, in 1984, two out of three students (65.1%) admitted to the UPR-RP Campus came from a public school in Puerto Rico (Ramos-Perea, 1989). Additional data indicate that 51.9% of the students that entered the University in 1990

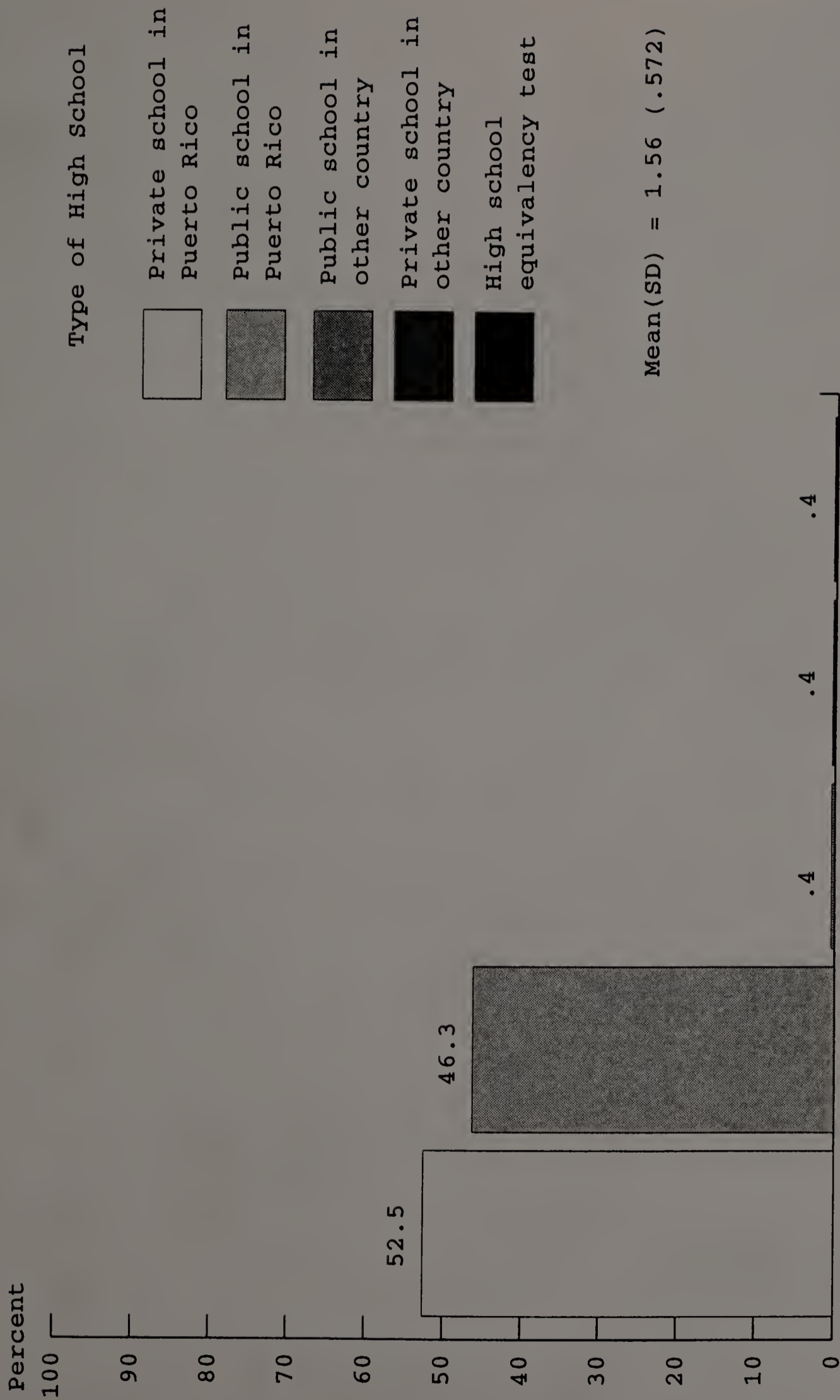


Figure 1. Percentage of Freshman Students by Type of High School (Question #5).

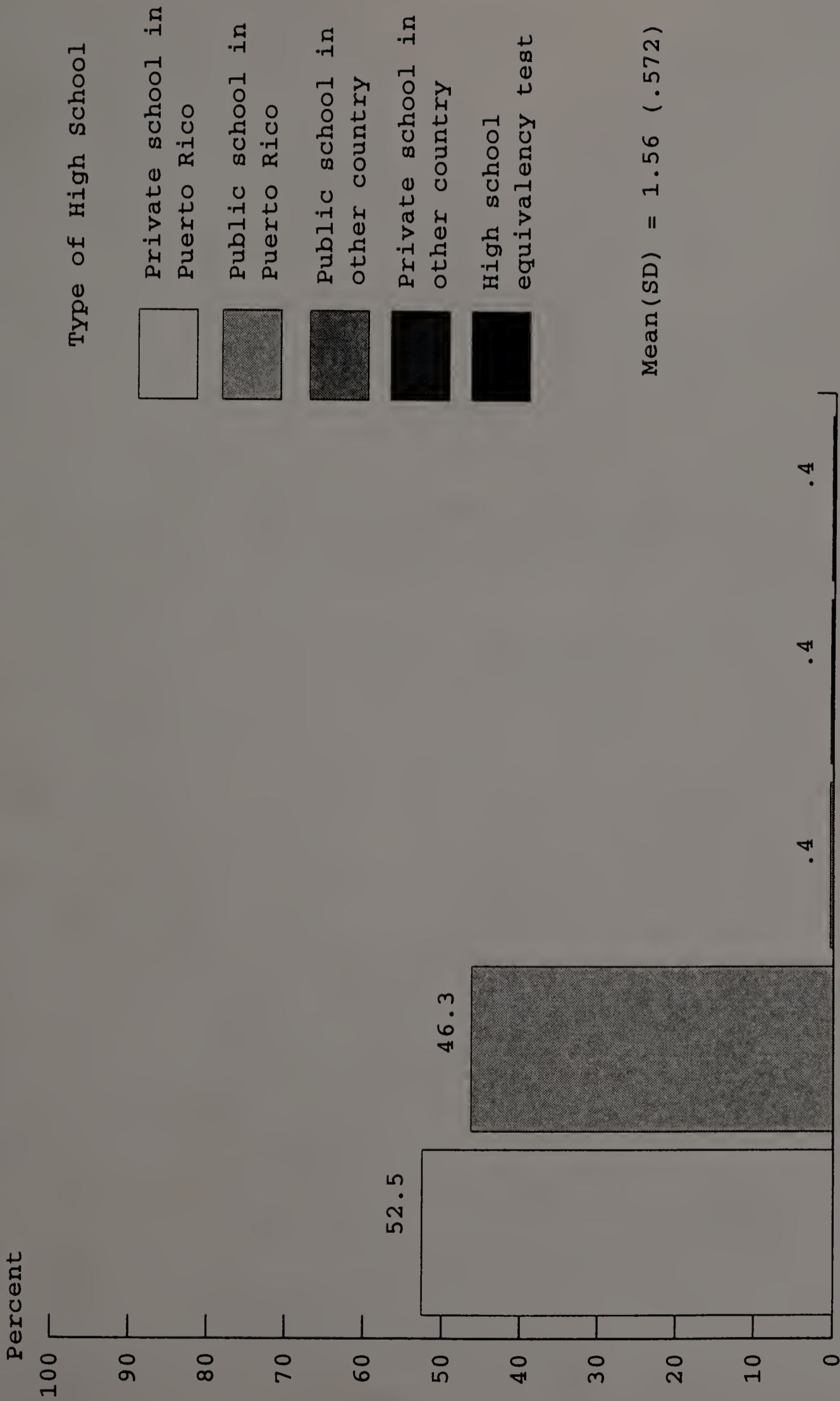


Figure 1. Percentage of Freshman Students by Type of High School (Question #5).

attended public schools while 49.1% graduated from private schools (Office of Academic Planning, 1992).

High School Grade Point Average. Sixty-three percent of the entering students claimed that they had a grade point average (GPA) within the range of 3.50 to 4.00; 25.5% that they had a GPA of 3.00 to 3.49; 9.4% that they had a GPA of 2.50 to 2.99; .2% that they had a GPA of 2.00- 2.49; 1.9% that had a GPA of 1.99 or less (see Figure 2).

For comparative purpose, students who entered during the Fall 1993 reported higher grade point averages in high school than their predecessors. In 1984, only 46.6% of the students admitted to the campus finished their high school with a grade point average of 3.50 to 4.00 (Dean of Students' Office, 1989). In contrast, from those students who entered in 1993, 63.0% completed their high school with the same grade point average. These findings suggest that a majority of the entering freshmen in 1993 were high achievers.

The grade point average (GPA) indicates, in many instances, the level of academic performance of high school graduates. Summerskill (1962) found that high school GPA were among the best predictors of persistence in college. Astin (1972, 1975) indicated also that the GPA constitutes the best predictor for the completion of a college degree because it is more related to the student's ability to achieve within an educational setting.

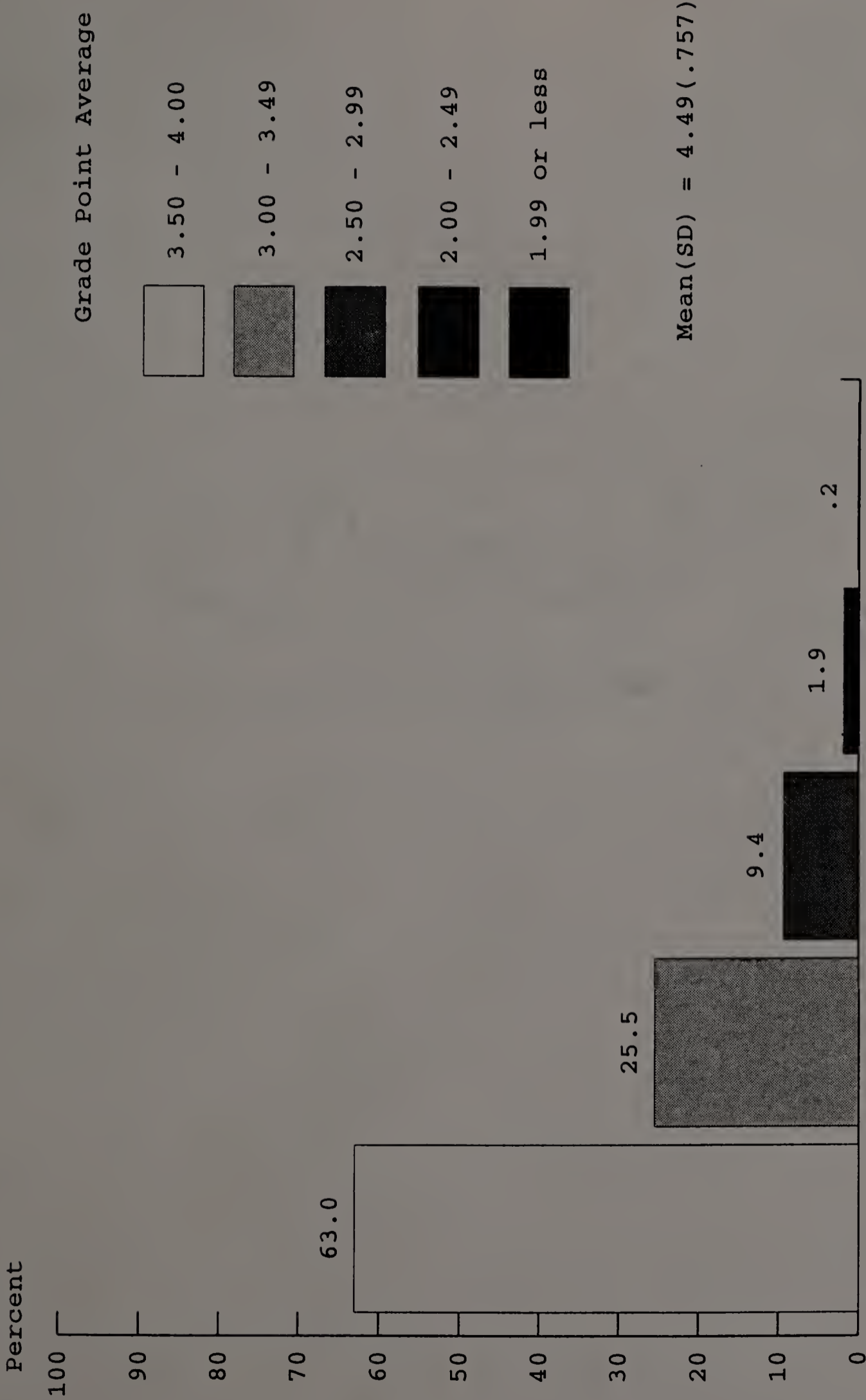


Figure 2. Percentage of Freshman Students by High School Grade Point Average (Question #6).

Pascarella and Terenzini (1991) concurred and added that high school grade performance is probably the best indicator of successful adjustment to the intellectual demands of the college.

Thus, high school GPA and persistence are positively related with the students having higher grades in high school are more likely to remain in college than the student with low grades (Astin, 1975). Taking into consideration these facts, it can be predicted that most freshmen admitted to the UPR-RP Campus in the Fall of 1993 have a high probability of persisting at the institution and indeed, completing a college degree.

Career Information in High School. Almost half of the students (44.8%) indicated that they had received career information in high school; 55.2% indicated they did not receive any information about career planning in high school (see Figure 3).

Degree Aspirations. In reporting their educational plans, almost 33.6% of the students entered the university to obtain a doctorate's degree; 29.4% a master's degree; 32.2% a bachelor's degree; and 4.7% entered to obtain a post-doctorate's degree (see Figure 4). These percentages indicate that the level of aspirations of most students was very high. Comparing these findings with those of previous studies, it can be noted that over the years, there has been a slightly increase in students' degree of aspirations. For example, 31.1% of the freshmen admitted

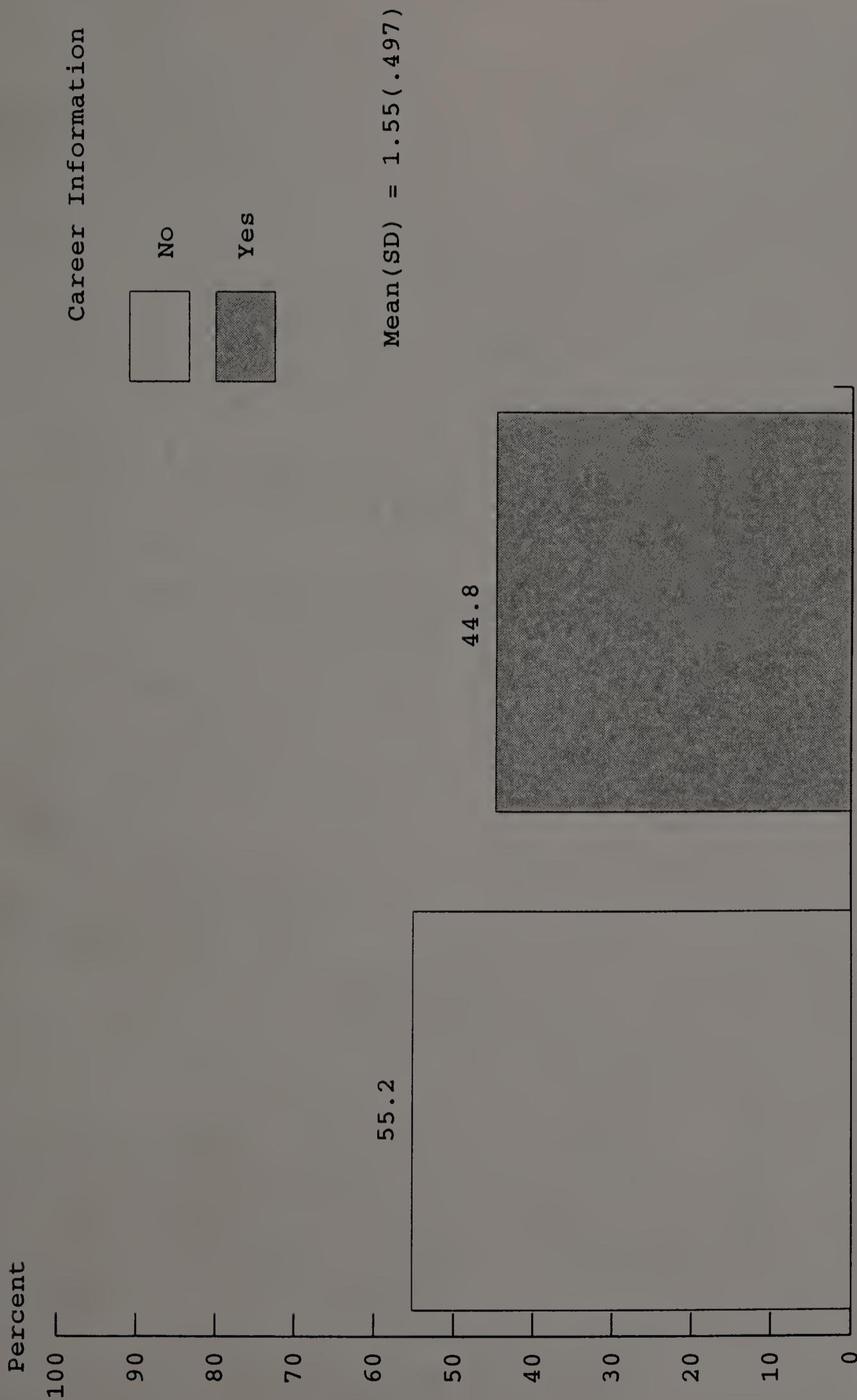


Figure 3. Data from Question #8. Did you receive any information about career planning in high school?

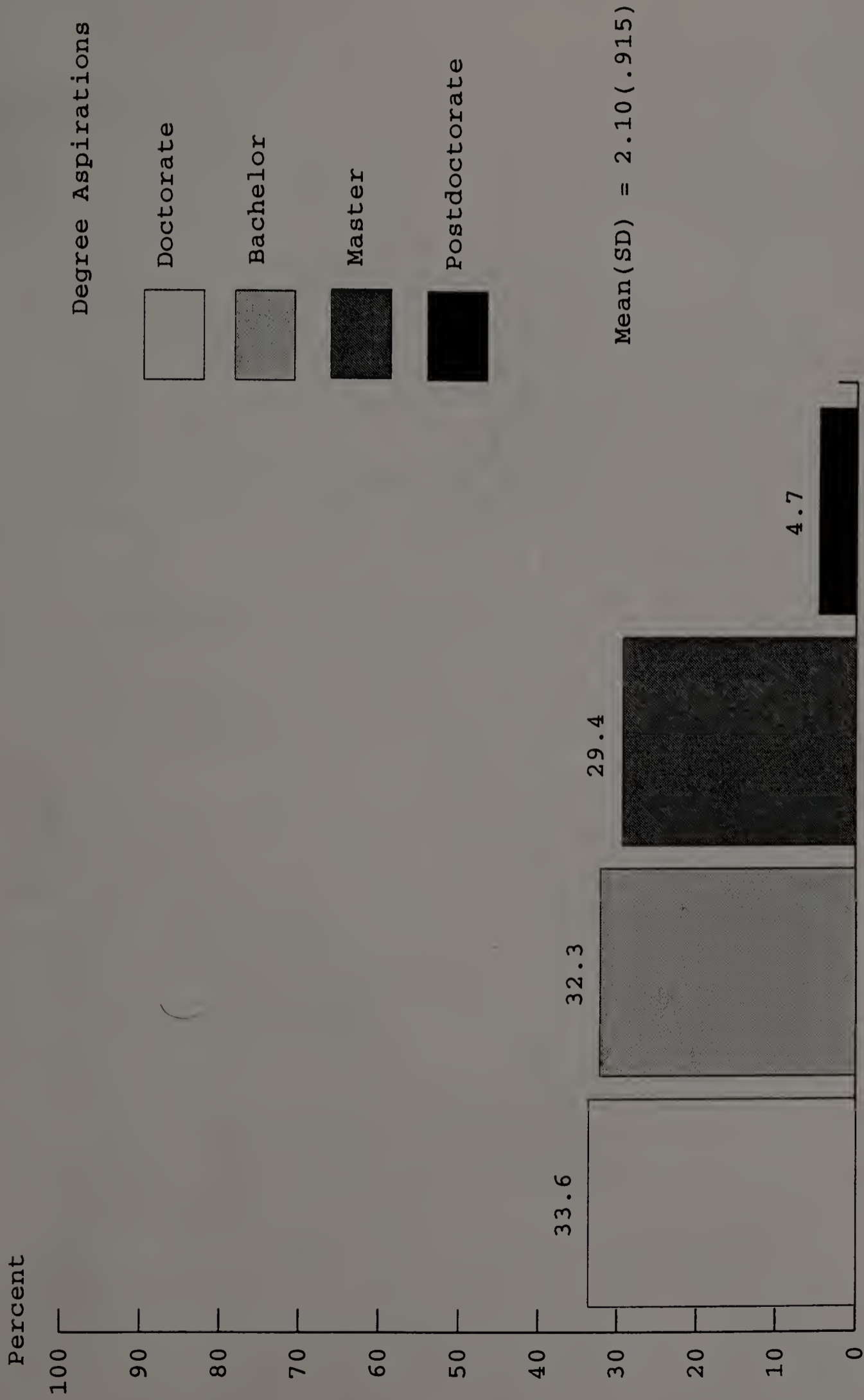


Figure 4. Percentage of Freshman Students by Degree Aspirations (Question #7).

in the Fall of 1990 felt that their highest academic degree would be a doctorate; 25.6% that it would be a master; 24.2% that it would be a bachelor; 10.6% that it would be law studies; 6.0% that it would be a professional degree; and .8% that it would be postdoctoral studies or a professional certificate (Office of Academic Planning, 1992). Additional data indicate that, in 1984, 22.0% wanted to obtain a doctorate; 21.4% a master; and 5.4% a professional degree in law (Ramos-Perea, 1989).

The high percentage of students who entered the university to obtain a doctorate or a master (33.6%-29.4%) raises important questions; are they academically and personally prepared to achieve their educational expectations and goals?; are academic offerings adequate to the degree of aspirations of these entering as freshmen?; what are the job-market realities of Puerto Rico?.

Several studies indicate that there is a positive correlation between the parents' level of education and the degree of aspirations of students. It can be inferred then, that the higher level of education of parents is likely to cause or result in a higher degree of aspirations for the children. The parents' formal education may determine how much education a son or daughter may seek. Parents who are college graduates may encourage their children to stay in school longer than those parents with less formal education. Thus, degree

aspirations of freshmen may depend a great deal upon the influence of the family.

The degree of aspirations of freshmen taking into consideration the type of high school in Puerto Rico was also studied. Significant differences were found at $p < .01$. The percentage of students coming from public schools in Puerto Rico (17.1%) that wanted to obtain a bachelor's degree was higher than those coming from private schools in Puerto Rico (14.6%). The relationship reversed when it pertains to the master's degree (16.3% private/12.9% public); doctorate's degree (18.6% private/14.7% public); and post-doctorate's degree (3.0% private/1.6% public).

Parents' Level of Education. Interestingly, in a population in which attendance to college might be expected to be quite novel, 42.8% of the students indicated that they have fathers who completed a college degree; 21.8% have fathers who completed some college years; 23.5% have fathers who completed a high school preparation; 4.8% have fathers who completed some high school years while 7.0% have fathers whose formal education was eighth-grade or less (see Figure 5).

In regard to the formal education of their mothers, 41.1% of the students indicated that they have mothers who completed a college degree; 25.5% have mothers who completed some college years; 22.6% have mothers who completed high school preparation; 6.1% have mothers who

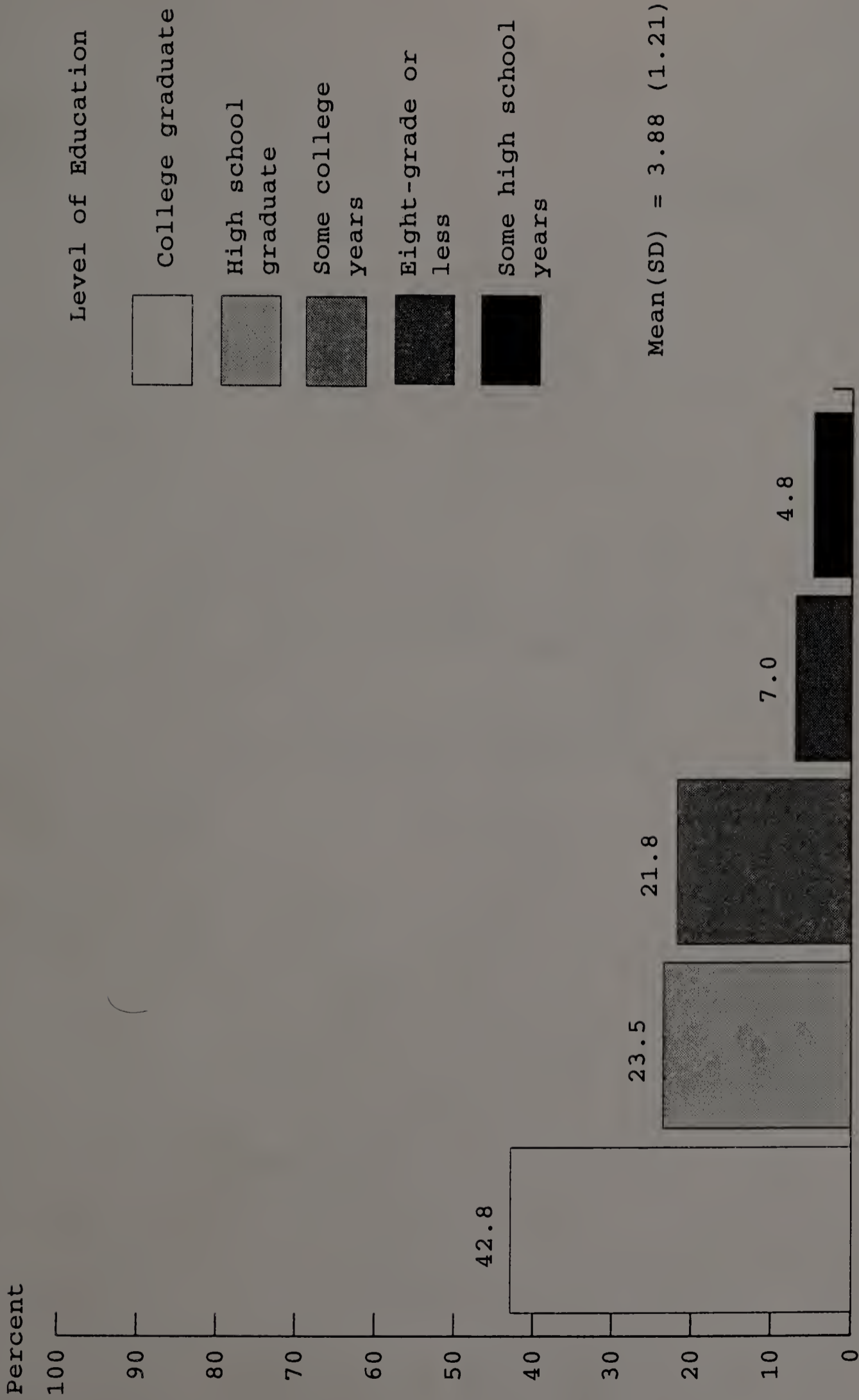


Figure 5. Percentage of Freshman Students by Father's Level of Education (Question #16).

completed some high school years; 4.6% have mothers whose level of education was eighth-grade or less (see Figure 6). It is important to note that the level of education obtained by fathers and mothers was very similar.

In comparing those students enrolled in the Fall of 1993 with those that entered the university in 1984 and 1990, it can be noted that parents' level of education has increased drastically. In 1984, only 36.1% of the fathers were college graduates while 32.0% of the mothers had a college degree (Ramos-Perea, 1989). Moreover, in 1990 only 45.0% of the parents had at least a college degree (Office of Academic Planning, 1992).

The literature on student development suggests that the level of formal education is a factor determinant of both the degree of aspirations as well as of the educational goals achieved by the individual in an effort to improve his or her social status. Therefore, in Puerto Rico the level of higher education has been traditionally considered a mechanism for social mobility as well as occupational mobility (Tumin, 1961; Ramos-Perea, 1989; Osuna, 1949). With the expansion of higher educational opportunities, the number of college students has tended to increase from one generation to the other. It is expected then, that young people obtain a higher level of formal education than that obtained by their parents.

When studying the relationship between father's level of education and student's sex, it was found that there

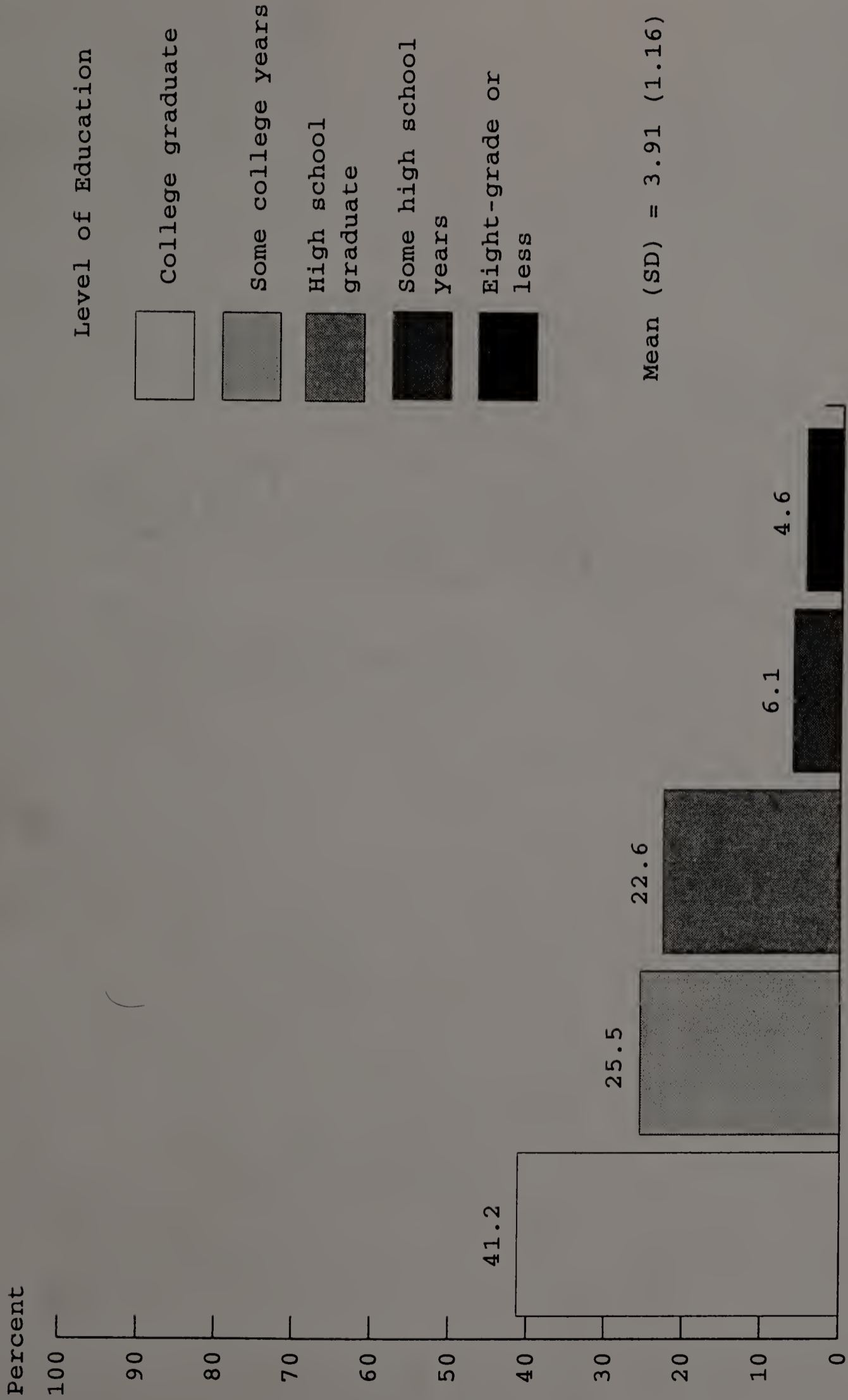


Figure 6. Percentage of Freshman Students by Mother's Level of Education (Question #17).

were significant differences among such variables at $p < .001$. The percentage of male students who had fathers (50.1%) with a college degree (see Figure 7) was higher than that of female students (39.0%) (see Figure 8).

When determining the relationship between the mother's level of education and the student's sex, it was found also that there were significant differences among such variables at $p < .001$. The percentage of male students (44.7%) who have mothers with a college degree (see Figure 9) was higher than that of female students (39.8%) (see Figure 10).

Scores in the College Entrance Exam. Students were asked to indicate their scores in the Verbal Reasoning Test. 5.5% reported that their scores were in the bracket of 700 to 800; 53.0% were in the score bracket between 600 to 699; 35.5% in the score bracket between 500 to 599; 4.8% were in the score bracket between 400 to 499 followed by 1.1% whose scores were 399 or less. 58.5% of the total, indicated scores between 600 to 800.

In the Mathematical Aptitude Test, 18.3% indicated scores between 700 to 800; 44.1% indicated scores between 600 to 699; 30.5% indicated scores between 500 to 599; 6.3% indicated scores between 400 to 499; and .7% indicated scores of 399 or less. 62.4% of the total, reported scores between 600 to 800.

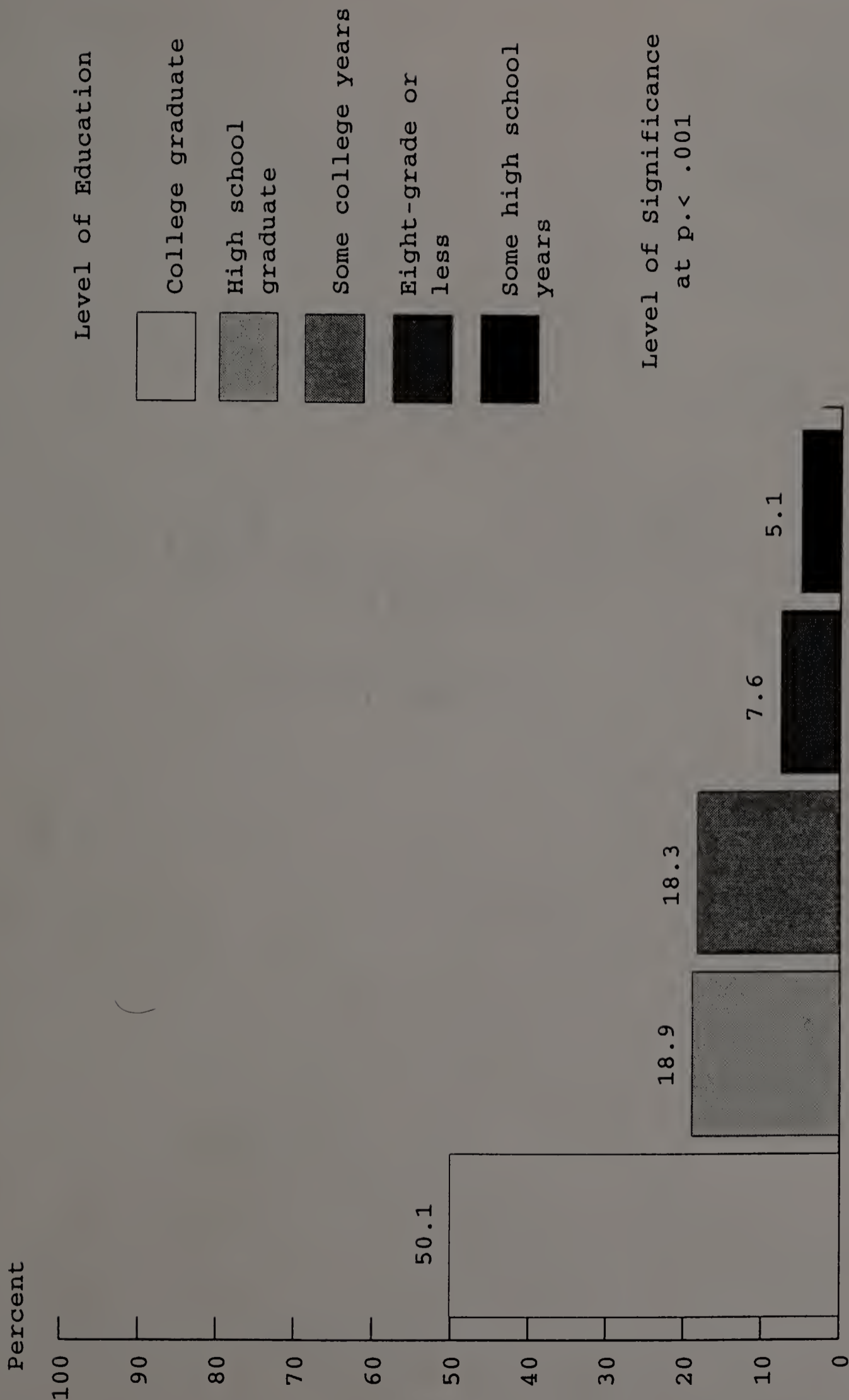


Figure 7. Percentage of Male Students by Father's Level of Education (Questions #1, 16).

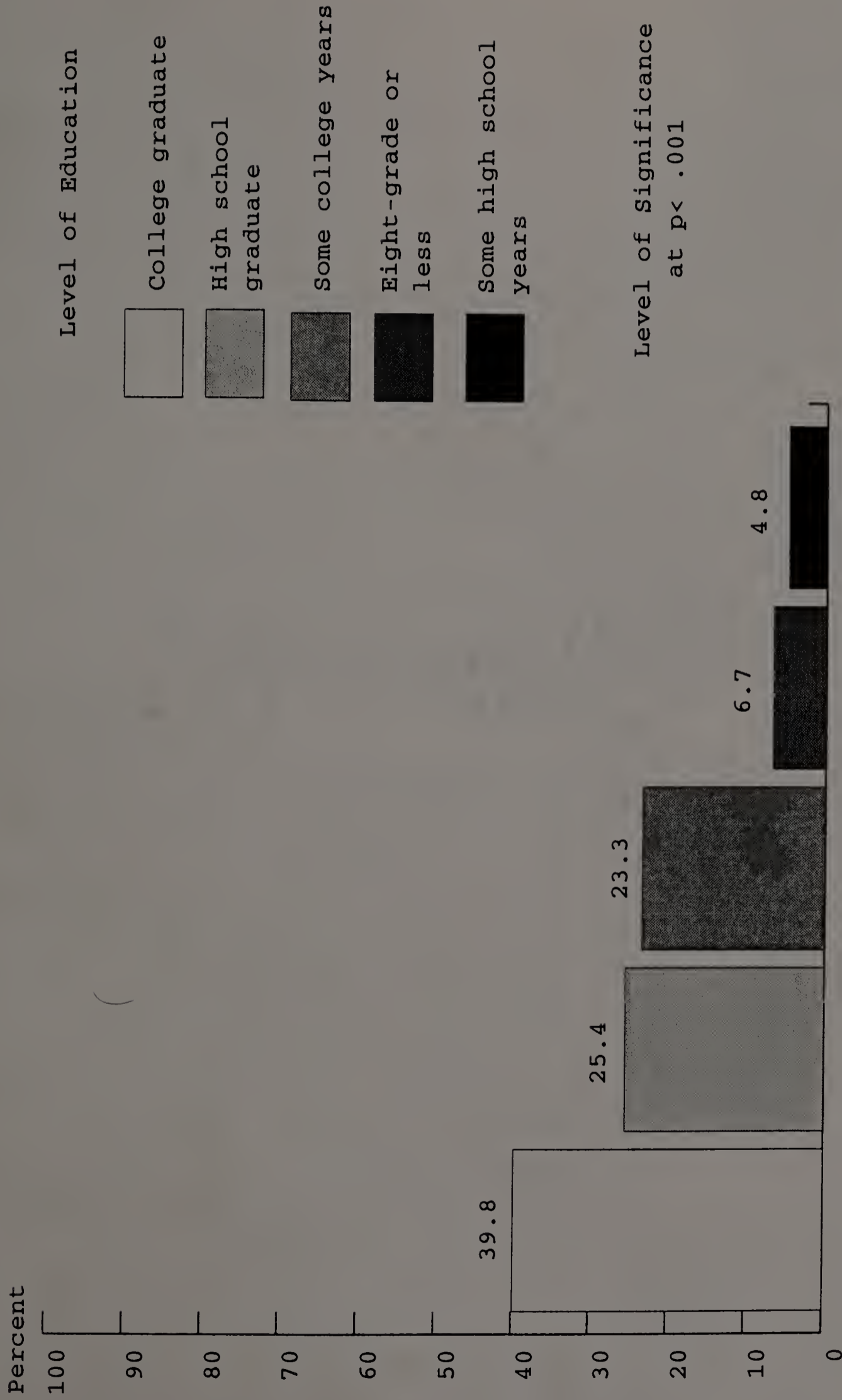


Figure 8. Percentage of Female Students by Father's Level of Education (Questions #1,16).

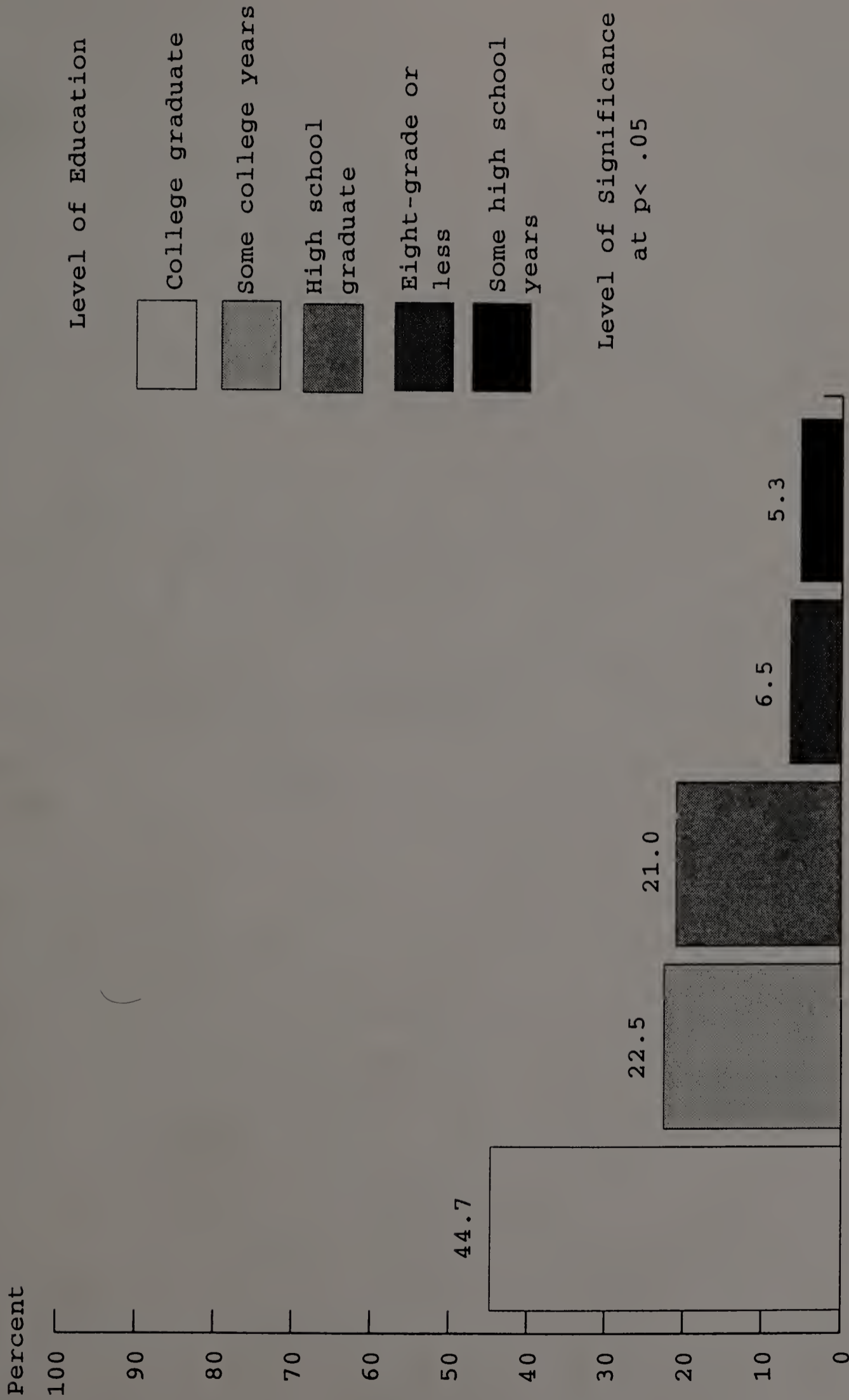


Figure 9. Percentage of Male Students by Mother's Level of Education (Questions # 1,17).

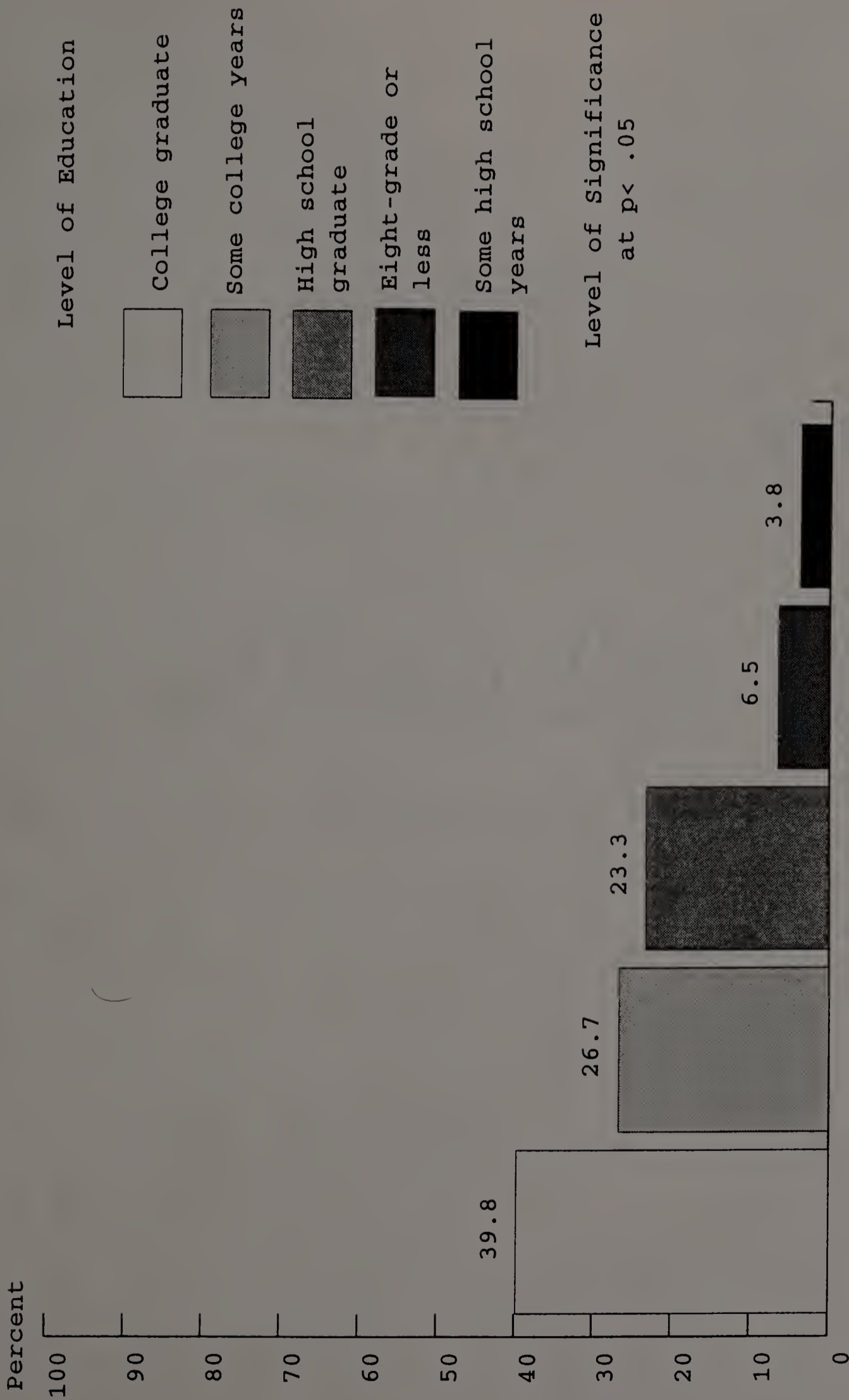


Figure 10. Percentage of Female Students by Mother's Level of Education (Questions #1,17).

In the English Achievement Test, 9.0% of the students reported that their scores were between 700 to 800; 31.1% with scores between 600 to 699; 35.2% with scores between 500 to 599; 21.1% with scores between 400 to 499 followed by 3.7% that reported scores of 399 or less. 40.0% of the total, indicated scores between 600 to 800.

In the Spanish Achievement Test, 6.7% of the students indicated scores between 700 to 800; 49.5% between 600 to 699; 37.1% between 500 to 599; 5.9% between 400 to 499 while .8% indicated scores of 399 or less. 56.2% of the total, reported scores between 600 to 800.

Finally, in the Mathematical Achievement Test, 13.9% of the students reported scores in the range of 700 to 800; 44.9% in the bracket between 600 to 699; 33.8% in the bracket between 500 to 599; 6.9% in the bracket between 400 to 499; and .5% reported scores of 399 or less. 58.8% of the total, indicated scores between 600 to 800.

It is important to note that most students were grouped in the score bracket between 600 to 699. Besides, in the score bracket between 700 to 800, the highest percentage of the students (18.3%) was reported in the Mathematical Aptitude Test. While the lowest percentage of students (5.5%) was reported in the Verbal Reasoning Test. Figure 11 presents freshman scores in the College Entrance Exam.

College of Enrollment. The majority of students were enrolled in the Colleges of Business Administration

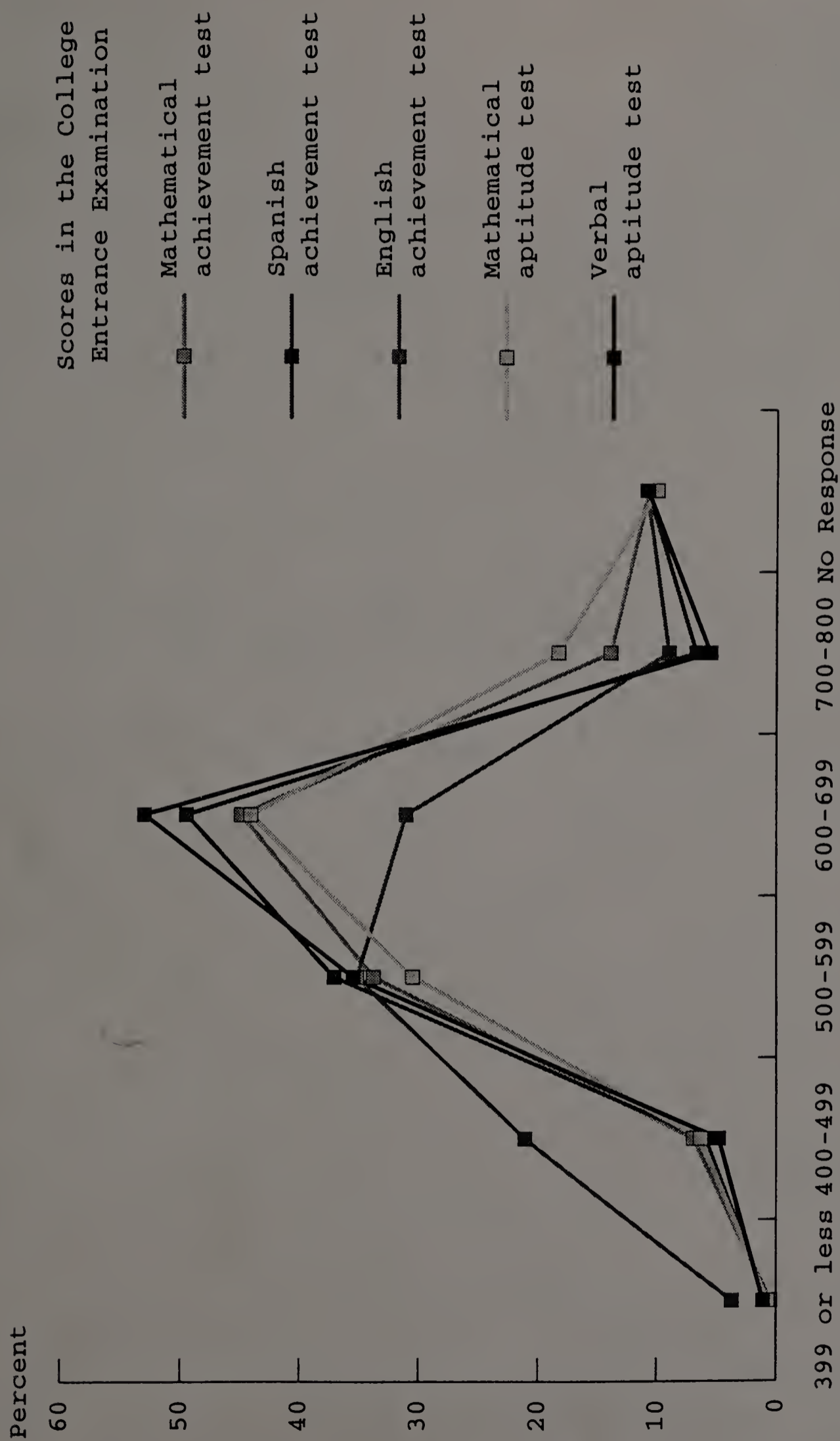


Figure 11. Percentage of Freshman Students by Scores in the College Entrance Examination (Questions #11, 12, 13, 14, 15).

(27.4%), Natural Sciences (23.6%), and Social Sciences (20.8%). These were followed by the Colleges of Humanities (13.5%), Education (8.8%), Public Communication (3.0%), Architecture (1.6%), and General Studies (1.3%) (see Figure 12). These figures indicate that almost half of the freshman students preferred the Colleges of Business Administration (27.4%) and Natural Sciences (23.6%). The colleges with more females were Public Communication (89.1%) followed by Education (77.3%) and Architecture (73.9%).

Previous findings demonstrate that there has been a shift in student preferences regarding their college of enrollment. For example, in 1990, 15.4% of the students preferred the College of Social Sciences, 21.0% the College of Education while 19.9% preferred the College of Natural Sciences (Office of Academic Planning, 1992). It is important to note that the college of enrollment has a positive impact on students' academic achievement. Several authors such as Thomas and Gordon (1983) and others have found that students enrolled in four-year institutions, with specializations in the hard-sciences or technical fields, have a positive influence in the academic performance even when other variables such as high school GPA, educational expectations, and verbal aptitude, are controlled.

Academic Program. All students were enrolled in programs leading to a bachelor's degree. The academic

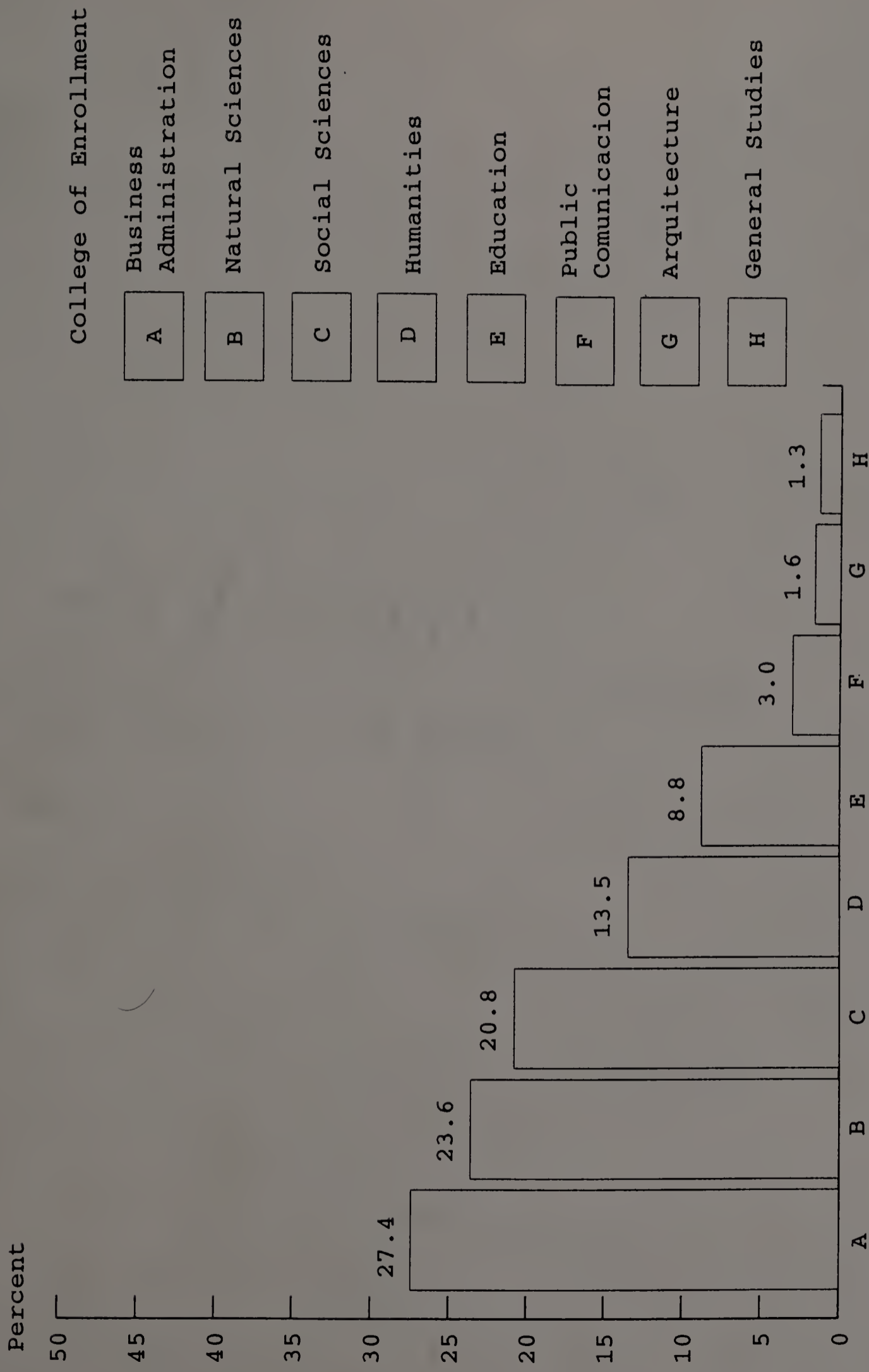


Figure 12. Percentage of Freshman Students by College of Enrollment.

majors with more students were accounting (13.6%), psychology (10.1%), pre-medicine (7.7%), biology (5.9%), political sciences (3.5%), fine arts (3.3%), public communication (3.0%), and computer sciences (3.0%). Table 2 presents freshman enrollment by academic program for the Fall of 1993.

It is important to note that the college with the most students receiving Pell Grants to finance their education was Education (75.8%) followed by Social Sciences (68.6%), Business Administration (68.3%), Public Communication (63.0%), and Humanities (62.8%). The college with the most students receiving family assistance to pay their college education was Architecture (66.7%) followed by Public Communication (52.2%).

Financial Background

Sources of Financial Assistance. Students were asked to reveal their source of funds for financing their college education. Freshman students depended mostly on Pell Grants (67.5%) and other sources of financial aid as family assistance (44.0%); full-time or part-time job (22.4%); personal savings (6.1%); and scholarships from the government of Puerto Rico (17.8%) to finance their education (see Figure 13). Taking into consideration these findings, freshmen at the UPR-RP Campus today, more than ever before, attend college mostly on federal grants. If the Pell Grant is reduced or eliminated it will be a difficult situation for the UPR-RP Campus. The University

Table 2

Frequency and Percentage of Freshman Students
by Academic Program

Item	Frequency	Percentage
Academic program		
Architecture		
Architectural design	24	1.6
Business Administration		
General	33	2.2
Accounting	206	13.6
Economy	3	.2
Finance	33	2.2
Statistics	1	.1
Secretarial studies	37	2.4
Information systems	45	3.0
Human resources	21	1.4
Marketing	18	1.2
Management	16	1.1
Education		
Elementary school		
Kinder to third-grade	11	.7
Fourth to sixth-grade	2	.1
Special education	5	.3
English	1	.1
Home economics	1	.1

Continued, next page

Table 2 -- Continued

Item	Frequency	Percentage
Secondary school		
Sciences	5	.3
Biology	22	1.5
Chemistry	6	.4
Mathematics	14	.9
Physics	1	.1
Social studies	2	.1
Business education	5	.3
Physical education	10	.7
Vocational education	1	.1
English as a second language	4	.3
Art	2	.1
History	5	.3
Spanish	8	.5
Music	2	.1
Theater	3	.2
Foreign languages	3	.2
Secretarial studies	1	.1
Occupational therapy	1	.1
Health education	1	.1
Home economics		
General program	1	.1
Extension program	1	.1

Continued, next page

Table 2 -- Continued

Item	Frequency	Percentage
Nutrition and dietetics	16	1.1
Humanities		
Fine arts	50	3.3
English (language and literature)	18	1.2
Philosophy	5	.3
Hispanic studies	17	1.1
Music	15	1.0
Drama	26	1.7
French	7	.5
Literature	1	.1
Art history	3	.2
Language (locution)	2	.1
Western history	3	.2
American history	3	.2
Pre-law	27	1.8
Pre-translation	2	.1
Contemporary languages	28	1.8
Public Communication	46	3.0
Social Sciences		
General program	29	1.9
Economy	37	2.4
Labor relations	13	.9
Political sciences	53	3.5

Continued, next page

Table 2 -- Continued

Item	Frecuency	Percentage
Psychology	153	10.1
Sociology	8	.5
Anthropology	4	.3
Geography	1	.1
General Studies	17	1.1
Natural Sciences		
General program	10	.7
Biology	90	5.9
Chemistry	44	2.9
Mathematics	3	.2
Environmental sciences	5	.3
Physics	5	.3
Transfer programs to Medical Science Campus- UPR System		
Pre-medicine	116	7.7
Pre-dentistry	8	.5
Pre-pharmacy	37	2.4
Pre-therapy	22	1.5
Pre-medical technology	18	1.2

N=1665

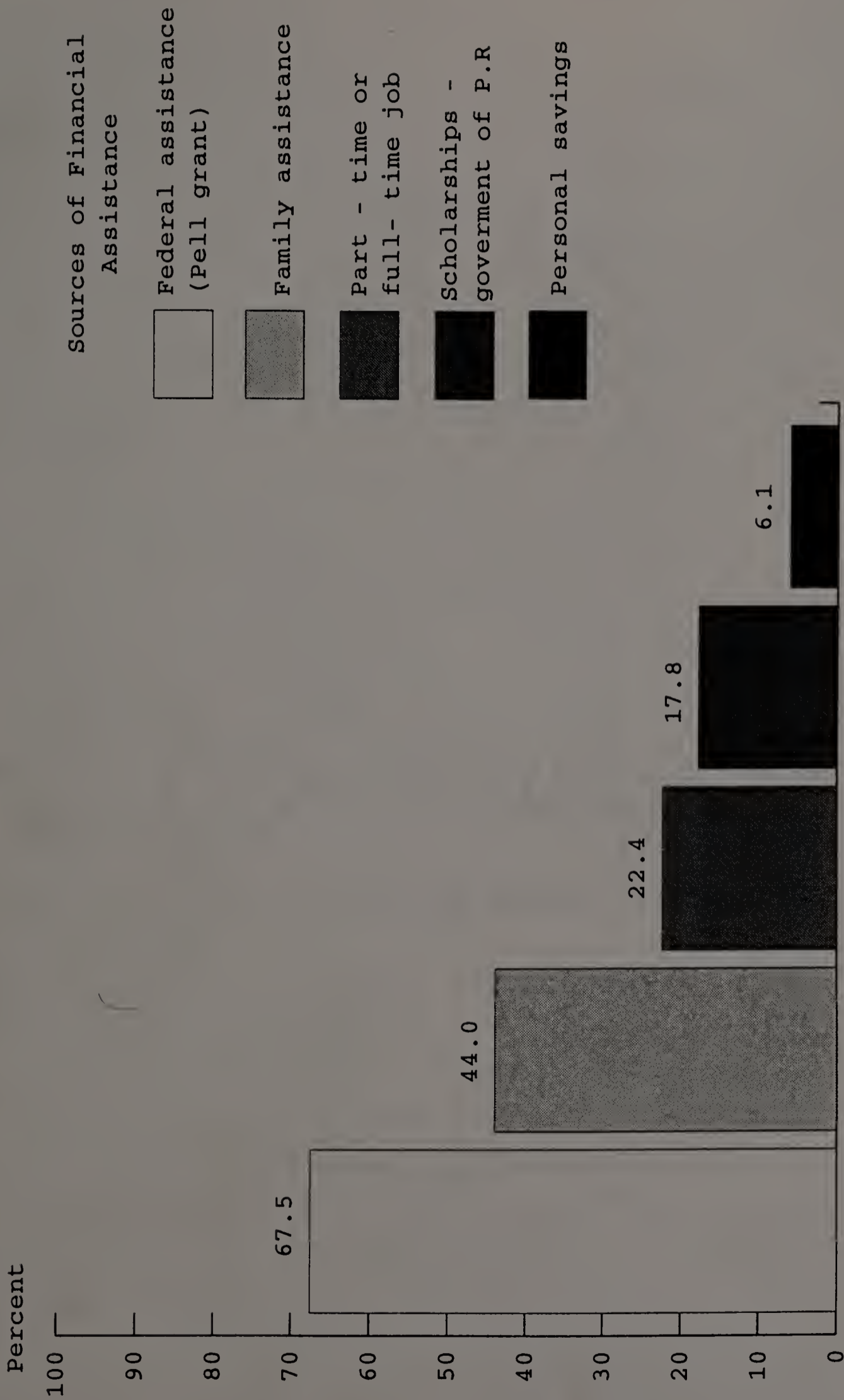


Figure 13. Data from Question # 9. How are you paying for your college education ?

System does not have the financial resources to subsidize tuition costs for the students. This will be critical because the future of Puerto Rico depends on the quality of its educational process. Moreover, today a vast majority of the students (90.0%) enrolled in private and public universities rely on Pell Grants to pay for their college education. Any changes in this program, could force thousands of the island's more than 100,000 students in colleges and universities to depart from their institutions. This means that higher education in Puerto Rico is too dependent on what happens in Washington regarding the financial resources available for Puerto Ricans students to finance their college education.

Students were asked that, if they receive any kind of financial assistance, will they still need to work to pay for their college education? Half of the students (50.1%) indicated that they did not need to work while 49.9% indicated that they still need to work to finance their college (see Figure 14).

Employment Patterns

Work Experience. When students were asked if they have ever worked prior to college entrance, 71.7% indicated that they have worked before entering college while 28.3% indicated that they have never work before (see Figure 15).

When asked if they were currently working, 71.0% of the students reported that they were not working. Of

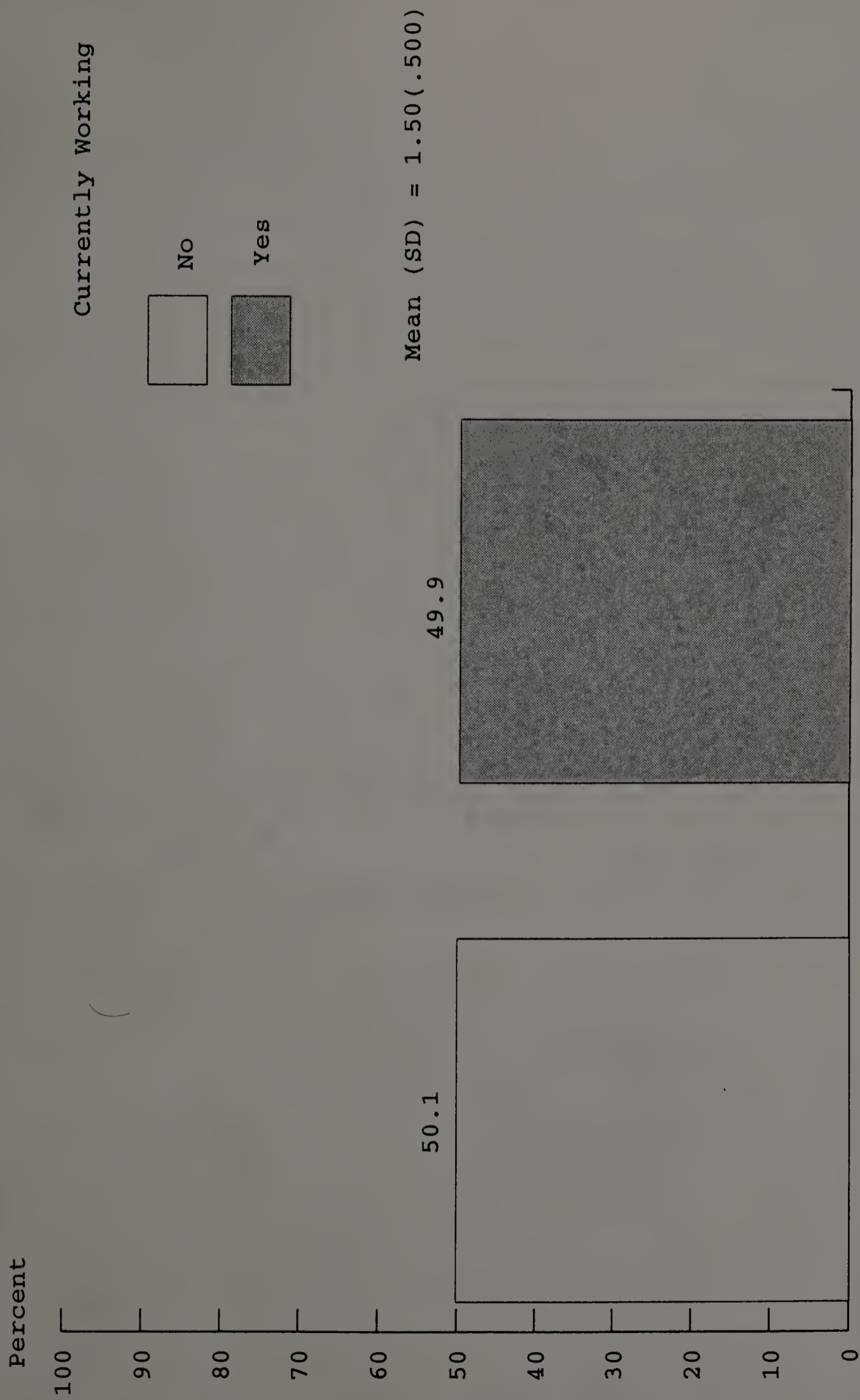


Figure 14. Data from Question # 10. If you receive any kind of financial aid, will you still need to work to pay for your college education?

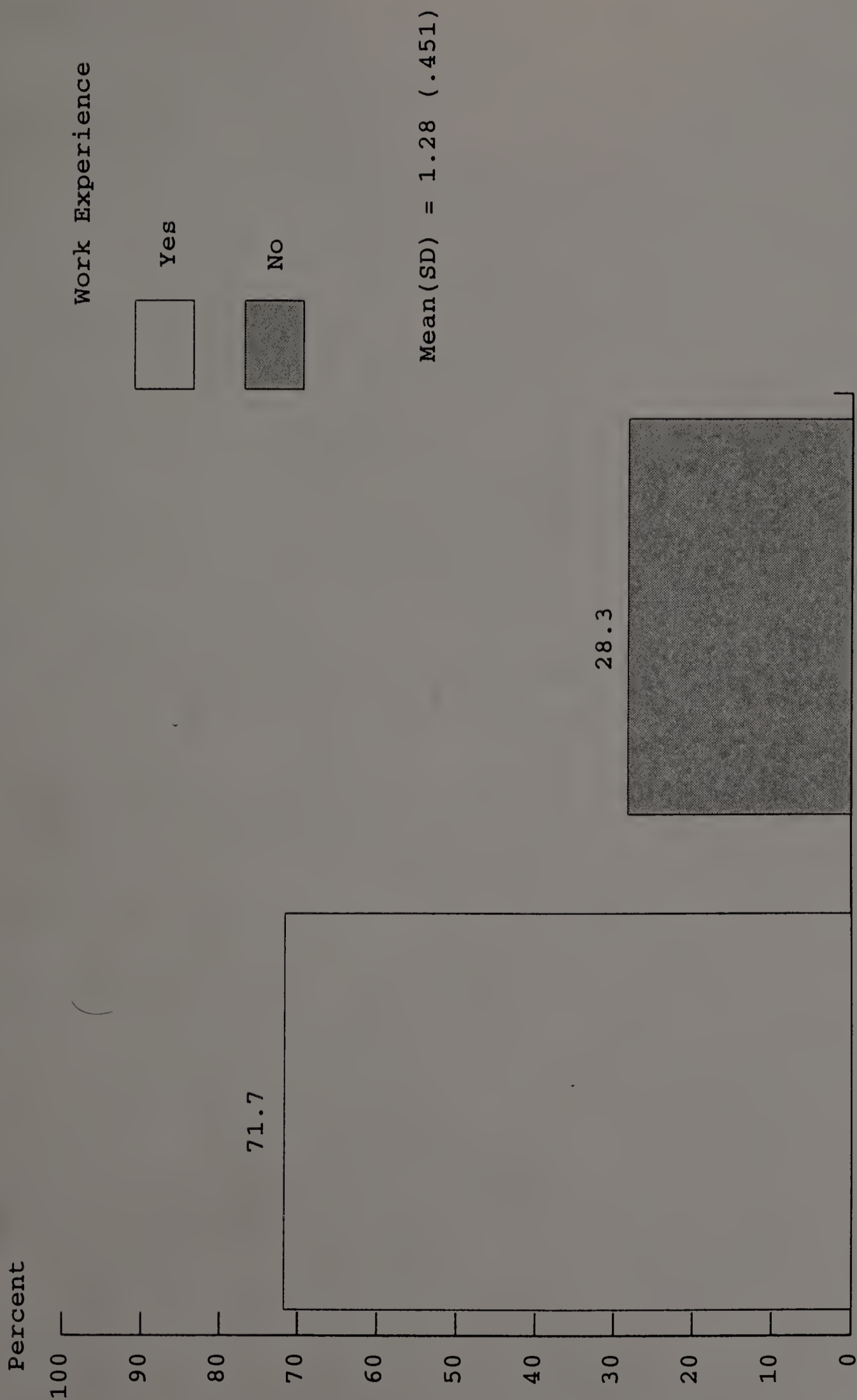


Figure 15. Data from Question #18. Have you ever work in your life?

those students (29.0%) who were currently employed, 9.5% indicated that they were working an average of one to 19 hours per week; 14.9% were working an average of 20 to 39 hours per week; and roughly 4.6% were working an average of 40 hours or more per week (see Figure 16). It is worthy to note that these findings suggest that the number of students working full or part-time declines after entrance to college. Maybe this tendency can be ascribed to the fact that most students were enrolled on a full-time basis. Upcraft, Peterson, and Moore (1981) found that students who worked 20 hours per week or less tended to have better chances for success than those who worked 20 hours per week or more.

Needs of the Freshman Population

The data was analyzed to identify the perceived needs of entering freshmen in the academic, career, and personal areas. Table 3 presents the results of the needs assessment for the general freshman population.

The academic area included 15 items. Of these items, 12 were ranked by 50.0% to 70.0% of the students as strong or moderate need. Of the students surveyed 50.0% to 70.0% indicated either strong or moderate need for these items. The 12 highest rated needs were as follows: to learn more about academic events, university services, and facilities (69.9%); adjusting to different teachers' expectations and demands (60.9%); feeling comfortable when speaking up in class (60.4%); preparing a study plan (59.7%); learning to

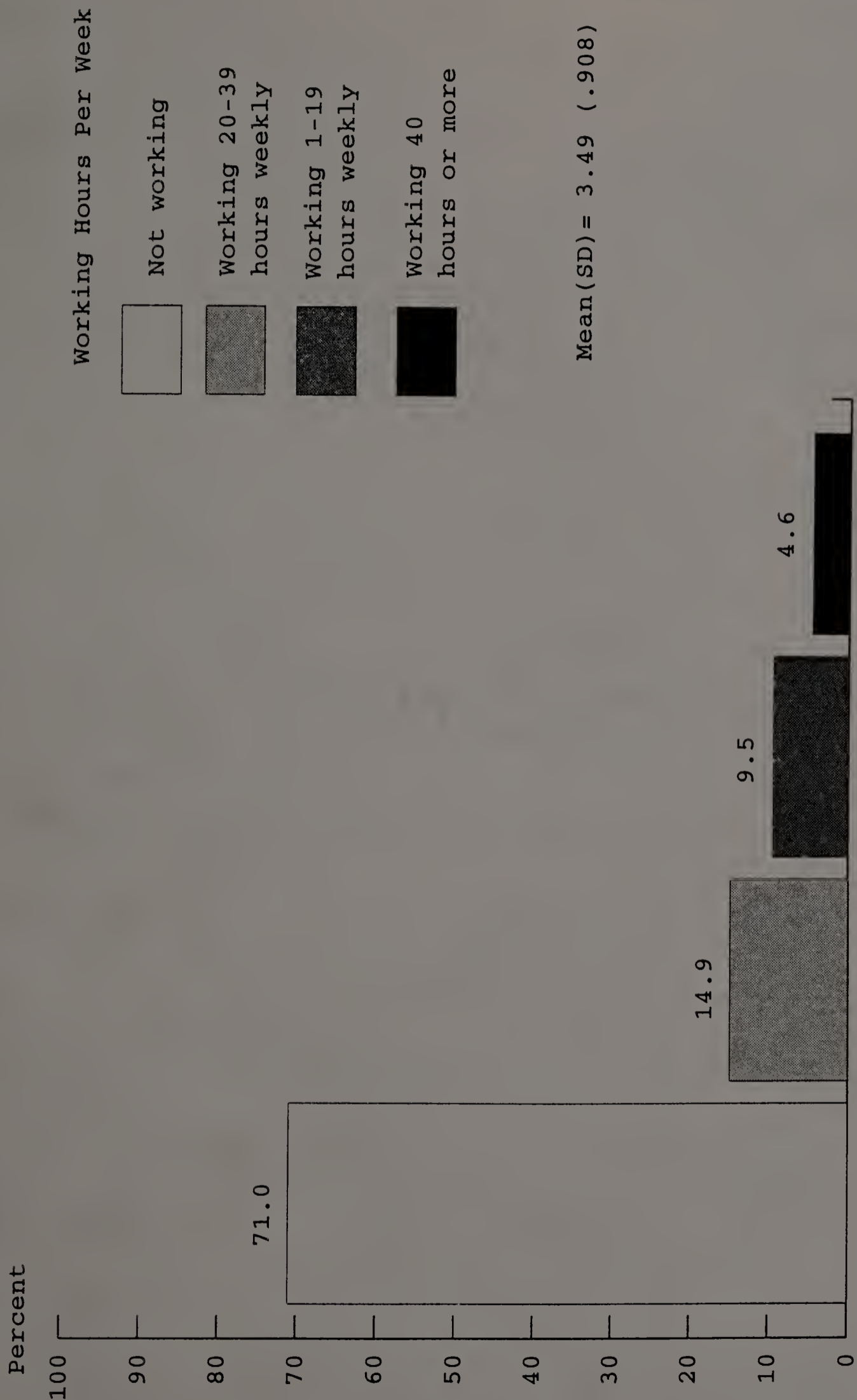


Figure 16. Data from Question #19. If you are currently working, how many hours on average do you work per week?

Table 3

Percentage of Freshman Students Reporting Needs by
Personal, Academic, and Vocational Areas

Item	% Marking Strong or Moderate Need	Mean (SD) (<u>N</u> =1665)
<u>Personal Needs</u>		
To budget and spend my money wisely.	53.9	2.38 (0.96)
To learn how to express anger in acceptable ways.	51.0	2.47 (0.96)
To be able to cope better with depression.	48.0	2.51 (0.95)
To learn how to make decisions independently of my parents' influence.	46.6	2.53 (1.00)
To learn how to handle stress and anxiety in my life.	44.2	2.58 (0.91)
To develop independence.	42.6	2.63 (1.01)
To learn leadership skills.	41.2	2.65 (0.92)
To be more comfortable in expressing my feelings and thoughts sincerely.	40.3	2.69 (0.98)
To learn how to cope with a broken relationship.	39.4	2.74 (1.04)
To explore my feelings about death and dying, specially of parents and friends.	38.4	2.77 (1.03)
To learn how to solve problems.	38.3	2.69 (0.90)

Continued, next page

Table 3 -- Continued

Item	% Marking Strong or Moderate Need	Mean (SD) (<u>N</u> =1665)
To learn how to cope with loneliness.	37.7	2.73 (1.00)
To understand and deal with feelings of jealousy.	34.1	2.82 (0.98)
To learn how to control my weight.	33.8	2.91 (1.08)
To improve my relationship with my parents.	33.3	2.83 (1.00)
To develop better relationship with others.	30.9	2.86 (0.88)
To learn to manage sickness in the family.	30.1	2.89 (0.91)
To understand myself better.	29.7	2.89 (0.91)
To learn how to accept criticism from others without being upset.	28.8	2.90 (0.84)
To know more about birth control methods.	28.3	2.99 (0.91)
To develop a healthier life-style.	26.8	2.98 (0.91)
To improve my relationship with my dating/marriage partner.	25.2	3.08 (0.98)
To improve my self-esteem.	24.0	3.05 (0.92)
To know more about aids and how to prevent this sexually- transmitted disease.	23.8	3.05 (0.92)

Continued, next page

Table 3 -- Continued

Item	% Marking Strong or Moderate Need	Mean (SD) (N=1665)
To become a better listener.	22.6	3.06 (0.84)
To understand better my sexuality.	22.3	3.10 (0.92)
To understand better the meaning of love and intimacy.	16.5	3.26 (0.87)
To learn how to handle thoughts of suicide.	12.2	3.42 (0.83)
To learn how to cope with my parents' divorce.	12.0	3.54 (0.84)
To obtain more information about the use/abuse of drugs and alcohol.	10.7	3.40 (0.77)
<u>Academic Needs</u>		
To learn more about academic events, university services, and facilities.	69.9	2.07 (0.89)
To learn how to adjust to different teachers' expectations, and demands.	60.9	2.26 (0.90)
To feel comfortable when speaking up in class.	60.4	2.25 (1.01)
To learn how to prepare a study plan.	59.7	2.28 (0.97)

Continued, next page

Table 3 -- Continued

Item	% Marking Strong or Moderate Need	Mean (SD) (N=1665)
To learn how to prepare written reports.	59.1	2.28 (0.94)
To learn how to prepare oral reports.	56.8	2.34 (0.92)
To learn how to control the anxiety regarding my academic performance.	51.6	2.40 (0.91)
To learn how to use the library.	56.7	2.36 (0.91)
To develop more effective study habits.	55.8	2.33 (0.99)
To feel less anxious when taking a test.	52.8	2.39 (0.96)
To improve my concentration and memory skills.	52.5	2.40 (0.94)
To develop notetaking skills.	49.7	2.48 (0.96)
To improve my mathematical skills.	49.2	2.42 (0.99)
To improve my reading skills.	48.1	2.53 (1.04)
To participate in community services, projects and activities.	45.4	2.50 (0.91)

Continued, next page

Table 3 -- Continued

Item	% Marking Strong or Moderate Need	Mean (SD) (N=1665)
<u>Vocational Needs</u>		
To obtain information about academic offerings, requirements, and number of years required to complete them.	70.5	2.04 (0.95)
To obtain information about a variety of career areas.	61.4	2.23 (0.95)
To know the occupations of more demand in the job-market.	63.6	2.19 (0.94)
To identify my interests, aptitudes, and abilities and how they relate to my educational/occupational alternatives.	57.8	2.31 (0.96)
To develop my decision-making skills.	52.0	2.44 (0.93)
To identify and determine my values and how they influence my work.	50.6	2.45 (0.95)
To identify and understand better my motivations and attitudes toward work.	49.7	2.47 (0.94)
To choose a career.	45.2	2.59 (1.03)
To know my strengths, competencies, and personal limitations.	53.2	2.39 (0.96)

Note: Means based on Strong Need, Moderate Need, Weak Need, No Need; SD=Standard Deviation.

write reports (59.1%); preparing oral reports (56.8%); learning how to use the library (56.7%); developing effective study habits (55.8%); feeling less anxious when taking a test (52.8%); improving concentration and memory skills (52.5%); learning how to control the anxiety regarding their academic performance (51.6%); and developing note-taking skills (49.7%). The lowest rated academic needs with only 49.0% to 21.0% of the students marking strong or moderate need included such areas as improving mathematical skills (49.2%); improving reading skills (48.1%); and participating in community services and projects (45.4%).

The vocational area included nine items. Eight items were ranked either strong or of moderate need by 70.0% to 50.0% of the freshman students. The highest needs were as follows: obtaining information about academic offerings and requirements (70.5%); gaining knowledge about the occupations of more demand (63.6%); obtaining information about variety of career areas (61.4%); identifying their interests, aptitudes, and abilities (57.8%); identifying strengths, competencies, and personal limitations (53.2%); developing decision making skills (52.0%); identifying their values and how they influence work (50.6%); understanding better motivations and attitudes toward work (49.7%). There was only one lowest ranked vocational need with less than 49.0% of the students marking strong or moderate need, to choose a career (45.2%).

Of the 30 items in the personal area, the highest ranked ones were, budgeting and spending money wisely (53.9%) and learning how to express anger in acceptable ways (51.0%). These categories were strong or moderate need for 50.0% to 54.0% of the freshman students. Thus, only two of the 30 needs items in the personal area were rated by the students as a strong or moderate need.

Table 4 shows the 21 items perceived as urgent needs by the total freshman population. Career related needs dominated the list, headed by obtaining information about academic offerings and requirements (70.5%). Other highly-rated career items included knowing the occupations of more demand in the job-market (63.6%), obtaining information about a variety of career areas (61.4%), and identifying their interests, aptitudes, and abilities and educational/occupational alternatives (57.8%). Responses to many survey items reflected the strong career orientation among entering freshmen.

Academic needs were also prominent, including the second-ranked, learning more about academic events, university services, and facilities (69.9%), the fifth, learning how to adjust to different teachers' expectations and demands (60.9%), the sixth, feeling comfortable when speaking up in class (60.4%), the seventh, learning to prepare a study plan (59.7%), and the eighth, learning to prepare written reports (59.1%). Responses reflected strong concern regarding academic performance.

Table 4
Highest Ranked Needs of Freshman Students

Item	Area	Percentage	Mean (SD)
To obtain information about academic offerings, requirements, and number of years required to complete them.	V	70.5	2.04 (0.95)
To learn more about academic events, university services, and facilities.	A	69.9	2.07 (0.89)
To know the occupations of more demand in the job-market.	V	63.6	2.19 (0.94)
To obtain information about a variety of career areas.	V	61.4	2.23 (0.95)
To learn how to adjust to different teachers' expectations and demands.	A	60.9	2.26 (0.90)
To feel comfortable when speaking up in class.	A	60.4	2.25 (1.01)
To learn how to prepare a study plan.	A	59.7	2.28 (0.97)
To learn how to prepare written reports.	A	59.1	2.28 (0.94)
To identify my interests, aptitudes, and abilities and how they relate to my educational/occupational alternatives.	V	57.8	2.31 (0.96)
To learn how to use the library.	A	56.7	2.36 (0.91)

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Table 4 -- Continued

Item	Area	Percentage	Mean (SD)
To develop more effective study habits.	A	55.8	2.33 (0.99)
To budget and spend my money wisely	P	53.9	2.38 (0.96)
To know my strengths, competencies, and personal limitations.	V	53.2	2.39 (0.96)
To feel less anxious when taking a test.	A	52.8	2.39 (0.96)
To improve my concentration and memory skills.	A	52.5	2.40 (0.94)
To develop my decision making skills.	V	52.0	2.44 (0.93)
To learn to control my anxiety regarding my academic performance	A	51.6	2.40 (0.91)
To learn how to express anger in acceptable ways.	P	51.0	2.47 (0.90)
To identify and determine my values and how they influence my work.	V	50.6	2.45 (0.95)
To develop notetaking skills.	A	49.7	2.48 (0.96)
To identify and understand better my motivations and attitudes toward work.	V	49.7	2.47 (0.94)

Note: SD=Standard Deviation

Finally, only two of the 21 highest rated items were from the personal need area, budgeting and spending money wisely (53.9%) and learning to express anger in acceptable ways (51.0%). None of the 10 highest rated items were from the personal area.

In general terms, academic-career related items dominated the study. These findings are consistent with Sagaria et al. (1982) who found that academic matters have priority for American freshmen and also with Staik and Dickman (1988) who contended that incoming students in American institutions were highly concerned with academic issues followed by campus life, finances, and time management. It is important to note that academic-career issues are intrinsically related to students' successful integration into the academic system of college life.

Needs of Female and Male Students

The data was analyzed to compare the needs of males ($n=485$) and females ($n=1180$). A chi-square was calculated for each of the 54 needs items. Table 5 presents freshmen needs by sex. There were significant differences between the categories - academic, career, and personal - when controlling for sex. Female students indicated a significantly higher total number of needs than male students in all needs categories, particularly in the academic-career areas. Thus, it can be concluded that females and males did not share similar needs regarding the categories studied.

Table 5

Percentage of Freshman Students Reporting Needs by Sex

Item	Sex	
	Male (<u>n</u> =485)	Female (<u>n</u> =1180)
<u>Personal Needs</u>		
To budget and spend my money wisely.	55.8	52.9
To learn how to express anger in acceptable ways.	43.0	54.2 ***
To be able to cope better with depression.	39.1	51.6 ***
To learn how to make decisions independently of my parents' influence.	35.1	51.4 ***
To develop independence.	36.8	45.0 ***
To learn how to handle stress and anxiety in my life.	33.7	48.4 ***
To learn leadership skills.	41.9	41.0
To be more comfortable in expressing my feelings and thoughts sincerely.	36.7	41.7
To learn how to cope with a broken relationship.	37.0	40.5
To explore my feelings about death and dying, specially of parents and friends.	31.2	41.4 ***
To learn how to solve problems.	32.2	40.8 ***
To learn how to cope with loneliness.	30.3	40.8 ***

Continued, next page

Table 5 -- Continued

Item	Sex	
	Male (<u>n</u> =485)	Female (<u>n</u> =1180)
To understand and deal with feelings of jealousy.	32.5	34.7
To learn how to control my weight.	26.4	36.7 **
To improve my relationship with my parents.	32.7	33.4
To develop better relationship with others.	32.2 *	30.2
To learn to manage sickness in the family.	28.6	30.8
To understand myself better.	27.7	30.4
To learn how to accept criticism from others without being upset.	27.2	29.4
To know more about birth control methods.	25.4	29.6
To develop a healthier life-style.	28.5	26.0
To improve my relationship with my dating/marriage partner.	25.6	25.2
To improve my self-esteem.	24.4	23.8
To know more about aids and how to prevent this sexually-transmitted disease.	26.2	22.9
To become a better listener.	27.1 *	20.6

Continued, next page

Table 5 -- Continued

Item	Sex	
	Male (<u>n</u> =485)	Female (<u>n</u> =1180)
To understand better my sexuality.	15.5	16.8
To understand better the meaning of love and intimacy.	22.1	22.3
To learn how to handle thoughts of suicide.	11.2	12.6
To learn how to cope with my parents' divorce.	13.4	11.4
To obtain more information about the use/abuse of drugs and alcohol.	12.7	9.8
<u>Academic Needs</u>		
To learn more about academic events, university services, and facilities.	63.8	72.4 ***
To learn how to adjust to different teachers' expectations, and demands.	55.6	63.1 ***
To feel comfortable when speaking up in class.	56.3	62.0 *
To learn how to prepare a study plan.	58.8	59.9
To learn how to prepare written reports.	59.4	59.0

Continued, next page

Table 5 -- Continued

Item	Sex	
	Male (<u>n</u> =485)	Female (<u>n</u> =1180)
To learn how to prepare oral reports.	57.1	56.5
To learn how to control the anxiety regarding my academic performance.	42.6	55.4 ***
To learn how to use the library.	53.6	57.9
To develop more effective study habits.	59.8	54.0
To feel less anxious when taking a test.	46.8	55.4 ***
To improve my concentration and memory skills.	50.1	53.4
To develop notetaking skills.	53.3	48.1
To improve my mathematical skills.	43.0	51.7 **
To improve my reading skills.	51.0	46.7
To participate in community services, projects, and activities.	42.7	49.3 *
<u>Vocational Needs</u>		
To obtain information about academic offerings, requirements, and number of years required to complete them.	64.5	72.9 **

Continued, next page

Table 5 -- Continued

Item	Sex	
	Male (<u>n</u> =485)	Female (<u>n</u> =1180)
To obtain information about a variety of career areas.	58.2	62.7 *
To know the occupations of more demand in the job-market.	59.6	65.3
To identify my interests, aptitudes, and abilities and how they relate to my educational/occupational alternatives.	51.2	60.5 ***
To develop my decision-making skills.	43.4	55.4 ***
To identify and determine my values and how they influence my work.	47.6	51.8
To identify and understand better my motivations and attitudes toward work.	45.8	51.3 *
To choose a career.	41.6	46.7
To know my strengths, competencies, and personal limitations.	46.5	55.8 *

Note: Sex differences between percentages for each need tested with chi-square.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

In the academic area, female students indicated significantly stronger needs than male students on seven of the 15 needs items including learning more about academic events, university services, and facilities (72.4%/63.8%), learning to adjust to different teachers' expectations and demands (63.1%/55.6%), feeling comfortable when speaking up in class (62.0%/56.3%), feeling less anxious when taking a test (55.7%/46.8%), learning to control anxiety regarding academic performance (55.4%/42.6%), improving mathematical skills (51.7%/43.0%), and participating in community services, projects, and activities (49.3%/42.7%).

In the career area, females reported significantly stronger needs than males on six of the nine items including obtaining information about academic offerings and requirements and the number of years required to complete them (72.9%/64.5%), obtaining information about a variety of career areas (62.7%/58.2%), identifying their interests, aptitudes, and abilities and how do all of these relate to their education/occupational alternatives (60.5%/51.2%); knowing their strengths, competencies, and limitations (55.8%/46.5%), developing their decision making skills (55.4%/43.4%), and understanding better their motivations and attitudes toward work (51.3%/45.8%).

In the personal area, females students reported significantly higher needs than male students on nine of the 30 items including learning to express anger in

acceptable ways (54.2%/43.0%), coping better with depression (51.6%/39.1%), learning to make decisions independent of their parents' influence (51.4%/35.1%), learning to handle stress and anxiety (48.4%/33.7%), exploring their feelings about death and dying, (specially of parents and friends) (41.4%/31.2%), learning to solve problems (40.8%/32.2%), learning to cope with loneliness (40.8%/30.3%), and learning to control their body weight (36.7%/26.4%). In contrast males showed significantly stronger needs than females in only two items, developing better relationships with others (32.2%/30.2%) and becoming a better listener (27.1%/20.6%). In general terms, female students expressed more concerns than male students in all areas.

Needs of Entering Students by Type of High School

The data were analyzed also to determine if students' perceived needs differed depending on the type of high school they attended. A chi-square test was calculated for each of the 54 categories or items. There were significant differences in freshman needs by type of high school. Table 6 presents the percentages of freshman students reporting needs by type of high school in Puerto Rico.

In the academic area, entering students coming from public schools in Puerto Rico reported significantly stronger needs than those students coming from private schools in Puerto Rico in 12 of the 15 items including

Table 6

Percentage of Freshman Students Reporting Needs by
Type of High School

Item	Type of High School	
	Public school in Puerto Rico (<u>n</u> =766)	Private school in Puerto Rico (<u>n</u> =870)
<u>Personal Needs</u>		
To budget and spend my money wisely.	58.3 *	49.6
To learn how to express anger in acceptable ways.	51.1	50.9
To be able to cope better with depression.	50.6	45.6
To learn how to make decisions independently of my parents' influence.	49.1	44.0
To develop independence.	44.1	41.7
To learn how to handle stress and anxiety in my life.	49.1 **	39.6
To learn leadership skills.	43.2	39.9
To be more comfortable in expressing my feelings and thoughts sincerely.	41.4	39.1
To learn how to cope with a broken relationship.	39.8	39.5
To explore my feelings about death and dying, specially of parents and friends.	38.6	38.1
To learn how to solve problems.	41.6	35.2

Continued, next page

Table 6 -- Continued

Item	Type of High School	
	Public school in Puerto Rico (<u>n</u> =766)	Private school in Puerto Rico (<u>n</u> =870)
To learn how to cope with loneliness.	41.3	34.7
To understand and deal with feelings of jealousy.	33.1	35.0
To learn how to control my weight.	34.4	33.1
To improve my relationship with my parents.	32.3	34.0
To develop better relationship with others.	30.9	30.2
To learn to manage sickness in the family.	30.4	30.0
To understand myself better.	29.8	29.6
To learn how to accept criticism from others without being upset.	27.2	30.3 **
To know more about birth control methods.	28.2	28.4
To develop a healthier life-style.	25.9	27.5
To improve my relationship with my dating/marriage partner.	24.7	25.9
To improve my self-esteem.	25.4	22.6
To know more about aids and how to prevent this sexually- transmitted disease.	21.7	25.3 **

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Table 6 -- Continued

Item	Type of High School	
	Public school in Puerto Rico (<u>n</u> =766)	Private school in Puerto Rico (<u>n</u> =870)
To become a better listener.	18.6	25.4 ***
To understand better my sexuality.	16.3	16.7
To understand better the meaning of love and intimacy.	22.2	22.7
To learn how to handle thoughts of suicide.	12.3	12.0
To learn how to cope with my parents' divorce.	12.2	11.9
To obtain more information about the use/abuse of drugs and alcohol.	9.8	11.6
<u>Academic Needs</u>		
To learn more about academic events, university services, and facilities.	71.7 *	68.6
To learn how to adjust to different teachers' expectations, and demands.	66.7 **	56.2
To feel comfortable when speaking up in class.	62.5	58.7
To learn how to prepare a study plan.	65.8 ***	54.1

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Table 6 -- Continued

Item	Type of High School	
	Public school in Puerto Rico (<u>n</u> =766)	Private school in Puerto Rico (<u>n</u> =870)
To learn how to prepare written reports.	64.2 *	54.8
To learn how to prepare oral reports.	60.9 *	53.0
To learn how to control the anxiety regarding my academic performance.	56.3 *	47.3
To learn how to use the library.	57.1	56.0
To develop more effective study habits.	63.6 ***	49.1
To feel less anxious when taking a test.	57.5 *	48.8
To improve my concentration and memory skills.	55.5 **	49.4
To develop notetaking skills.	54.0 ***	46.0
To improve my mathematical skills.	53.7 ***	45.1
To improve my reading skills.	51.9 *	44.9
To participate in community services, projects, and activities.	49.4	45.9

Continued, next page

Table 6 -- Continued

Item	Type of High School	
	Public school in Puerto Rico (\underline{n} =766)	Private school in Puerto Rico (\underline{n} =870)
<u>Vocational Needs</u>		
To obtain information about academic offerings requirements, and number of years required to complete them.	74.3 **	67.2
To obtain information about a variety of career areas.	62.6	60.4
To know the occupations of more demand in the job-market.	63.9	63.1
To identify my interests, aptitudes, and abilities and how they relate to my educational/occupational alternatives.	61.7	54.5
To develop my decision-making skills.	53.2	50.7
To identify and determine my values and how they influence my work.	54.1	47.4
To identify and understand better my motivations and attitudes toward work.	50.5	48.8
To choose a career.	47.2	43.4
To know my strengths, competencies, and personal limitations.	56.7 *	49.6

Note: Type of high school differences between percentages for each need tested with chi-square.

* $p < .05$. ** $p < .01$. *** $p < .001$.

learning more about academic events, university services, and facilities (71.7%/68.6%), learning to adjust to different teachers' expectations and demands (66.7%/56.2%), learning to prepare a study plan (65.8%/54.1%), learning to prepare written reports (64.2%/54.8%), developing effective study habits (63.6%/49.1%), learning to prepare oral reports (60.9%/53.0%), feeling less anxious when taking a test (57.5%/48.8%), learning to control the anxiety regarding their academic performance (56.3%/47.3%), improving their concentration and memory skills (55.5%/49.4%), developing note taking skills (54.0%/46.0%), improving mathematical skills (53.7/45.1%), and finally, improving their reading skills (51.9%/44.9%).

In the career area, freshman students coming from public schools in Puerto Rico reported significantly stronger needs than those coming from private schools in Puerto Rico only in two of the nine items, obtaining information about academic offerings, requirements, and number of years required to complete them (74.3%/67.2%), and knowing their strengths, competencies, and personal limitations (56.7%/49.6%).

In the personal area, freshmen coming from public schools in Puerto Rico reported significantly stronger needs than those coming from private schools in Puerto Rico only in two of the 30 items, budgeting and spending

their money wisely (58.3%/49.6%) and learning to handle stress and anxiety in their life (49.1%/39.6%).

In contrast, freshmen coming from private schools in Puerto Rico indicated significantly stronger needs in three items including learning to accept criticism from others without becoming upset (30.3%/27.2%), becoming a better listener (25.4%/18.6%), and knowing more about AIDS and how to prevent this sexually transmitted disease (25.3%/21.7%).

In general terms, students coming from public schools in Puerto Rico reported more concerns than students coming from private schools in Puerto Rico in all areas.

Needs of Entering Students by College of Enrollment

The data was analyzed to compare freshman needs taking into consideration their college of enrollment. An analysis of the data using chi-square was also made. Significant differences in students needs by college enrollment were found.

Freshman students indicated significantly stronger needs according to their college of enrollment in eight of the nine items in the academic area, in eight of the 15 items in the career area, and in five of the 30 items in the personal area. Table 7 presents differences in freshman needs by college of enrollment.

The findings of this study indicated that freshmen enrolled in the Colleges of Business Administration, Natural Sciences, and Social Sciences reported

Table 7

Percentage of Freshman Students Reporting Needs
by College of Enrollment

Item	College of Enrollment								Level of Significance	
	Ed.	N.S.	Bus. Ad.	Hum.	S.S.	Arch.	Pub. Comm.	G.S.		
<u>Personal Needs</u>										
Budget and spend my money wisely	2.8	12.0	14.6	7.0	11.6	.9	2.0	.8	**	
Improve my self-esteem	1.7	5.5	6.3	3.9	5.2	.4	.8	.3		
Learn how to handle stress and anxiety in my life	4.3	10.4	12.0	6.1	9.6	.7	1.2	.3		
Develop better relationships with others	3.0	7.2	8.4	4.3	5.9	.5	.9	.4		
Learn how to accept criticism from others without being upset	2.1	6.4	8.5	3.3	6.3	.4	1.3	.3	**	
Develop a healthier life-style	1.7	6.0	7.5	3.9	5.9	.5	.9	.3		

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Table 7 -- Continued

Item	College of Enrollment							Level of Significance	
	Ed.	N.S.	Bus. Ad.	Hum.	S.S.	Arch.	Pub. Comm.		G.S.
Learn leadership skills	3.8	10.4	12.7	4.7	8.0	.5	1.2	.6	
Be able to cope better with depression	4.4	11.7	13.7	6.2	9.5	.8	1.8	.4	
Become a better listener	2.0	4.0	6.5	2.6	4.6	.3	.6	.4	
Improve my relationships with my parents	1.8	6.3	6.1	3.6	5.9	.3	.9	.2	
Understand better the meaning of love and intimacy	1.7	5.9	5.7	2.4	4.7	.4	.7	.3	
Be more comfortable in expressing my feelings and thoughts sincerely	3.2	9.8	11.1	4.7	8.9	.8	1.4	.3	**

Continued, next page

Table 7 -- Continued

Item	College of Enrollment							Level of Significance	
	Ed.	N.S.	Bus. Ad.	Hum.	S.S.	Arch.	Pub. Comm.		G.S.
Understand and deal with feelings of jealousy	2.7	8.0	10.1	4.3	7.2	.4	1.1	.4	
Learn how to express anger in acceptable ways	4.0	11.8	14.7	6.8	10.9	.6	1.7	.6	
Understand myself better	2.3	7.9	7.9	3.6	6.5	.5	.8	.4	
Learn how to cope with a broken relationship	3.2	9.0	10.7	4.9	8.5	.6	1.4	.5	
Understand better my sexuality	1.3	4.5	3.4	1.8	3.4	.4	.7	.2	*
Learn how to cope with loneliness	2.1	8.7	10.6	4.2	7.4	.7	1.5	.4	
Develop independence	3.9	9.2	12.7	4.9	9.4	.6	1.3	.4	

Continued, next page

Table 7 -- Continued

Item	College of Enrollment							Level of Significance
	Ed.	N.S.	Bus. Ad.	Hum.	S.S.	Arch.	Pub. Comm.	
Learn how to control my weight	3.4	7.1	8.9	4.5	7.1	.5	1.0	.6
Explore my feelings about death and dying, specially of parents and friends	12.3	9.7	9.8	5.3	7.5	.5	1.5	.5
Know more about birth control methods	2.7	7.4	7.1	3.8	9.4	.3	1.0	.4
Improve my relationship with my parents	2.9	7.5	9.4	4.5	6.6	.6	1.0	.3
Obtain more information about the use-abuse of drugs and alcohol	.9	3.3	2.3	1.2	1.7	.1	.4	.2
Learn how to handle thoughts of suicide	1.1	3.1	2.7	1.4	2.6	.1	.4	.2

Continued, next page

Table 7 -- Continued

Item	College of Enrollment							Level of Significance	
	Ed.	N.S.	Bus. Ad.	Hum.	S.S.	Arch.	Pub. Comm.		G.S.
Learn how to cope with my parents' divorce	.7	3.2	3.0	1.1	2.6	.2	.2	.2	.2
Learn how to solve problems	3.1	9.5	10.4	4.6	8.0	.6	1.4	.5	.5
Know more about aids and how to prevent this sexually-transmitted disease	2.1	5.7	6.2	2.9	5.0	.4	.8	.5	.5
Learn how to make decisions independently of my parents' influence	4.3	11.5	12.6	6.0	9.6	.6	1.9	.5	.5
Learn to manage sickness in the family	2.4	7.4	7.8	.3	6.3	.5	1.4	.6	.6 *
Improve my relationships with the dating/marriage partner	1.8	6.3	6.1	3.6	5.9	.3	.9	.2	.2

Continued, next page

Table 7 -- Continued

Item	College of Enrollment								Level of Significance
	Ed.	N.S.	Bus. Ad.	Hum.	S.S.	Arch.	Pub. Comm.	G.S.	
<u>Academic Needs</u>									
Develop more effective study habits	4.9	11.9	15.5	7.8	12.2	.8	1.6	.8	
Learn how to prepare a study plan	5.4	13.2	16.8	8.4	12.8	.9	1.7	.9	
Improve my reading skills	3.8	11.0	14.6	6.4	10.2	.8	1.3	.5	
Feel less anxious when taking a test	5.0	12.0	15.3	6.6	10.3	.6	1.5	.6	
Feel comfortable when speaking up in class	5.3	14.1	19.3	7.7	11.4	.9	1.6	.8	**
Develop notetaking skills	4.9	11.9	14.4	6.5	9.8	.6	1.2	.7	**
Learn how to adjust to different teachers' expectations and demands	5.4	14.3	17.6	8.2	13.0	.7	1.7	.7	*

Continued, next page

Table 7 -- Continued

Item	College of Enrollment							Level of Significance	
	Ed.	N.S.	Bus. Ad.	Hum.	S.S.	Arch.	Pub. Comm.		G.S.
Improve my concentration and memory skills	5.1	12.0	14.3	7.7	10.6	.7	1.5	.6	
Learn how to use the library	4.7	12.3	17.2	7.3	11.8	1.0	1.8	.5	*
Improve my mathematical skills	5.4	9.4	11.6	7.9	11.0	.5	2.0	.7	***
Learn how to prepare oral reports	5.6	12.3	17.1	7.7	11.2	.7	1.4	.7	**
Learn how to prepare written reports	5.6	12.9	18.1	7.7	11.6	.7	1.6	.6	**
Learn more about academic events, university services, and facilities	5.7	15.9	20.4	9.0	14.2	1.2	2.4	.8	
Learn to control anxiety regarding my academic performance	4.9	13.1	13.4	6.7	10.5	.8	1.8	.3	***

Continued, next page

Table 7 -- Continued

Item	College of Enrollment							Level of Significance	
	Ed.	N.S.	Bus. Ad.	Hum.	S.S.	Arch.	Pub. Comm.		G.S.
Participate in community services, projects, and activities	4.4	11.6	12.8	5.9	9.9	.7	1.4	.6	
<u>Vocational Needs</u>									
Identify my interests, aptitudes, and abilities and how they relate to my educational/occupational alternatives	5.0	12.8	17.8	7.2	11.3	.8	2.2	.7	*
Obtain information about a variety of career areas	5.4	13.6	18.8	8.4	11.8	.8	2.2	.7	***
Identify and determine my values and how they influence my work	4.2	12.0	15.2	6.2	10.5	.7	1.4	.7	*
Develop my decision-making skills	4.8	12.5	14.7	6.4	10.0	.9	2.1	.6	

Continued, next page

Table 7 -- Continued

Item	College of Enrollment								Level of Significance
	Ed.	N.S.	Bus. Ad.	Hum.	S.S.	Arch.	Pub. Comm.	G.S.	
Know the occupations of more demand in the job-market	5.1	15.0	19.0	8.2	12.8	.9	2.2	.6	**
Obtain information about academic offerings, requirements, and number of years required to complete them	5.8	16.4	20.8	9.4	14.6	.7	2.2	.9	***
Choose a career	3.8	10.5	11.8	6.2	8.9	.4	2.0	.7	*
Identify and understand better my motivations and attitudes toward work	4.5	11.5	14.6	5.7	10.0	.8	1.3	.6	**

Continued, next page

Table 7 -- Continued

Item	College of Enrollment							Level of Significance	
	Ed.	N.S.	Bus. Ad.	Hum.	S.S.	Arch.	Pub. Comm.		G.S.
Know my strengths, competencies, and personal limitations	4.6	12.4	15.4	6.7	10.5	.9	2.1	.6	*

Note: Ed.= Education; N.S.= Natural Sciences; Bus. Ad.= Business Administration; Hum.= Humanities; S.S.= Social Sciences; Arch.= Architecture; Pub. Comm.= Public Communication; G.S.= General Studies.

*p<.05. **p<.01. ***p<.001.

significantly higher needs in the academic, career, and personal areas than those in the Colleges of Education, Humanities, Architecture, Public Communication, and General Studies. In the academic area, students reported stronger needs in eight of the 15 items including feeling comfortable when speaking up in class; developing note-taking skills; learning to adjust to different teachers' expectations and demands; improving their mathematical skills; preparing oral reports; learning to use the library; preparing written reports; and learning to control anxiety regarding their academic performance.

In the career area, freshmen indicated higher needs in all the items: identifying their interests, aptitudes, and abilities; obtaining information about careers; improving mathematical skills; identifying their values and how they influence their work; knowing the occupations of most demand in the job-market; obtaining information about academic offerings; choosing a career; identifying their motivations and attitudes toward work; and knowing their strengths, competencies, and limitations.

Finally, in the personal area, students reported stronger needs in five of 30 items including budgeting and spending money wisely; learning to accept criticism from others; feeling comfortable in expressing their feelings and thoughts; understanding better their sexuality; and learning to manage sickness in the family. In general terms, academic-career issues were rated higher by those

students enrolled in the Colleges of Business Administration, Natural Sciences, and Social Sciences. Students appear to be very concerned with curriculum and teaching procedures, academic performance, study skills, adjustment to college work, career plans, finances, sexual development, friendship, and family matters. The dependent variables- sex, type of high school, and college of enrollment- and the 19 independent variables that define the demographic characteristics, academic and financial backgrounds, and employment patterns of the freshman population were analyzed also to determine any significant relationships among them.

It was found that a significant relationship between the sexes (male/female) and the following independent variables: age, type of high school, grade point average, sources of financial aid (personal savings, Pell grant), scores in the College Entrance Exam (Verbal aptitude, Mathematical aptitude, Spanish achievement, English achievement, Mathematical achievement), father's level of education, work experience prior to college, and number of hours working per week (see Table 8). A detailed description including percentages and significance results among variables is showed in Table 9.

The findings of the study showed that there was a significant relationship between the type of school and the independent variables including sex, age, birthplace, marital states, grade point average, degree aspirations,

Table 8

Results of the Dependent Variable "Sex" and the
Independent Variables of the Study

Independent Variable	X ²	Degree freedom	Significance
Age (DC)	10.36	4	0.0347 *
Type of high school (AB)	18.03	4	0.0012 **
High school-grade point average (GPA) (AB)	118.17	4	0.0000 ***
Sources of financial aid (FB)			
Personal savings	13.24	1	0.0002 ***
Pell grant	13.69	1	0.0002 ***
Scores in the College Entrance Exam (AB)			
Verbal aptitude test	16.53	4	0.0023 **
Mathematical aptitude test	39.75	4	0.0000 ***
Spanish achievement test	9.94	4	0.0413 *
English achievement test	29.15	4	0.0000 ***
Mathematical achievement test	30.17	4	0.0000 ***

Continued, next page

Table 8 -- Continued

Independent Variable	X ²	Degree freedom	Significance
Formal education of the father (AB)	18.61	4	0.0009 ***
Formal education of the mother (AB)	11.52	4	0.0212 *
Work experience prior to college (EP)	4.11	1	0.0426 *
If currently employed, number of hours working per week (EP)	14.09	3	0.0027 **

Note: DC= Demographic Characteristics; AB= Academic Background; FB= Financial Background; EP= Employment Patterns.

* p < .05. ** p < .01. *** p < .001.

Table 9

Description and Significance Results of the Dependent Variable "Sex" and the Independent Variables

Item	Description by Sex		Level of Significance
	Male (<u>n</u> =485)	Female (<u>n</u> =1180)	
Age	.8% had 16 years or less; 27.3% had 17-18 years; .7% had 19-20 years; .1% had 21-22 years; .1% had 23 years or more	3.3% had 16 years or less; 66.6% had 17-18 years; .7% had 19-20 years; .1% had 21-22 years; .2% had 23 or more	*
Birthplace	26.0% were born in Puerto Rico; 1.5% were born in the United States; 1.5% were born in other country	65.9% were born in Puerto Rico; 3.2% were born in the United States; 2.1% were born in other country	
Marital status	.4% were married; 28.5% were single; .1% were separated; none were widowed	.6% were married; 70.0% were single; .3% were separated; .1% were widowed	
Type of high school	11.4% came from public school in Puerto Rico;	34.9% came from public school in Puerto Rico;	**

Continued, next page

Table 9 -- Continued

Item	Description by Sex		Level of Significance
	Male (<u>n</u> =485)	Female (<u>n</u> =1180)	
	17.1% came from private school in Puerto Rico; .2% came from public school in other country; .2% came from private school in other country; .2% approved the high school equivalency test	35.5% came from private school in Puerto Rico; .2% came from public school in other country; .1% came from private school in other country; .2% approved the high school equivalency test	
High school grade-point average (GPA)	.1% had 1.99 or less; 1.3% had 2.00-2.49; 5.4% had 2.50-2.99; 8.7% had 3.00-3.49; 13.6% had 3.50-4.00	.1% had 1.99 or less; .6% had 2.00-2.49; 4.0% had 2.50-2.99; 16.7% had 3.00-3.49; 49.5% had 3.50-4.00	***
Degree aspirations	8.8% wanted to attain a Bachelor degree; 7.9% a Master degree; 10.4% a Doctorate	23.6% wanted to attain a Bachelor degree; 21.4% a Master degree; 23.1% a Doctorate	

Continued, next page

Table 9 -- Continued

Item	Description by Sex		Level of Significance
	Male (<u>n</u> =485)	Female (<u>n</u> =1180)	
	degree; 1.8% a Postdoc- torate degree	degree; 2.9% a Postdoc- torate degree	
Career informa- tion in high school	13.3% re- ceived career informa- tion in high school; 15.6% did not receive career in- formation	31.0% re- ceived career informa- tion in high school; 39.6% did not receive career in- formation	
Sources of Finan- cial Aid			
Part-time or full- time job	6.9% working to finance their education	15.5% working to finance their education	
Personal savings	2.7% using personal savings	3.3% using their personal savings	***
Family assistance	13.0% received parents' help	30.7% received parents' help	
Scholar- ship from the govern- ment of P.R. - Supplemental Aid Program	4.9% recieving a scholar- ship	13.0% receiving a scholar- ship	

Continued, next page

Table 9 -- Continued

Item	Description by Sex		Level of Significance
	Male (<u>n</u> =485)	Female (<u>n</u> =1180)	
Pell grant	17.7% receiving a grant	49.9% receiving a grant	***
Students working to finance their college education	14.6% working to finance their college education; 14.1% did not work to finance their college education	35.4% working to finance their college education; 35.9% did not work to finance their college education	
Scores in the College Entrance Exam			
Verbal aptitude test	.5% had a score or 399 or less; 1.9% had 400-499; 9.4% had 500-599; 15.4% had 600-699; 2.5% had 700-800	.7% had a score or 399 or less; 2.9% had 400-499; 26.1% had 500-599; 37.7% had 600-699; 3.0% had 700-800	**
Mathema- tical aptitude test	.4% had score of 399 or less; 1.7% had 400-499; 6.9% had 500-599; 13.1% had	.3% had score of 399 or less; 4.6% had 400-599 23.7% had 500-599; 30.9% had	***

Continued, next page

Table 9 -- Continued

Item	Description by Sex		Level of Significance
	Male (<u>n</u> =485)	Female (<u>n</u> =1180)	
	600-699; 8.0% had	600-699; 10.3% had	
	700-800	700-800	
Spanish achieve- ment test	.3% had score of 399 or less; 2.6% had 400-499; 10.8% had 500-599; 14.1% had 600-699; 1.9% had 700-800	.5% had score of 399 or less; 3.3% had 400-499; 26.3% had 500-599; 35.4% had 600-699; 4.8% had 700-800	*
English achieve- ment test	1.1% had score of 399 or less; 4.6% had 400-499; 9.1% had 500-599; 11.1% had 600-699; 3.7% had 700-800	2.6% had score of 399 or less; 16.4% had 400-499; 26.1% had 500-599; 20.1% had 600-699; 5.3% had 700-800	
Mathema- tical achieve- ment test	.4% had score of 399 or less; 2.0% had 400-499; 8.0% had 500-599; 13.6% had 600-699; 5.7% had 700-800	.1% had score of 399 or less; 4.9% had 400-499; 25.8% had 500-599; 31.2% had 600-699; 8.1% had 700-800	***

Continued, next page

Table 9 -- Continued

Item	Description by Sex		Level of Significance
	Male (<u>n</u> =485)	Female (<u>n</u> =1180)	
Formal education of the father	2.2% had eight-grade or less; 1.5% had some high school years; 5.5% had a high school diploma; 5.4% had some college years; 14.7% had a college degree	4.7% had eight-grade or less; 3.4% had some high school years; 17.9% had a high school diploma; 16.5% had some college years; 28.1% had a college degree	***
Formal education of the mother	1.5% had eight-grade or less; 1.9% had some high school years; 6.1% had a high school diploma; 6.5% had some college years; 13.0% had a college degree	4.6% had eight-grade or less; 2.7% had some high school years; 16.6% had a high school diploma; 18.9% had some college years; 28.2% had a college degree	*
Work experience prior to college	21.8% had work experience; 7.2% did	49.9% had work experience; 21.1% did	*

Continued, next page

Table 9 -- Continued

Item	Description by Sex		Level of Significance
	Male (<u>n</u> =485)	Female (<u>n</u> =1180)	
	not have work experience	not have work experience	
If currently employed, number of hours working per week			**
40 hours or more	1.9% were working	2.6% were working	
20-39 hours	5.5% were working	9.4% were working	
1-19 hours	2.7% were working	6.8% were working	
Not working	19.0%	52.0%	

Note: * $p < .05$. ** $p < .01$. *** $p < .001$.

career information in high school, working to finance a college education, sources of financial aid (part-time or full-time job, personal savings, family assistance, Pell Grant, and scholarship from the government of Puerto Rico - Supplemental Aid Program), scores in the College Entrance Exam (Verbal aptitude, Mathematical aptitude, English achievement, Spanish achievement, Mathematical achievement), father's level of education, mother's level of education, and numbers of hours working per week (see Table 10). A detailed description including percentages and significance results is presented in Table 11.

It was found that the college of enrollment was directly related with high school grade performance, degree of aspirations, sources of financial aid, and scores in the College Entrance Exam (Verbal aptitude, Mathematical aptitude, English achievement, Spanish achievement, and Mathematical achievement) (See Table 12). A description including percentages and significant results is presented in Table 13.

Based on these results, it is important to point out the need to pay attention to the specific variables that showed a significant relationship among variables when designing programs, activities, and services for the general freshmen population.

Conclusion

In the light of the findings of this study, it can be appreciated that the differences among new students were

Table 10

Results of the Dependent Variable "Type of High School"
and the Independent Variables of the Study

Independent Variable	χ^2	Degree freedom	Significance
Sex (DC)	18.03	4	0.0012 **
Age (DC)	596.55	16	0.0000 ***
Birthplace (DC)	56.80	8	0.0000 ***
Marital status (DC)	73.19	12	0.0000 ***
High school grade point average (DC)	69.59	16	0.0000 ***
Degree aspirations (AB)	30.43	12	0.0024 **
Career information (AB)	28.73	4	0.0000 ***
Working to finance a college education (EP)	27.14	4	0.0000 ***
Sources of financial aid (FB)			
Part-time or full-time job	21.08	4	0.0003 ***
Personal savings	11.46	4	0.0218 *
Family assistance	65.28	4	0.0000 ***
Pell grant	188.77	4	0.0000 ***
Scholarship from the government of P.R. - Supplemental Aid Program	26.70	4	0.0000 ***

Continued, next page

Table 10 -- Continued

Independent Variable	X ²	Degree freedom	Significance
Scores in the College Entrance Exam (AB)			
Verbal aptitude test	51.02	16	0.0000 ***
Mathematical aptitude test	39.72	16	0.0008 ***
Spanish achievement test	64.18	16	0.0000 ***
English achievement test	146.14	16	0.0000 ***
Mathematical achievement test	77.85	16	0.0000 ***
Formal education of the father (AB)	159.50	16	0.0000 ***
Formal education of the mother (AB)	147.54	16	0.0000 ***
If currently employed, number of hours working per week (EP)	54.59		0.0000 ***

Note: DC= Demographic Characteristics; AB= Academic Background; FB= Financial Background; EP= Employment Pattern.

*p<.05. **p<.01. ***p<.001.

Table 11

Description and Significance Results of the Dependent Variable "Type of High School " and the Independent Variables

Item	Description by Type of High School		
	Public (<u>n</u> =766)	Private (<u>n</u> =870)	Level of Significance
Sex	11.4% were males; 34.9% were females	17.1% were males; 35.5% were females	**
Age	2.0% had 16 years or less; 43.5% had 17-18 years; .7% had 19-20 years; .1% had 21-22 years; .1% had 23 years or more	2.0% had 16 years or less; 49.8% had 17-18 years; .5% had 19-20 years; .1% had 21-22 years; none had 23 or more	***
Birthplace	42.7% were born in Puerto Rico; 2.9% were born in the United States; 1.0% were born in other country	48.6% were born in Puerto Rico; 1.6% were born in the United States; 2.2% were born in other country	***
Marital status	.3% were married; 45.7% were single; .2% were separated; none were widowed	5.0% were married; 51.8% were single; .3% were separated; 1.0% were widowed	***

Continued, next page

Table 11 -- Continued

Item	Description by Type of High School		
	Public (<u>n</u> =766)	Private (<u>n</u> =870)	Level of Significance
High School grade-point average (GPA)	1.0% had 1.99 or less; .5% had 2.00-2.49; 2.5% had 2.50-2.99; 10.6% had 3.00-3.49; 32.7% had 3.50-4.00	1.0% had 1.99 or less; 1.3% had 2.00-2.49; 2.5% had 2.50-2.99; 10.6% had 3.00-3.49; 32.7% had 3.50-4.00	***
Degree of aspirations	17.1% wanted to attain a Bachelor degree; 12.9% a Master degree; 14.7% a Doctorate degree; 1.6% a Postdoctorate degree	14.6% wanted to attain a Bachelor degree; 16.3% a Master degree; 18.6% a Doctorate degree; 3.0% a Postdoctorate degree	**
Career information in high school	18.0% received career information in high school; 28.2% did not receive career information	26.6% received career information in high school; 26.0% did not receive career information	***
Working to finance their college education	25.5% working to finance their college education; 20.9% did	23.3% working to finance their college education; 29.0% did	***

Continued, next page

Table 11 -- Continued

Item	Description by Type of High School		
	Public (<u>n</u> =766)	Private (<u>n</u> =870)	Level of Significance
	not work to finance their college education	not work to finance their college education	
Scores in the College Entrance Exam			
Verbal aptitude test	.6% had a score or 399 or less; 2.2% had 400- 499; 18.5% had 500- 599; 22.1% had 600- 699; 2.2% had 700- 800	.5% had a score or 399 or less; 2.4% had 400- 499; 16.8% had 500- 599; 30.2% had 600- 699; 3.1% had 700- 800	***
Mathema- tical aptitude test	.4% had score of 399 or less; 3.6% had 400- 499; 15.1% had 500- 599; 20.1% had 600- 699; 6.2% had 700- 800	.3% had score of 399 or less; 2.5% had 400- 599; 15.2% had 500- 599; 23.7% had 600- 699; 11.7% had 700- 800	***
Spanish achieve- ment test	.3% had score of 399 or less; 3.0% had 400- 499; 18.5%	.4% had score of 399 or less; 2.8% had 400- 499; 18.5%	***

Continued, next page

Table 11 -- Continued

Item	Description by Type of High School		
	Public (<u>n</u> =766)	Private (<u>n</u> =870)	Level of Significance
	had 500- 599; 21.8%	had 500- 599; 27.2%	
	had 600- 699; 1.9%	had 600- 699; 4.3%	
	had 700- 800	had 700- 800	
English achieve- ment test	2.4% had score of 399 or less; 13.7% had 400-499; 17.6% had 500-599; 9.2% had 600-699; 2.7% had 700-800	1.2% had score of 399 or less; 7.1% had 400-499; 17.5% had 500-599; 21.4% had 600-699; 5.9% had 700-800	***
Mathema- tical achieve- ment test	.4% had score of 399 or less; 3.8% had 400-499; 17.4% had 500-599; 18.5% had 600-699; 5.5% had 700-800	.1% had score of 399 or less; 2.6% had 400-499; 16.3% had 500-599; 26.2% had 600-699; 7.9% had 700-800	***
Sources of Finan- cial Aid			
Part-time or full- time job	10.7% working to finance their education	41.5% working to finance their education	***
Personal savings	2.2% using personal savings	3.7% using their personal savings	*

Continued, next page

Table 11 -- Continued

Item	Description by Type of High School		
	Public ($n=766$)	Private ($n=870$)	Level of Significance
Family assistance	15.5% received parents' help	24.7% received parents' help	***
Pell grant	39.1% receiving a grant	27.8% receiving a grant	***
Scholarship from the government of P.R.-Supplemental Aid Program	10.6% receiving a scholarship	7.2% receiving a scholarship	***
Formal education of the father	5.2% had eight-grade or less; 3.1% had some high school years; 14.8% had a high school diploma; 9.5% had some college years; 13.1% had a college degree	1.8% had eight-grade or less; 1.8% had some high school years; 8.4% had a high school diploma; 11.9% had some college years; 29.1% had a college degree	***
Formal education of the mother	4.8% had eight-grade or less; 2.8% had some high school years; 13.9%	1.2% had eight-grade or less; 1.8% had some high school years; 8.5%	***

Continued, next page

Table 11 -- Continued

Item	Description by Type of High School			Level of Significance
	Public ($n=766$)	Private ($n=870$)		
	had a high school diploma; 11.3% had some college years; 13.3% had a college degree	had a high school diploma; 14.0% had some college years; 27.1% had a college degree		
Work experience prior to college	34.1% had work experience; 11.9% did not have work experience	36.5% had work experience; 16.2% did not have work experience		
If currently employed, number of hours working per week				***
40 hours or more	1.6% were working	2.7% were working		
20-39 hours	5.9% were working	8.6% were working		
1-19 hours	3.8% were working	5.6% were working		
Not working	36.9%	33.6%		

Note: Percentages included only students that came from public and private schools in Puerto Rico. The subject marked all responses that applied.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 12

Results of the Dependent Variable "College of Enrollment"
and the Independent Variables of the Study

Independent Variable	X ²	Degree freedom	Significance
High school grade-point average (GPA) (AB)	242.98	32	0.0000 ***
Degree aspirations (AB)	259.24	24	0.0000 ***
Sources of financial aid (FB)			
Family assistance	19.15	8	0.0140 **
Scores in the College Entrance Exam (AB)			
Verbal aptitude test	170.90	32	0.0000 ***
Mathematical aptitude test	263.05	32	0.0000 ***
Spanish achievement test	140.15	32	0.0000 ***
English achievement test	94.09	32	0.0000 ***
Mathematical achievement test	299.24	32	0.0000 ***

Note: AB= Academic Background; FB= Financial Background
*p<.05. **p<.01. ***p<.001.

Table 13

Percentage of Freshman Students and Significance Results of the
Dependent Variable "College of Enrollment" and Independent Variables

Item	College of Enrollment									
	Educ.	N S	Bus. Adm.	Hum.	S S	Arch.	Pub. Com.	G S		
Sex										
Male	2.0	6.6	8.3	4.0	6.4	.4	.3	.5		
Female	6.8	17.1	19.0	9.7	14.3	1.1	2.7	.7		
Age										
16 years old or less	.3	.9	1.3	.6	.7	.1	.1	.1		
17-18 years old	7.8	22.5	25.6	12.6	19.8	1.5	2.9	1.1		
19-20 years old	.4	.1	.3	.3	.3	-	-	-		
21-22 years old	-	.1	-	.1	-	-	-	-		
23 years old or more	-	.1	.2	.1	-	.1	-	-		
Birthplace										
Puerto Rico	8.2	22.2	24.9	12.2	19.1	1.4	2.9	1.1		
United States	.1	1.3	1.1	1.1	1.1	.1	.1	-		
Other country	.4	.5	1.3	.4	.7	.1	.1	-		
Marital Status										
Married	.1	.2	.3	.1	.2	-	.1	.1		
Single	8.5	23.5	26.9	13.4	20.6	1.6	2.9	1.1		
Separated	-	.1	.1	.1	.1	-	-	-		
Type of high school										
Puerto Rico	5.0	10.8	12.3	6.2	9.9	.6	1.3	.4		
Public	3.7	12.9	14.5	7.1	10.8	.9	1.6	.7		
Private										

Continued, next page

Table 13--Continued

Item	College of Enrollment									
	Educ.	N S	Bus. Adm.	Hum.	S S	Arch.	Pub. Com.	G S		
United States										
Public	-	-	-	.2	.2	-	-	-	-	-
Private	-	.1	.2	-	-	.1	-	-	-	-
Other country	.1	.1	.3	.1	-	-	-	-	-	-
High school grade point average (GPA)***										
1.99 or less	-	-	.1	-	.1	-	.1	-	.1	-
2.00-2.49	.2	.1	.3	.8	.5	-	-	-	-	-
2.50-2.99	1.4	.3	1.8	2.2	3.6	.1	-	.3	-	.3
3.00-3.49	2.5	2.3	7.1	5.2	6.8	.3	.6	.3	.6	.3
3.50-4.00	4.7	21.2	17.8	5.6	9.7	1.2	2.4	.5	2.4	.5
Degree aspirations***										
Bachelor	3.0	4.7	13.1	5.6	4.8	.2	.8	.3	.8	.3
Master	3.0	3.9	9.9	4.3	6.1	1.1	1.6	.5	1.6	.5
Doctorate	2.4	11.9	3.8	3.5	9.4	.3	.5	.4	.5	.4
Post doctorate	.3	2.8	.7	.4	.6	-	-	-	-	-
Information about career planning										
Yes	3.5	10.8	13.8	5.5	8.9	.7	1.6	.3	1.6	.3
No	5.2	12.8	13.6	8.3	11.8	.9	1.5	.8	1.5	.8

Table 13--Continued

Item	College of Enrollment									
	Educ.	N S	Bus. Adm.	Hum.	S S	Arch.	Pub. Com.	G S		
Sources of financial aid										
Part-time or full-time job	2.5	4.9	6.3	3.2	4.2	.2	.6	.3		
Personal savings	.7	1.9	1.5	.7	.9	.1	.1	.1		
Family assistance*	3.0	11.7	11.6	6.3	8.1	1.1	1.6	.5		
Pell Grant	6.6	15.9	18.6	8.6	14.3	.9	1.9	.6		
Scholarship from the government of Puerto Rico Supplemental Aid Program	1.5	5.5	4.1	1.8	3.9	.3	.7	.2		
Father's level of education										
Eight grade or less	1.0	1.0	2.4	.8	1.4	-	.3	-		
Some high school years	.3	1.2	1.2	.7	1.1	-	.3	.1		
High school graduate	2.1	5.1	6.8	3.4	5.7	.2	.5	.3		
Some college years	1.6	5.7	5.7	2.7	4.1	.5	1.0	.3		
College graduate	3.4	11.1	11.2	6.2	8.2	.9	1.2	.4		
Mother's level of education										
Eight grade or less	.7	1.3	2.3	.6	.9	-	.2	.1		
Some high school years	.5	.9	1.2	.4	1.0	.1	.2	.1		
High school graduate	1.9	4.9	6.8	3.0	5.4	.2	.5	.2		
Some college years	2.5	6.4	6.6	3.7	5.6	.2	.6	.3		
College graduate	3.1	10.4	10.3	5.8	8.0	1.1	1.5	.5		

Continued, next page

Table 13--Continued

Item	College of Enrollment									
	Educ.	N S	Bus. Adm.	Hum.	S S	Arch.	Pub. Com.	G S		
Work experience										
Yes	6.9	16.3	19.6	10.1	15.4	1.0	2.5	.7		
No	2.7	7.2	7.8	3.6	5.4	.6	.6	.4		
Currently working to finance their college education	5.3	10.8	14.0	6.1	10.9	.6	1.7	.7		
Scores in the College Entrance Exam										
Verbal Aptitude***										
399 or less	.3	-	.1	.6	.1	-	-	-		
400-499	.9	.4	1.0	.9	1.7	-	-	-		
500-599	4.0	5.1	9.3	6.4	10.0	.2	.7	.3		
600-699	3.2	17.4	15.5	4.9	7.5	1.5	2.2	.5		
700-800	.2	1.9	1.4	.4	.9	-	.1	.1		
English Achievement***										
399 or less	.8	-	.9	.6	1.3	-	.1	-		
400-499	2.7	3.4	5.9	3.1	5.2	.3	.2	.1		
500-599	3.0	8.9	9.8	5.5	6.5	.4	1.5	.2		
600-699	1.7	9.8	8.8	3.6	5.2	.8	.9	.6		
700-800	.4	3.2	2.0	.9	1.7	.1	.4	-		

Continued, next page

Table 13--Continued

Item	College of Enrollment									
	Educ.	N S	Bus. Adm.	Hum.	S S	Arch.	Pub. Com.	G S		
Mathematical Aptitude***										
399-499	.1	.1	.1	.1	.2	-	-	-		
400-499	1.0	.2	1.0	2.6	1.5	-	-	-		
500-599	3.7	3.3	7.2	5.7	8.7	.3	1.0	.3		
600-699	3.0	13.4	13.5	4.4	7.9	.7	1.5	.5		
700-800	.7	8.0	5.7	.6	1.6	.7	.6	.1		
Spanish Achievement***										
399 or less	.2	.1	-	.4	.1	-	-	-		
400-499	.8	.3	1.8	1.6	1.6	-	-	-		
500-599	4.1	5.9	9.8	6.2	9.4	.4	1.0	.4		
600-699	3.2	15.8	14.2	4.8	7.9	1.3	1.9	.4		
700-800	.1	2.8	1.4	.8	.8	-	.3	-		
Mathematical Achievement***										
399 or less	-	-	.1	.1	.2	-	-	-		
400-499	1.1	.1	.7	3.3	1.8	-	.1	-		
500-599	4.4	4.0	9.7	6.0	8.6	.2	1.0	.2		
600-699	2.5	13.5	13.4	3.7	8.1	1.0	1.8	.6		
700-800	.3	7.1	3.5	.7	1.3	.4	.3	.1		
Currently working to finance their college education										
Yes	5.3	10.8	14.0	6.1	10.9	.6	1.7	.7		
No	3.3	12.6	13.2	7.8	10.2	1.0	1.5	.4		

Continued, next page

Table 13--Continued

Item	College of Enrollment									
	Educ.	N S	Bus. Adm.	Hum.	S S	Arch.	Pub. Com.	G S		
If currently working, working hours per week										
40 hours or more	.4	1.1	1.5	.7	1.0	-	-	-		
20-39 hours per week	1.3	3.8	4.6	2.1	3.1	-	.2	.2		
1-19 hours per week	.6	2.1	2.6	1.5	2.3	.3	.2	.2		
Not working	6.3	17.2	20.2	8.3	14.5	1.3	2.1	.7		

Note: Ed.= Education; N.S.= Natural Sciences; Bus. Ad.= Business Administration; Hum.= Humanities; S.S.= Social Sciences; Arch.= Architecture; Pub. Com.= Public Communication; G.S.= General Studies.

*p<.05. **p<.01. ***p<.001.

not pronounced. First year students enrolled at the UPR-RP Campus were most likely to be females. Entering students were typically younger, 17 to 18 years of age, born in Puerto Rico, and single.

Students' academic background involved a high school diploma with a grade point average (GPA) within the range of 3.00-4.00. Most reported that their scores in the Verbal Reasoning Test, Mathematical Aptitude Test, English Achievement Test, Spanish Achievement Test, and Mathematical Achievement Test of the College Entrance Exam were in the range between 600 to 800. Most students had a combined grade point average and standardized test score which places them among the upper-one third of Puerto Rican school graduates. The majority of students were studying on a full-time basis and were enrolled in programs of study leading towards a bachelor's degree, although many of them entered the university to obtain a doctorate degree. Both their parents had completed college degrees or at least some college years. Most students were admitted to the Colleges of Business Administration, Natural Sciences, and Social Sciences. Although a vast majority of the students reported that they have worked prior to college entrance, most of them were not employed at the time of their admission.

Taken as a group, these data indicate that new students were very homogenous (statistically speaking). Because of this homogeneity, it is important that

university administrators, orientation planners, and policy makers understand the characteristics as well as the needs of freshmen attending the University for the first time.

In general terms, the needs reported by freshmen students enrolled at the UPR-RP Campus were similar to those of freshmen matriculated in American colleges and universities. The needs data indicates that academic-career related issues were perceived with the highest priority by entering students at the UPR-RP Campus. These findings are consistent with those of previous studies (Palladino & Tryon, 1978; Sagaria, Higginson, & White, 1980; Scott & Williamson, 1986; Staik & Dickman, 1988). Most students at the UPR-RP Campus indicated that their most urgent need was obtaining information about academic offerings, with the second most common response being the need to learn more about academic events and services.

All other response choices had to do with academic performance, career plans, academic skills, and campus life. Females reported stronger needs than males in all the needs categories. Female students at the UPR-RP Campus seem to be more concerned than males in all aspects of their lives. These findings are similar to those of previous studies (Harry & Anttonen, 1985; Palladino & Tryon, 1978).

Freshman students coming from public schools in Puerto Rico indicated higher needs than those coming from private schools in Puerto Rico in the academic, personal, and career areas, in that order.

Finally, differences in needs were reported by students enrolled in the Colleges of Business Administration, Natural Sciences, and Social Sciences. Freshmen in those Colleges reported stronger needs in the academic-career areas.

Summary

Chapter IV centered on an analysis of the data, and interpretation of the findings. Chapter V will present the conclusions and recommendations of the study.

C H A P T E R V

CONCLUSIONS AND RECOMMENDATIONS

Chapter V presents a summary of the study, some recommendations drawn from the findings, and suggestions for further research.

Summary

Two general patterns are evident from the self-report survey conducted at the University of Puerto Rico, Rio Piedras Campus. First, UPR-RP freshmen seem more alike (statistically speaking) than they are different. Demographic variations among them tend to be few in number and weak in magnitude. Second, the basic needs of entering students are, in general terms, similar to those of incoming freshmen enrolled in American colleges and universities, despite the demographic profile of the freshman population enrolled on the campus. Freshmen students matriculated at the UPR-RP Campus appeared concerned primarily with academic-career issues rather than personal matters. This finding is consistent with previous studies (Sagaria, Higginson, & White, 1980; Koplick & DeVito, 1986). These findings seem to confirm Tinto's assertion that academic matters are more important for freshmen than personal concerns.

The kinds of needs that have primacy for freshmen within the academic area include a concern for learning

more about academic events, university services, and facilities; adjusting to different teachers' expectations and demands; feeling comfortable when speaking up in class; preparing oral and written reports; developing note-taking skills; learning to use the library; developing effective study habits; improving concentration and memory skills; preparing a study plan; and learning to control anxiety regarding test-taking and academic performance. All these needs reflect that entering students at the UPR-RP Campus are really concerned with campus life, curriculum and teaching procedures, academic skills acquisition, study skills, and academic performance. These concerns are intrinsically related to Chickering's (1969) task, achieving competence, establishing identity, and clarifying purpose.

Career needs also preoccupy freshman students. In fact, concerns reported within this category include obtaining information about academic offerings; knowledge about occupations in more demand on the job-market; information about a variety of career areas; understanding their interests, aptitudes, and abilities; identifying their strengths, competencies, and personal limitations; making appropriate decisions; identifying values and how they influence work; and understanding their motivation and attitude toward work. These needs reflect that freshmen are concerned with developing a set of beliefs and competencies, selecting a career and lifestyle,

experiencing self-assessment and analysis, studying careers that improve their job chances, and making decisions regarding their career plans. The developmental tasks, becoming autonomous, achieving competence, and clarifying purpose (Chickering, 1969) as well as achieving success by working toward the fulfillment of educational and career goals (Medalie, 1981) are also intrinsically related to these concerns.

Finally, two related personal needs are important for entering students, budgeting and managing money wisely; and learning to express anger in acceptable ways. This means that students have to deal with meeting and getting along with different people, and establishing new relationships and patterns of behavior. These concerns are intrinsically related to the following tasks, managing emotions and establishing identity (Chickering, 1969).

Female students at the UPR-RP Campus seem to be worried of all aspects of their lives. Females reported stronger needs than males in the academic, career, and personal areas. In the academic area, students are preoccupied with campus life, academic performance, study skills, curriculum and teaching procedures, and academic skills acquisition. In the career area, females are concerned with selecting a career and lifestyle, experiencing self-assessment and analysis, making decisions regarding their career options, and improving their job-chances. Finally, in the personal area, female

students are worried about establishing friendships and new relationships, coping with depression and loneliness, developing independence, managing emotions, adopting new patterns of behavior, and learning problem-solving techniques. Students coming from public schools are more concerned with academic, career, and personal matters than those coming from private schools. Specifically, academic issues have primacy for a vast majority of students. The kinds of concerns that freshmen coming from public schools listed indicate that they are worried about campus life, curriculum and teaching procedures, academic skills acquisition, study skills development, academic performance, clarifying interests, educational and career options, surviving financially, and handling stress and anxiety.

Finally, students enrolled in the Colleges of Business Administration, Natural Sciences, and Social Sciences are more concerned than those in the Colleges of Humanities, Public Communication, Architecture, General Studies, and Education. In general terms, academic-career needs have primacy for students enrolled in those three Colleges. These students are concerned primarily with curriculum and teaching procedures, academic performance, study skills, adjustment to college work, career plans, finances, sexual development, friendships, and family matters.

All of these needs are intrinsically related to making an effective transition to a new environment. Students' inability to cope with these problems and needs that arise as they attempt to integrate into the UPR-RP Campus, will impinge upon their academic performance and persistence in college.

Recommendations

Based on the findings of this study, the University of Puerto Rico must make the following policy and programmatic changes to address the specific needs of their freshman students:

1. Develop a clear mission statement and definition of the Institution's orientation programs for freshmen. The mission of these programs should be based on the University's mission which clearly declares a commitment to the comprehensive development of its students and the concepts of human development, specially developmental tasks applied within the college setting.

2. Restructure its orientation services and programs. The needs areas identified in this study should provide a framework for designing the content for orientation and counseling experiences and activities for first-time college students. Thus, the orientation content should focus first, on academic performance and second, on personal development.

3. The University of Puerto Rico should commit institutional resources to enhance freshman success. Adequate fiscal support and recognition should be provided to existing student-support services, particularly orientation and counseling programs.

4. The Freshman Year Experience Program should become an essential element in the University of Puerto Rico's enrollment management plan and strategic planning function.

5. The Institution should increase faculty involvement in the education of freshmen, particularly outside the classroom.

6. Student retention and academic performance should be targeted as an area of emphasis by the UPR-RP Campus.

7. Orientation should provide entering students the opportunity to understand and acquire the knowledge necessary for successful integration into the university setting.

8. The intention of the University should be to foster an academic focus in each of these freshmen so that they can matriculate successfully into the sophomore year.

9. The University of Puerto Rico should develop a Freshman Year Experience Program within the Counseling Center for Student Development (CCSD), a division of the Deanship of Student Affairs. This program should begin as a pilot program specially designed to promote freshman

success and retention. The program should address entering students' most urgent needs by first, focusing on academic-career related matters and second, on personal-social concerns. To accomplish this task, it should be based on a student development model as well as identified needs of freshmen for the delivery of services. Services should be delivered pro-actively rather than in a passive manner. Four main areas should be addressed by the program to support entering students' success in the University: help students become integrated; assist them through the transition process; help freshmen establish their academic and career goals; and support their success in the classroom. Specifically, the program should provide a more structured orientation and academic process through the first year of college, particularly the first semester of classes, and deliver a set of experiences and activities designed to provide the support needed by students in order to be academically successful. Participation of peer counselors to assist in academic and social orientation should be considered. The program should develop a broad range of delivery modes: topic-linked courses, seminars; workshops; weekly discussion sessions with upperclassmen and faculty; special orientation sessions; group participation in campus events; pre-enrollment and pre-admission programs; and faculty meetings in informal sessions outside the classroom.

10. The Freshman Year Experience Program should establish courses directed toward developing competence and increasing academic and social skills that lead to the knowledge that freshmen are capable. The courses should be organized around the following topics: study habits; study plan; concentration skills; stress management; academic skills; test-taking; note-taking skills; preparation of oral and written reports; information about campus facilities; academic offerings and resources; selection of a career; job-market opportunities; decision making skills; motivation; financial management; career planning; and handling emotions. A specialized course to help freshmen clarify their interests, values, and skills and to gather accurate academic and career information should be developed. To help students better understand college operations, academic structure, norms, policies and procedures, the counseling staff should design a required six-weeks, one credit orientation course as part of the program's proactive approach to help students succeed academically and socially. It should develop a course to assist students in the development of skills for successful decision making. This course must concentrate first, on self-exploration and then, on self-external career options. Self-exploration as an early step of career decision making must be conducted through self-analysis involving values, preferences, expectations, and lifestyle, educational programming opportunities in

residence halls provide a perfect vehicle for student self-exploration. Peer counselors can conduct career exploration workshops in the residence halls.

11. The program should develop workshops, group-sessions, and specialized skill improvement workshops in areas such as note-taking, test taking, study skills, career planning, financial management, decision making, problem solving, and time management should be offered to freshmen. A group with a more general focus for students interested in career development, human potential, and study skills should also be organized. Likewise, small counseling support groups should be developed to help freshmen deal with anxiety and stress. Sex differences in needs reported by freshmen imply that outreach programs should be developed for this group. Group-sessions, workshops, seminars, or conferences exclusively for females should be conducted to address specific issues such as study habits, academic skills, teaching styles, campus life, career planning, decision-making skills, job-market opportunities, problem-solving skills, stress management, depression and loneliness, and financial management. Both individual and group counseling programs on drug abuse, weight reduction, and sexual development should be provided to freshmen as well as females and males.

12. As part of the pre-enrollment activities of the program, students should attend a three-days college

orientation sessions prior to enrollment. The session should take place on campus during July and should include an extensive program of activities for both incoming freshmen and their parents. Programmatically, this orientation will include small group sessions in which the student will be introduced to academic policies, procedures, and requirements within individual programs and college affiliations. It will include also academic advisement and the development of an academic schedule for the initial semester, with the assistance of counselors, faculty, and specially trained peer counselors.

13. The Freshman Year Experience Program should create a supportive environment for students by providing increasing opportunities for interactions with faculty, administrators, staff, and peers, helping in this manner to ease the transition from high school to the University. This can be accomplished through small-group discussions and informal presentations about various academic offerings and opportunities that will help students perceive faculty as being more accessible.

14. The program should emphasize outreach programs. Needs and concerns can be addressed through a comprehensive array of outreach programs. Three outreach programs should be implemented to better serve the needs of freshmen, which include counseling services with Housing, Student Government, and the Athletic Department. The program should provide opportunities to help new

students in making decisions which positively influence the development of decision-making skills. A logical approach to assist freshmen develop these skills is to provide skill-development programming in the residential halls. A self-exploration program can be developed that may include: choosing academic major, enhancing interpersonal relationships, deciding lifestyles issues, developing meaningful interaction with others to build a support system, and developing leadership skills. Providing program offerings on decision making and career planning in the residence halls is an important strategy to address the decision-making needs of entering students. Residential peer counselors should be used to facilitate an opportunity for decision making, academic skill development, and life planning.

15. The Freshman Year Experience Program should connect academic affairs and student affairs staff in an effort to support academic success and retention of first-time college students. It should develop adequate communication networks within the university community to insure widespread knowledge of the services offered by the program. Counseling staff within this program should develop programmatic "bridges" with faculty and staff to meet the multiple needs of first-time college students. It should involve faculty, staff, and students' families in ways that encourage freshmen to know them personally and seek their advise and support voluntarily.

16. Pre-admission programs should be developed to orient prospective students and their families about the University, its mission, and academic offerings. Strategies for delivery should include campus visitations, publications, printed materials, open houses, tours of the campus, and summer youth camps or seminars. Upper level students should be trained to serve as hosts, presenters, and advisers as part of this pre-enrollment activities. These programs will help prospective students to obtain accurate information about academic offerings and requirements, library facilities, and campus life.

17. An evaluation should be conducted each semester to determine whether the orientation and counseling activities implemented through this program are truly meeting student's needs. This follow-up should be conducted at least six months after the new activities are incorporated into the Freshman Year Experience Program. A final review of the program should take place following the completion of the third year of operation.

18. Along with the traditional services such as personal counseling, career counseling, and crisis intervention, the program should develop special programs and services to deal with high-risk students, students with undeclared majors and/or unclear career goals, and disabled students.

19. Counselors and faculty should attend a workshop on the freshman year experience at the University of

South Carolina to get acquainted with University 101 program sponsored by that institution. This program emphasizes the development of effective study skills, self-awareness, and establishment of appropriate links between student needs and the resources available.

20. The University of Puerto Rico should establish an academic advising program which provides freshmen accurate and specific academic information and accessibility to advisers. This program should advise potential students on admission criteria, financial aid, and available scholarships. It should tailor admissions information to tell freshmen what they need to know to succeed academically. It should assign a personal adviser to each new student to assist in scheduling courses, learning about campus facilities and resources, understanding institutional norms, and getting integrated into campus life. Advisers should be equipped through staff development to assist freshmen. The advising relationship should be one organized around academic matters rather than personal concerns. Careful attention should be given to orienting students to existing academic support services, including the computer lab, the library, the math lab, and tutoring services.

21. Student research and tracking must be upgraded to involve comprehensive, integrated data base that provides responsive advisement to students, identify high

attrition courses, analyze retention trends, and study the freshman population.

22. An information system which channels information to all parts of the Rio Piedras Campus regarding the nature, intensity and frequency of entering student's needs from a central location, the Office of Academic Planning, a division of the Deanship of Academic Affairs, should be established.

23. The general freshman profile and other specific profiles generated from this study should be distributed to colleges, departments, counselors, policy makers, and academic advisers, so it can become part of the advising and counseling process as soon as the student enters the Institution.

To test the validity of these findings, colleges and universities in Puerto Rico should conduct further research. The University of Puerto Rico as well as other higher education institutions, must remember that the secret of successful retention "lies in the willingness of institutions to involve themselves in the social and intellectual development of their students. That involvement and the commitment to students it reflects is the primary source of student commitment to the institution and their involvement in their own learning" (Tinto, 1987, p.7).

APPENDIX A

PARTICIPANT CONSENT FORM
(ENGLISH AND SPANISH VERSIONS)

PARTICIPANT CONSENT FORM

Dear student:

-----My name is Myrna I. Vélez. I am currently working on my doctoral dissertation and this survey is part of it. The purpose of the questionnaire is to assess your needs in the personal, academic, and vocational areas. The results of this investigation will be used in setting priorities and planning the counseling programs and other services for freshman students.

-----As a freshmen you have been selected to be part of this study. You have the right to withdraw from part of all of the study at any time, or to review the results. Your participation is voluntary. Your decision to participate or not in the study is in no way prejudicial to you.

-----You do not have to write your name in the survey. Your responses are strictly confidential. Your written consent to participate in the study under the conditions described is needed. If you agree to participate in this study under the above-mentioned conditions, please sign this consent form before completing the questionnaire and hand it to the researcher.

Date

Participant's Signature

HOJA DE CONSENTIMIENTO
PARA EL ESTUDIO DE NECESIDADES DE ORIENTACION DE LOS
ESTUDIANTES DE PRIMER AÑO 1993-94

Estimado (a) estudiante:

El propósito de este Cuestionario es medir las necesidades personales, académicas y vocacionales de los estudiantes de nuevo ingreso. Como estudiante de primer año, tú has sido escogido(a) para participar en este estudio. Tu participación es completamente voluntaria y puedes dejar de llenar el cuestionario si alguna de las preguntas te causa incomodidad. No es necesario que escribas tu nombre para así garantizar la estricta confidencialidad de cada estudiante.

Si en el proceso de llenar el Cuestionario identificas una necesidad para la que deseas ayuda, puedes comunicarte con la Sra. Myrna I. Vélez en el Centro de Orientación para el Desarrollo Estudiantil o llamar a la extensión 5672. Haremos todo lo posible para ayudarte.

Si estás dispuesto(a) a participar, firma al final de la hoja.

Firma

Fecha

APPENDIX B
QUESTIONNAIRE
(ENGLISH AND SPANISH VERSIONS)

SURVEY OF THE COUNSELING NEEDS OF FRESHMAN STUDENTS
AT THE UNIVERSITY OF PUERTO RICO, RIO PIEDRAS CAMPUS
ACADEMIC YEAR 1993-94

Dear student:

The purpose of this questionnaire is to assess your needs in the personal, academic, and vocational areas. As a freshman student, you have been selected to be part of this study. The results of this investigation will be used in setting priorities and planning the counseling programs and other services most needed by freshman students.

This survey should only take a few minutes to answer. All of your responses are completely confidential. Thank you for participating in this study. Please read the instructions carefully.

I GENERAL INSTRUCTIONS:

- Do not write your name or your student identification number in the IBM Answer Sheet. In this form, the researcher can guarantee confidentiality and thus, protect your identity.
- Write in the space provided for your identification number, **the code of the academic program** in which you were admitted. After writing your **program code**, please darken the corresponding ovals. Use only a num. 2 pencil.

Example: 0428

<u>0</u>	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>4</u>	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>2</u>	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>8</u>	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

WHAT FOLLOWS IS A SET OF QUESTIONS. CHOOSE THE BEST RESPONSE AND DARKEN THE CORRESPONDING OVAL IN THE IBM ANSWER SHEET.

1. Sex

- a. Male
 b. Female

2. Age

- a. 16 years old or less
- b. 17-18 years old
- c. 19-20 years old
- d. 21-22 years old
- e. 23 years old or more

3. Birthplace

- a. Puerto Rico
- b. United States
- c. Other country

4. Marital Status

- a. Married
- b. Single
- c. Separated
- d. Widow

5. Indicate your high school preparation

- a. Public school in Puerto Rico
- b. Private school in Puerto Rico
- c. Public school in other country
- d. Private school in other country
- e. High school equivalency exam

6. Indicate your high school grade point average

- a. 1.99 or less
- b. 2.00-2.49
- c. 2.50-2.99
- d. 3.00-3.49
- e. 3.50-4.00

7. Indicate the degree you want to attain

- a. Bachelor
- b. Master
- c. Doctorate
- d. Post-doctorate

8. Did you receive any information about career planning in high school?

- a. Yes
- b. No

9. How are you paying for your college education? Mark all that apply.

- a. Part-time or full-time job
- b. Personal savings
- c. Family assistance, including spouse
- d. Federal assistance, from the United States (Pell Grant; BEOG)
- e. Scholarship from the government of Puerto Rico or Supplemental Aid Program

10. If you receive any kind of financial aid, will you still need to work to pay for your college education?

- a. Yes
- b. No

Please indicate your scores in the College Entrance Exam in:

<u>EXAM</u>	<u>SCORES</u>				
	<u>399 OR LESS</u>	<u>400-499</u>	<u>500-599</u>	<u>600-699</u>	<u>700-800</u>
11. Verbal Reasoning Test	(A)	(B)	(C)	(D)	(E)
12. Mathematical Aptitude Test	(A)	(B)	(C)	(D)	(E)
13. English Achievement Test	(A)	(B)	(C)	(D)	(E)
14. Spanish Achievement Test	(A)	(B)	(C)	(D)	(E)
15. Mathematical Achievement Test	(A)	(B)	(C)	(D)	(E)

16. How much formal education did your father obtain?

- a. Educational level Eight-grade or less
- b. Some high school years
- c. High school graduate
- d. Some college years
- e. College graduate

17. How much formal education did your mother obtain?

- a. Eight-grade or less
- b. Some high school years
- c. High school graduate
- d. Some college years
- e. College graduate

18. Have you ever work in your life?

- a. Yes
- b. No

19. If your are currently employed, how many hours on average do you work in a week?

- a. 40 hours or more
- b. 20-39 hours
- c. 1-19 hours
- d. Not working

II. INSTRUCTIONS

FOLLOWING IS A LIST OF NEEDS ITEMS. CHOOSE THE RESPONSE THAT BEST DESCRIBES YOUR NEED LEVEL AND DARKEN THE CORRESPONDING OVAL IN THE IBM ANSWER SHEET.

Need level

- A Strong need
- B Moderate need
- C Weak need
- D No need

<u>Personal Needs</u>	Strong Need	Moderate Need	Weak Need	No Need
20. To budget and spend my money wisely.	A	B	C	D
21. To improve my self-esteem.	A	B	C	D
22. To learn how to handle stress and anxiety in my life.	A	B	C	D
23. To develop better relationships with others.	A	B	C	D
24. To learn how to accept criticism from others without being upset.	A	B	C	D

<u>Personal Needs</u>	Strong Need	Moderate Need	Weak Need	No Need
25. To develop a healthier life-style.	A	B	C	D
26. To learn leadership skills.	A	B	C	D
27. To be able to cope better with depression.	A	B	C	D
28. To become a better listener.	A	B	C	D
29. To improve my relationships with my dating/marriage partner.	A	B	C	D
30. To understand better the meaning of love and intimacy.	A	B	C	D
31. To be more comfortable in expressing my feelings and thoughts sincerely.	A	B	C	D
32. To understand and deal with feelings of jealousy.	A	B	C	D
33. To learn how to express anger in acceptable ways.	A	B	C	D
34. To understand myself better.	A	B	C	D
35. To learn how to cope with a broken relationship.	A	B	C	D
36. To understand better my sexuality.	A	B	C	D
37. To learn how to cope with loneliness.	A	B	C	D
38. To develop independence.	A	B	C	D
39. To learn how to control my weight.	A	B	C	D
40. To explore my feelings about death and dying, specially of parents and friends.	A	B	C	D

<u>Personal Needs</u>	Strong Need	Moderate Need	Weak Need	No Need
41. To know more about birth control methods.	A	B	C	D
42. To improve my relationship with my parents.	A	B	C	D
43. To obtain more information about the use/abuse of drugs and alcohol.	A	B	C	D
44. To learn how to handle thoughts of suicide.	A	B	C	D
45. To learn how to cope with my parents' divorce.	A	B	C	D
46. To learn how to solve problems.	A	B	C	D
47. To know more about aids and how to prevent this sexually-transmitted disease.	A	B	C	D
48. To learn how to make decisions independently of my parents' influence.	A	B	C	D
49. To learn to manage sickness in the family.	A	B	C	D
<u>Academic Needs</u>				
50. To develop more effective study habits.	A	B	C	D
51. To learn how to prepare a study plan.	A	B	C	D
52. To improve my reading skills.	A	B	C	D
53. To feel less anxious when taking a test.	A	B	C	D
54. To feel comfortable when speaking up in class.	A	B	C	D
55. To develop notetaking skills.	A	B	C	D

<u>Academic Needs</u>	Strong Need	Moderate Need	Weak Need	No Need
56. To learn how to adjust to different teachers' expectations and demands.	A	B	C	D
57. To improve my concentration and memory skills.	A	B	C	D
58. To learn how to use the library.	A	B	C	D
59. To improve my mathematical skills.	A	B	C	D
60. To learn how to prepare oral reports.	A	B	C	D
61. To learn how to prepare written reports.	A	B	C	D
62. To learn more about academic events, university services, and facilities.	A	B	C	D
63. To learn to control my anxiety regarding my academic performance.	A	B	C	D
64. To participate in community services projects and activities.	A	B	C	D
<u>Vocational Needs</u>	Strong Need	Moderate Need	Weak Need	No Need
65. To identify my interests, aptitudes, and abilities and how they relate to my educational/occupational alternatives.	A	B	C	D
66. To obtain information about a variety of career areas.	A	B	C	D
67. To identify and determine my values and how they influence my work.	A	B	C	D

<u>Vocational Needs</u>	Strong Need	Moderate Need	Weak Need	No Need
68. To develop my decision making skills.	A	B	C	D
69. To know the occupations of more demand in the job-market.	A	B	C	D
70. To obtain information about academic offerings, requirements, and number of years required to complete them.	A	B	C	D
71. To choose a career.	A	B	C	D
72. To identify and understand better my motivations and attitudes toward work.	A	B	C	D
73. To know my strengths, competencies, and personal limitations.	A	B	C	D

**CUESTIONARIO DE NECESIDADES DE ORIENTACION DE LOS ESTUDIANTES
DE PRIMER AÑO 1993-94**

Estimado(a) estudiante:

El propósito de este cuestionario es medir las necesidades personales, académicas y vocacionales de los estudiantes de nuevo ingreso. Como estudiante de primer año tú has sido escogido(a) para participar en este estudio. Los resultados de esta investigación ayudarán al desarrollo de nuevos programas y políticas que facilitarán la transición y ajuste del estudiante a su nuevo ambiente universitario.

Gracias por tu disposición en participar y hacer posible que esta investigación doctoral pueda realizarse.

I. INSTRUCCIONES GENERALES:

- No escribas tu nombre ni tu número de estudiante en la Hoja de Contestaciones. Esta información no es necesaria. De esta forma podemos garantizar la estricta confidencialidad para así proteger a cada estudiante.
- Favor de indicar el **Código del Programa Académico** al que fuiste admitido(a).

En el espacio provisto para el número de estudiante en la Hoja de Contestaciones escribe el **Código del Programa Académico** al que fuiste admitido(a) para estudiar en el Recinto de Río Piedras. Utiliza la tabla de códigos que se te entregará. El código es un número de cuatro dígitos que aparece en la columna izquierda de la tabla. Además de escribir el código en la columna izquierda (de arriba hacia abajo) ennegrece los óvalos correspondientes. Favor de utilizar un lápiz número 2.

Ejemplo: 0428

<u>0</u>	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>4</u>	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>2</u>	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
<u>8</u>	(0)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)

A continuación aparecen unas preguntas. Selecciona la contestación que creas más indicada y ennegrece el óvalo correspondiente en la Hoja de Contestaciones.

CONTESTA LAS PREGUNTAS SEGUN SE TE PIDE EN CADA UNA DE ESTAS

1. Sexo

- a. Masculino
- b. Femenino

2. Edad

- a. 16 años o menos
- b. 17 - 18 años
- c. 19 - 20 años
- d. 21 - 22 años
- e. 23 años o más

3. Lugar de Nacimiento

- a. Puerto Rico
- b. Estados Unidos
- c. Otro país

4. Estado Civil

- a. Casado(a)
- b. Soltero(a)
- c. Separado(a)
- d. Viudo(a)

5. Tipo de Escuela de Procedencia

- a. Pública en Puerto Rico
- b. Privada en Puerto Rico
- c. Pública fuera de Puerto Rico
- d. Privada fuera de Puerto Rico
- e. Examen de equivalencia de cuarto año

6. Indica tu promedio académico de escuela superior

- a. 1.99 o menos
- b. 2.00 - 2.49
- c. 2.50 - 2.99
- d. 3.00 - 3.49
- e. 3.50 - 4.00

7. Indica el grado académico que piensas alcanzar

- a. Bachillerato
- b. Maestría
- c. Doctorado
- d. Post-doctorado

8. Señala si recibiste en la escuela superior información sobre la carrera que deseas estudiar en la universidad.

- a. Si
 b. No

9. Selecciona la(s) fuente(s) principal(es) que piensas utilizar para sufragar tus gastos de estudios universitarios

- a. Trabajo
 b. Ahorros personales
 c. Ayudas de padres o familiares
 d. Beca Federal (Pell Grant; BEOG)
 e. Beca Estatal Legislativa y/o Programa de Ayuda Suplementaria (PAS)

10. Si recibieses ayuda económica, ¿tendrías que suplementar dicha ayuda trabajando?

- a. Si
 b. No

Indica cuales fueron tus puntuaciones en el College Entrance Examination Board (CEEB) en la parte de:

	399 ó menos	400-499	500-599	600-699	700-800
11. Aptitud Verbal	(A)	(B)	(C)	(D)	(E)
12. Aptitud Mat.	(A)	(B)	(C)	(D)	(E)
13. Aprov. Inglés	(A)	(B)	(C)	(D)	(E)
14. Aprov. Español	(A)	(B)	(C)	(D)	(E)
15. Aprov. Mat.	(A)	(B)	(C)	(D)	(E)

16. ¿Cuánta educación formal tiene tu padre?

- a. Octavo grado o menos
 b. Algunos años de escuela superior
 c. Diploma de 4to año de escuela superior
 d. Algunos años de universidad o colegio
 e. Se graduó de bachillerato

17. ¿Cuánta educación formal tiene tu madre?

- a. Octavo grado
 b. Algunos años de escuela superior
 c. Diploma de 4to año de escuela superior
 d. Algunos años de univeridad o colegio
 e. Se graduó de bachillerato

18. Señala si tienes alguna experiencia de trabajo.

- _____ a. Si
 _____ b. No

19. Si estás trabajando, ¿indica cuántas horas trabajas en la semana?

- _____ a. 40 horas o más
 _____ b. 20-39 horas semanales
 _____ c. 1-19 horas semanales
 _____ d. No trabajo actualmente

II. INSTRUCCIONES:

A Continuación aparece una lista de necesidades de orientación. Favor de ennegrecer en la Hoja de Contestaciones el óvalo que mejor describe tu nivel de necesidad. Utiliza la siguiente escala:

- | | | | |
|---|----------|---|---------|
| A | Mucha | C | Poca |
| B | Bastante | D | Ninguna |

<u>NECESIDADES PERSONALES</u>	Mucha	Bastante	Poca	Ninguna
20. Planificar adecuadamente mis gastos personales y de estudio.	A	B	C	D
21. Mejorar mi autoestima.	A	B	C	D
22. Aprender cómo manejar las tensiones y ansiedades del diario vivir.	A	B	C	D
23. Desarrollar relaciones más efectivas con los demás.	A	B	C	D
24. Aprender cómo aceptar la crítica constructiva.	A	B	C	D
25. Desarrollar un estilo de vida saludable.	A	B	C	D
26. Aprender destrezas de liderazgo.	A	B	C	D
27. Lidiar mejor con las situaciones que me deprimen.	A	B	C	D
28. Aprender a escuchar a los demás.	A	B	C	D

<u>NECESIDADES PERSONALES</u>	Mucha	Bastante	Poca	Ninguna
29. Mejorar mis relaciones con mi pareja.	A	B	C	D
30. Comprender mejor qué significa el amor y la intimidad.	A	B	C	D
31. Sentirme más cómodo(a) al expresar mis pensamientos y sentimientos.	A	B	C	D
32. Entender y manejar los sentimientos de celos.	A	B	C	D
33. Aprender cómo expresar el coraje en formas aceptables.	A	B	C	D
34. Conocerme mejor a mi mismo(a).	A	B	C	D
35. Aprender cómo terminar una relación.	A	B	C	D
36. Entender mejor mi sexualidad.	A	B	C	D
37. Aprender cómo lidiar con la soledad.	A	B	C	D
38. Desarrollar mi independencia personal.	A	B	C	D
39. Aprender a controlar mi peso.	A	B	C	D
40. Explorar mis sentimientos sobre la muerte en particular, de familiares o amigos cercanos.	A	B	C	D
41. Conocer más sobre métodos contraceptivos.	A	B	C	D
42. Mejorar las relaciones con mis padres.	A	B	C	D
43. Obtener información sobre el uso y abuso de drogas y alcohol.	A	B	C	D

<u>NECESIDADES PERSONALES</u>	Mucha	Bastante	Poca	Ninguna
44. Aprender a manejar las ideas y sentimientos sobre el suicidio.	A	B	C	D
45. Aprender a lidiar con el divorcio de mis padres.	A	B	C	D
46. Aprender a solucionar problemas.	A	B	C	D
47. Conocer más sobre el SIDA y cómo protegerme para evitar el contagio.	A	B	C	D
48. Aprender a tomar decisiones y ponerlas en práctica independientemente de la influencia de mi familia.	A	B	C	D
49. Aprender a manejar situaciones de enfermedad en la familia.	A	B	C	D
<u>ACADEMICAS Y/O DE ESTUDIO</u>				
50. Desarrollar hábitos de estudio efectivos.	A	B	C	D
51. Preparar un programa de estudio.	A	B	C	D
52. Desarrollar mis destrezas de lectura.	A	B	C	D
53. Sentirme menos ansioso(a) al tomar exámenes.	A	B	C	D
54. Sentirme cómodo(a) al hablar frente a la clase.	A	B	C	D
55. Aprender a tomar apuntes en el salón de clases.	A	B	C	D
56. Aprender a manejar las diferentes expectativas y demandas de los profesores.	A	B	C	D
57. Mejorar la concentración y la memoria.	A	B	C	D

<u>ACADEMICAS Y/O DE ESTUDIO</u>	Mucha	Bastante	Poca	Ninguna
58. Aprender a utilizar la biblioteca.	A	B	C	D
59. Mejorar mis destrezas en matemáticas.	A	B	C	D
60. Aprender cómo preparar informes orales.	A	B	C	D
61. Aprender cómo redactar informes escritos.	A	B	C	D
62. Conocer los eventos académicos, servicios y facilidades universitarias.	A	B	C	D
63. Aprender a controlar mi ansiedad en torno a mi ejecución en los cursos académicos.	A	B	C	D
64. Participar en proyectos de servicios y ayuda a la comunidad.	A	B	C	D

VOCACIONALES

65. Conocer mis intereses, habilidades y aptitudes y cómo se relacionan con mis alternativas ocupacionales.	A	B	C	D
66. Obtener información sobre las diferentes ocupaciones y profesiones.	A	B	C	D
67. Identificar y determinar mis valores más importantes y cómo éstos influyen en el trabajo.	A	B	C	D
68. Desarrollar las destrezas en la toma de decisiones.	A	B	C	D
69. Conocer las ocupaciones de mayor demanda en el mundo ocupacional.	A	B	C	D

<u>VOCACIONALES</u>	Mucha	Bastante	Poca	Ninguna
70. Obtener información sobre los programas académicos, sus requisitos y años de estudio.	A	B	C	D
71. Seleccionar una carrera.	A	B	C	D
72. Identificar mis motivaciones y actitudes hacia el trabajo.	A	B	C	D
73. Conocer mis fortalezas, competencias y limitaciones personales.	A	B	C	D

APPENDIX C

LETTER OF MICHAEL WEISSBERG

S U F F O L K

C O M M U N I T Y C O L L E G E

COLLEGE ADMINISTRATIVE OFFICES • 533 COLLEGE ROAD • SELDEN, NEW YORK 11784-2899

October 24, 1994

Myrna I. Velez
Apto. 1-E Torre I
Condominio Costa Marina
Carolina, PR 00987

Dear Ms. Velez:

Thank you for your recent request to use some of the items from the Needs Assessment Survey. Since the survey isn't copyrighted or published in any way, please feel free to use the survey in any manner that is helpful to you.

I hope you find the survey to be of some assistance in your work.

Sincerely,



Michael Weissberg, Ph.D.
Vice President for Student Affairs

MW:as



EASTERN CAMPUS
Speonk-Riverhead Road
Riverhead, N.Y. 11901
(516) 548-2500

AMMERMAN CAMPUS
533 College Road
Selden, N.Y. 11784
(516) 451-4110

WESTERN CAMPUS
Crooked Hill Road
Brentwood, N.Y. 11717
(516) 434-6700

Suffolk Community College is a unit of the State University of New York.

APPENDIX D
LETTER GRANTING
PERMISSION TO CONDUCT
THE STUDY

Universidad de
Puerto Rico

8 de septiembre de 1993



Recinto de
Rio Piedras

Sra. Myrna I. Vélez
Directora de CODE
Decanato de Estudiantes
Recinto de Río Piedras
Universidad de Puerto Rico

Andrés Collazo
Dr. Andrés Collazo, Presidente del Comité
Asesor para la Protección de
Seres Humanos en la Investigación

CONSIDERACION DE LA PROPUESTA "PERCEIVED NEEDS OF
FRESHMAN STUDENTS AT THE UNIVERSITY OF PUERTO RICO"
(NUM. 9394001)

Los miembros del Comité Asesor para la Protección de
Seres Humanos en la Investigación consideraron la
propuesta de epígrafe en su reunión del 2 de septiembre
de 1993.

El Comité decidió APROBAR la misma.

Cualquier cambio posterior a esta aprobación requerirá
consideración y autorización del CAPSHI.

Le deseamos éxito en su investigación.

wif(capshi.apr)

Decanato de
Estudios Graduados
e Investigación

Apartado 21790
Estación UPR
San Juan, P.R. 00931-1790

Tel. (809) 764-0000
Ext. 3617
Fax: (809) 763-4265

APPENDIX E
RESULTS OF REMAINING QUESTIONS
OF QUESTIONNAIRE

Table 14

Percentage of Freshman Students by Sex and Age

Item	Sex			
	Female		Male	
	F	P	F	P
Age				
16 years old or less	55	3.3	13	.8
17-18 years old	1103	66.6	452	27.3
19-20 years old	11	.7	12	.1
21-22 years old	2	.1	2	.1
23 years old or more	3	.2	2	.1
	<u>N=1665</u>			

Note: F=Frequency; P=Percentage

Table 15
Percentage of Freshman Students by
Sex and Marital Status

Item	Sex	
	Male	Female
Marital Status		
Married	.4	.6
Single	28.5	70.0
Separated	.1	.3
Widow	—	.1
<u>N</u> =1665		

Table 16

Percentage of Freshman Students by
Sex and Type of High School

Item	Sex	
	Male	Female
Type of high school		
Public school in Puerto Rico	11.4	34.9
Private school in Puerto Rico	17.1	35.5
Public school in other country	.2	.2
Private school in other country	.2	.1
High school equivalency test	.2	.2
<u>N</u> =1665		

Table 17

Percentage of Freshman Students by
Type of High School and Grade Point Average

Item	Type of High School				
	Public school in Puerto Rico	Private school in Puerto Rico	Public school in other country	Private school in other country	High school equivalency test
High school grade point average					
1.99 or less	.1	.1	-	-	-
2.00 - 2.49	.5	1.3	-	.1	-
2.50 - 2.99	2.5	6.8	.2	-	-
3.00 - 3.49	10.6	14.3	.1	.1	.3
3.50 - 4.00	32.7	30.0	.1	.2	.1
	<u>N</u> =1665				

Table 18

Percentage of Freshman Students by
Type of High School and Degree Aspirations

Item	Degree Aspirations			
	Bachelor	Master	Doctorate	Post- doctorate
Type of high school				
Public school in Puerto Rico	17.1	12.9	14.7	1.6
Private school in Puerto Rico	14.6	16.3	18.6	3.0
Public school in other country	.3	.1	.1	-
Private school in other country	.2	.1	.1	.1
High school equivalency test	.2	-	.1	.1
N=1665				

Table 19

Row Percentage of Freshman Students by College
of Enrollment and High School Grade Point Average

Item	Grade Point Average				
	1.99 or less	2.00- 2.49	2.50- 2.99	3.00- 3.49	3.50- 4.00
College of enrollment					
Education	-	2.3	15.9	28.0	53.8
Natural sciences	-	.3	1.1	9.8	88.8
Business administra- tion	.2	1.0	6.6	26.2	65.9
Humanities	-	5.8	15.9	37.7	40.6
Social sciences	.3	2.5	17.5	32.8	46.8
Architecture	-	-	8.3	16.7	75.0
Public communica- tion	2.2	-	-	19.6	78.3
General studies	-	-	29.4	29.4	41.2
N=1665					

Table 20

Row Percentage of Freshman Students by College
of Enrollment and Degree Aspirations

Item	Degree Aspirations			
	Bachelor	Master	Doctorate	Post- doctorate
College of enrollment				
Education	34.9	34.1	27.9	3.1
Natural sciences	20.4	16.9	50.4	12.2
Business administra- tion	47.8	36.0	13.8	2.5
Humanities	40.4	31.0	25.6	3.0
Social sciences	23.0	29.1	45.0	2.9
Architecture	12.5	66.7	20.8	-
Public communica- tion	27.9	53.5	18.6	-
General studies	23.5	41.2	35.3	-
<u>N=1665</u>				

Table 21

Row Percentage of Freshman Students by College
of Enrollment and Father's Level of Education

Item	Father's Level of Education				
	Eight- grade or less	Some high school years	High school graduate	Some college years	College degree
College of enrollment					
Education	12.1	3.2	25.0	19.4	40.3
Natural Sciences	4.3	4.8	20.8	23.9	46.2
Business administra- tion	8.7	4.5	24.9	20.9	40.9
Humanities	5.9	5.0	24.8	19.3	45.0
Social sciences	6.7	5.3	28.0	20.0	40.0
Architecture	-	-	13.0	30.4	56.5
Public communica- tion	8.7	8.7	15.2	30.4	37.0
General studies	-	6.3	31.3	25.0	37.5
<u>N</u> =1665					

Table 22

Row Percentage of Freshman Students by College
of Enrollment and Mother's Level of Education

Item	Mother's Level of Education				
	Eight- grade or less	Some high school years	High school graduate	Some college years	College degree
College of enrollment					
Education	7.7	6.2	21.5	29.2	35.4
Natural sciences	5.3	3.9	20.2	26.7	43.8
Business administra- tion	8.6	4.4	24.8	24.3	37.8
Humanities	4.4	3.0	22.2	27.6	42.9
Social sciences	4.5	4.8	25.6	26.6	38.5
Architecture	-	4.3	13.0	13.0	69.6
Public communi- cation	6.5	6.5	7.4	19.6	50.0
General studies	6.3	6.3	18.8	25.0	43.8
	N=1665				

Table 23

Percentage of Freshman Students by
College of Enrollment and Type of
High School (Public/Private in Puerto Rico)

Item	Type of High School	
	Public school in Puerto Rico	Private school in Puerto Rico
College of enrollment		
Architecture		
Architectural design	39.1	56.5
Business Administration		
General program	36.4	63.6
Accounting	45.8	53.2
Economy	100.0	-
Finance	27.3	72.7
Statistics	-	100.0
Secretarial Sciences	59.5	35.1
Information systems	48.9	46.7
Human resources	47.6	47.6
Marketing	50.0	50.0
Management	50.0	50.0
Education		
Elementary School		
Special education	40.0	60.0
English (TESL)	100.00	-

Continued, next page

Table 23-- Continued

Item	Type of High School	
	Public school in Puerto Rico	Private school in Puerto Rico
Home economics	100.0	-
Kindergarten to third-grade	54.5	45.5
Fourth to sixth-grade	50.0	50.0
Secondary School		
Sciences	60.0	40.0
Biology	45.5	54.5
Chemistry	66.7	33.3
Mathematics	71.4	21.4
Physics	100.0	-
Social studies	100.00	-
Business education	40.0	60.0
Physical education	30.0	70.0
Vocational education	100.0	-
English (TESL)	25.0	75.0
Art	50.0	50.0
History	60.0	40.0
Spanish	75.0	25.0
Music	100.0	-
Theater	33.3	66.7
Foreign languages	66.7	33.3
Secretarial studies	100.0	-

Continued, next page

Table 23-- Continued

Item	Type of High School	
	Public school in Puerto Rico	Private school in Puerto Rico
Home Economics		
General program	100.0	-
Extension program	100.0	-
Nutrition and dietetics	56.2	43.8
General Studies		
General program	35.3	64.7
Humanities		
Fine arts	40.0	60.0
English (language and literature)	22.2	66.7
Philosophy	40.0	60.0
Hispanic studies	47.1	52.9
Music	40.0	53.3
Drama	57.7	42.3
French	33.3	66.7
Literature	-	100.0
Art history	33.3	66.7
Language (locution)	-	100.0
American history	-	100.0
Western history	33.3	66.7
Pre-law	59.3	40.7

Continued, next page

Table 23-- Continued

Item	Type of High School	
	Public school in Puerto Rico	Private school in Puerto Rico
Pre-translation	-	100.0
Contemporary language	69.2	26.9
Natural Sciences		
General program	30.0	70.0
Biology	30.0	68.9
Chemistry	50.0	50.0
Mathematics	-	100.0
Physics	60.0	40.0
Environmental sciences	60.0	40.0
Transfer programs		
Pre-pharmacy	59.5	40.5
Pre-therapy	40.9	54.5
Pre-medical technology	50.0	50.0
Occupational therapy	-	100.0
Health education	-	100.0
Public communication	45.5	54.5
Social Sciences		
General program	55.2	44.8
Economy	18.9	78.4
Political sciences	4.5	56.6
Psychology	54.9	44.4

Continued, next page

Table 23-- Continued

Item	Type of High School	
	Public school in Puerto Rico	Private school in Puerto Rico
Sociology	50.0	50.0
Anthropology	25.0	75.0
Geography	100.0	-
Social work	70.6	29.4

Note: Freshman students that attended public and private schools in other country and those that passed the high school equivalency test were not included.

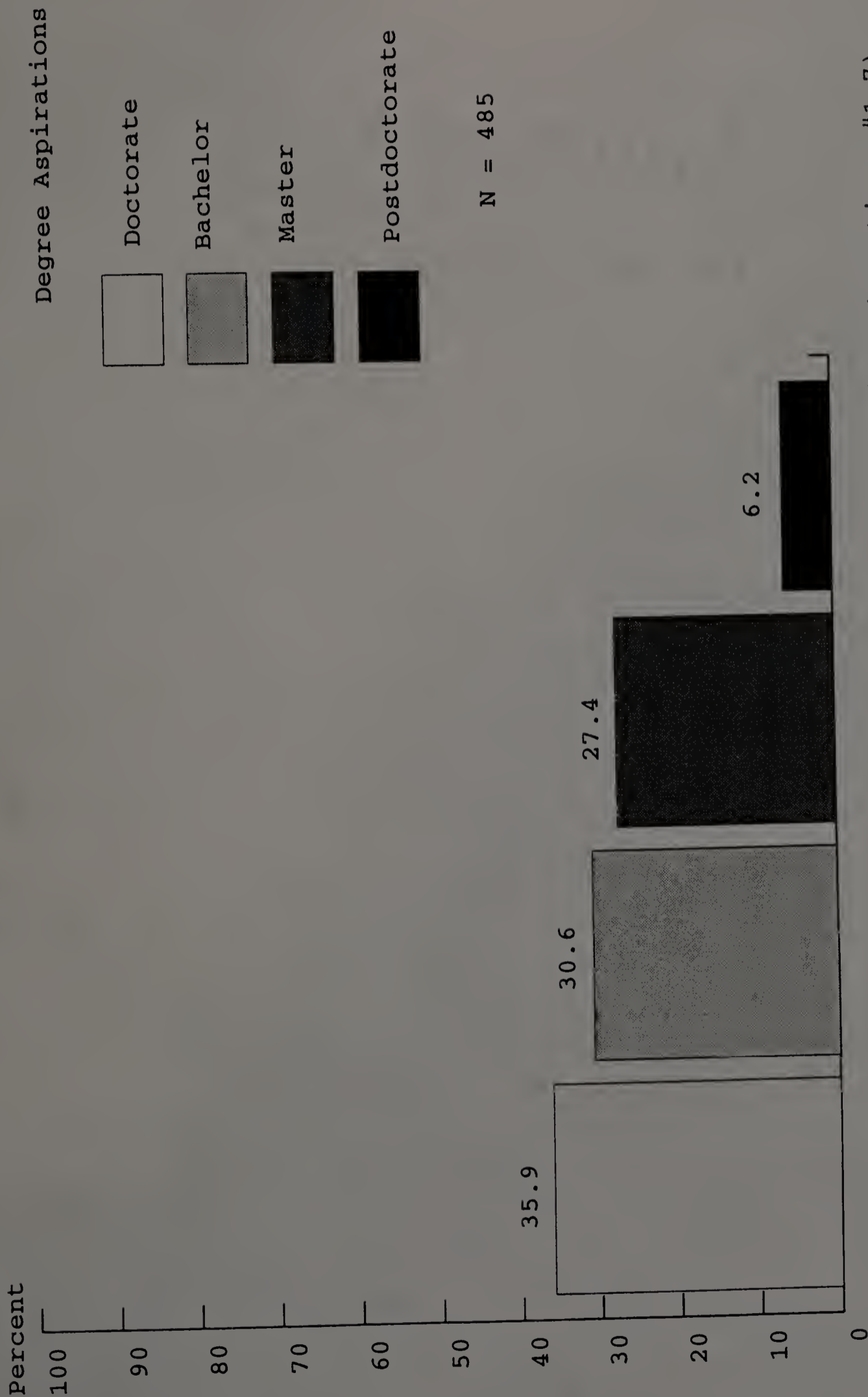


Figure 17. Percentage of Male Students by Degree Aspirations (Questions #1,7).

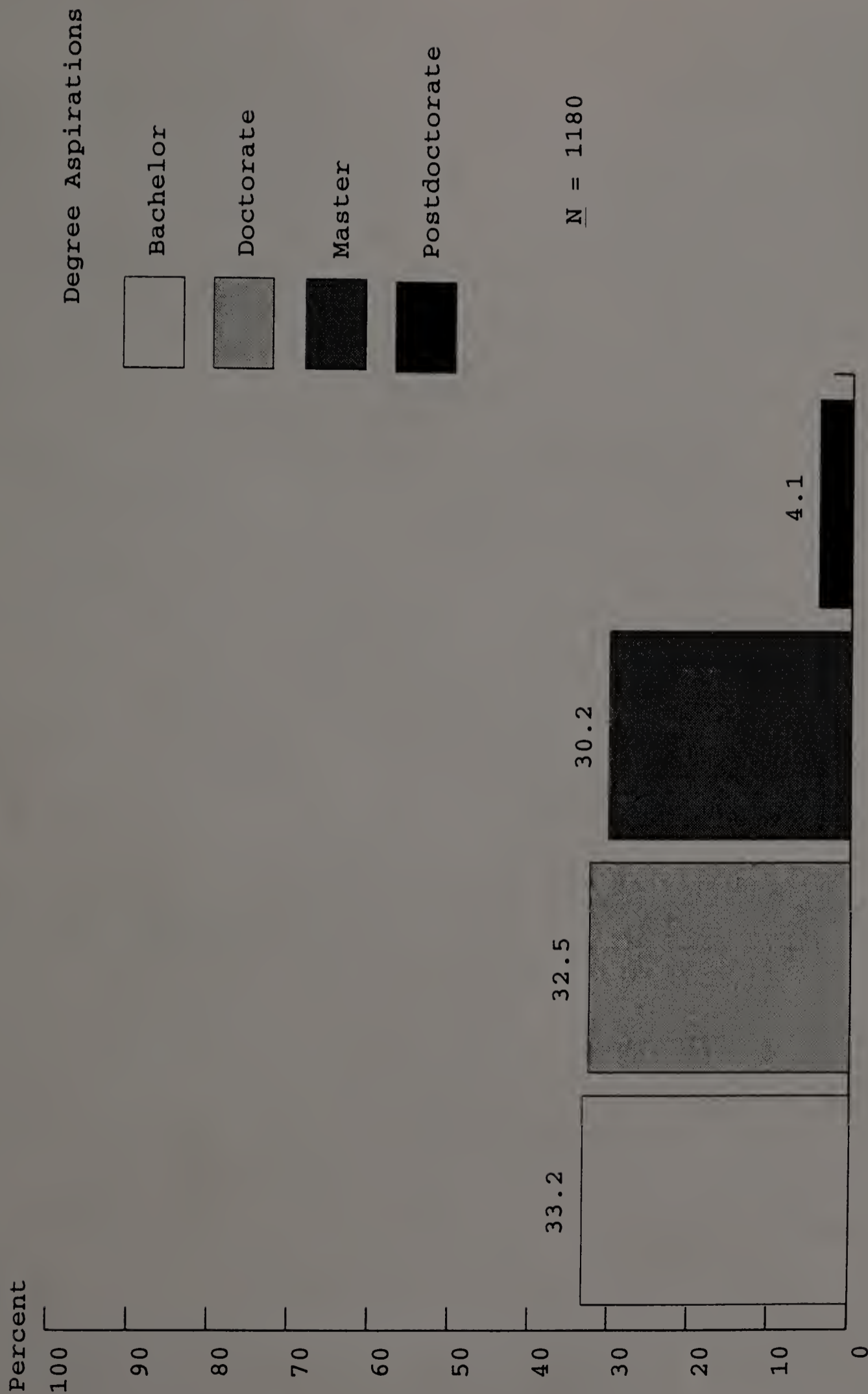


Figure 18. Percentage of Female Students by Degree Aspirations (Questions #1,7).

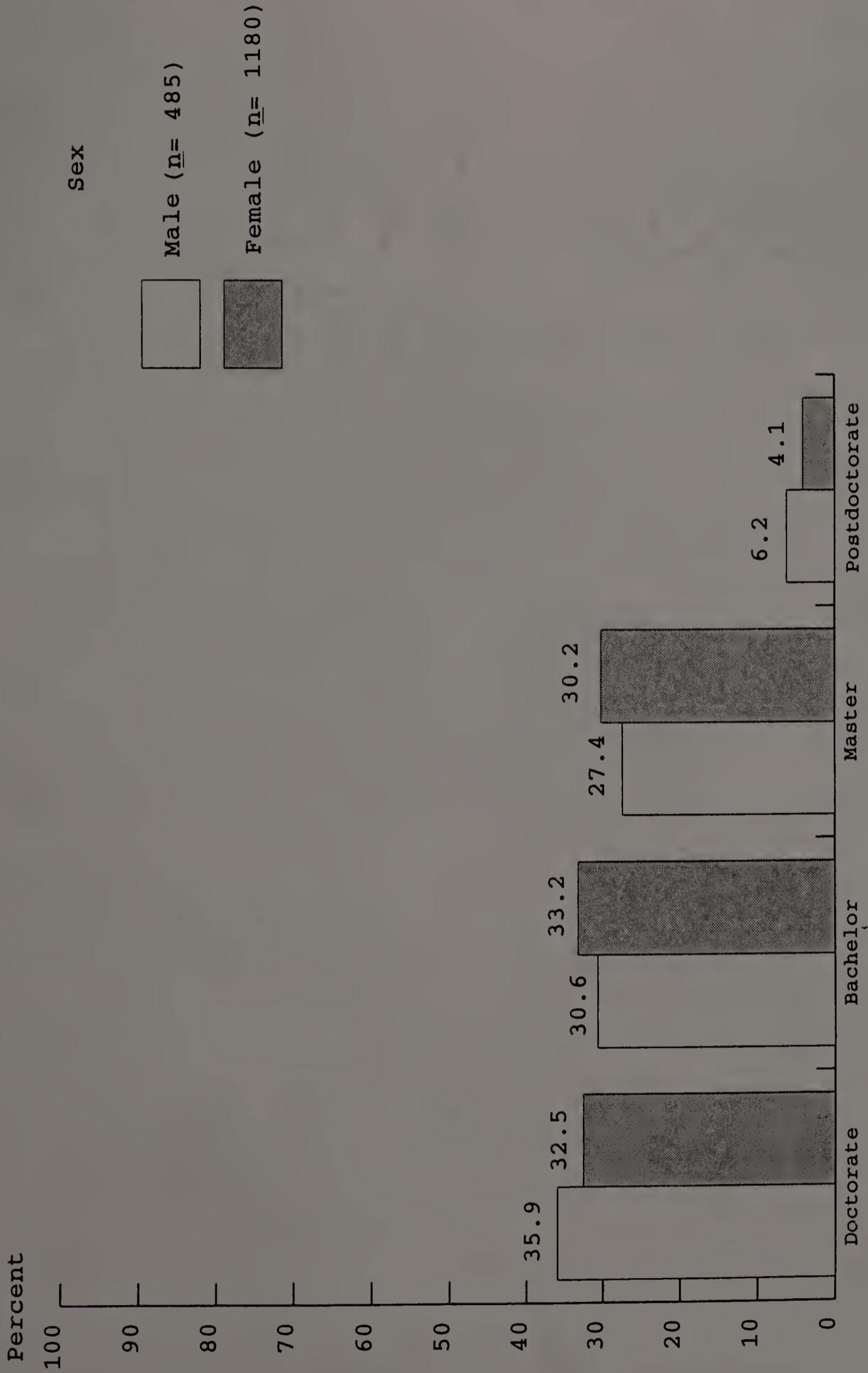


Figure 19. Percentage of Freshman Students by Sex and Degree Aspirations (Questions #1,7).

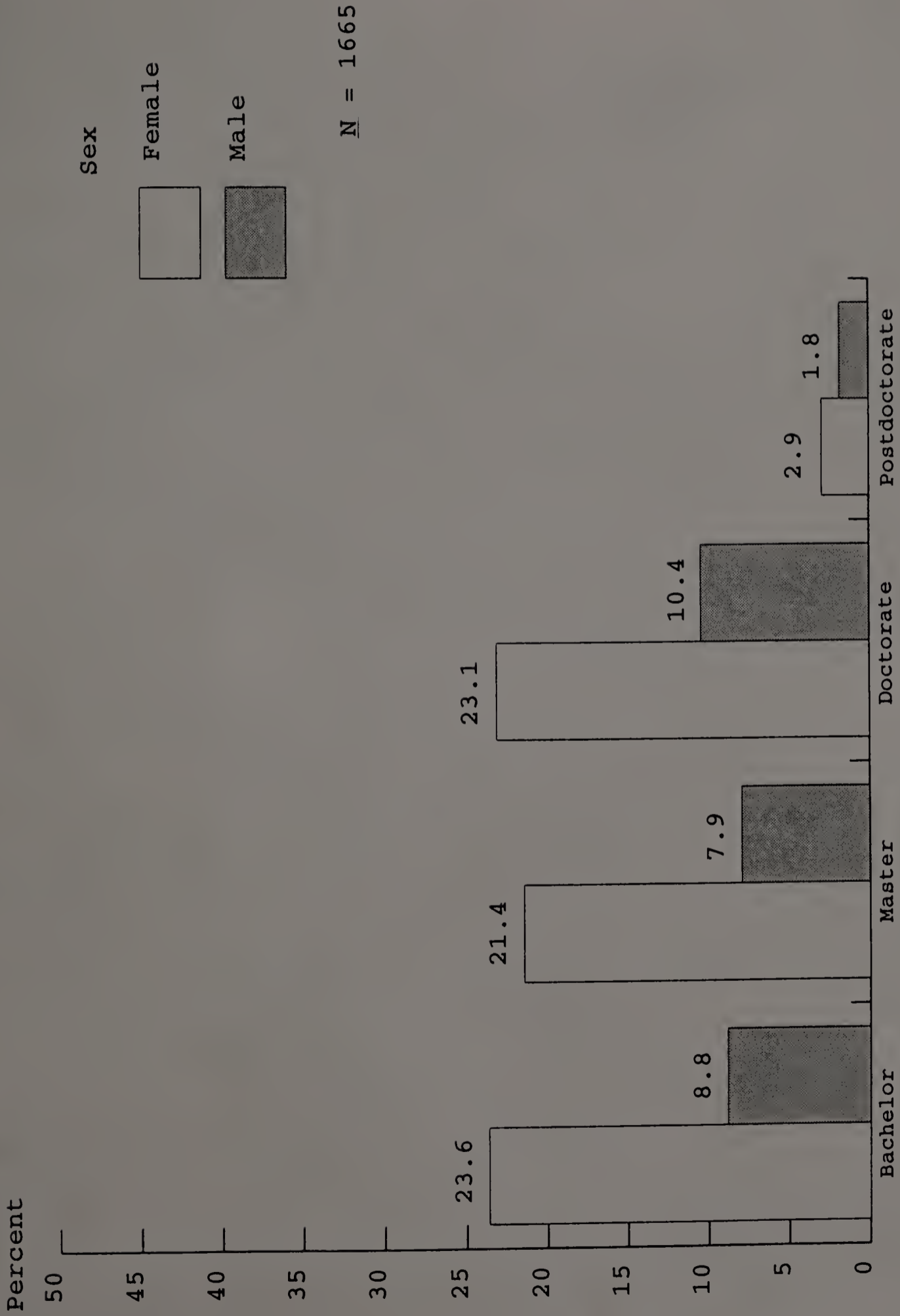


Figure 20. Percentage of Freshman Students by Sex and Degree Aspirations (Questions #1,7).

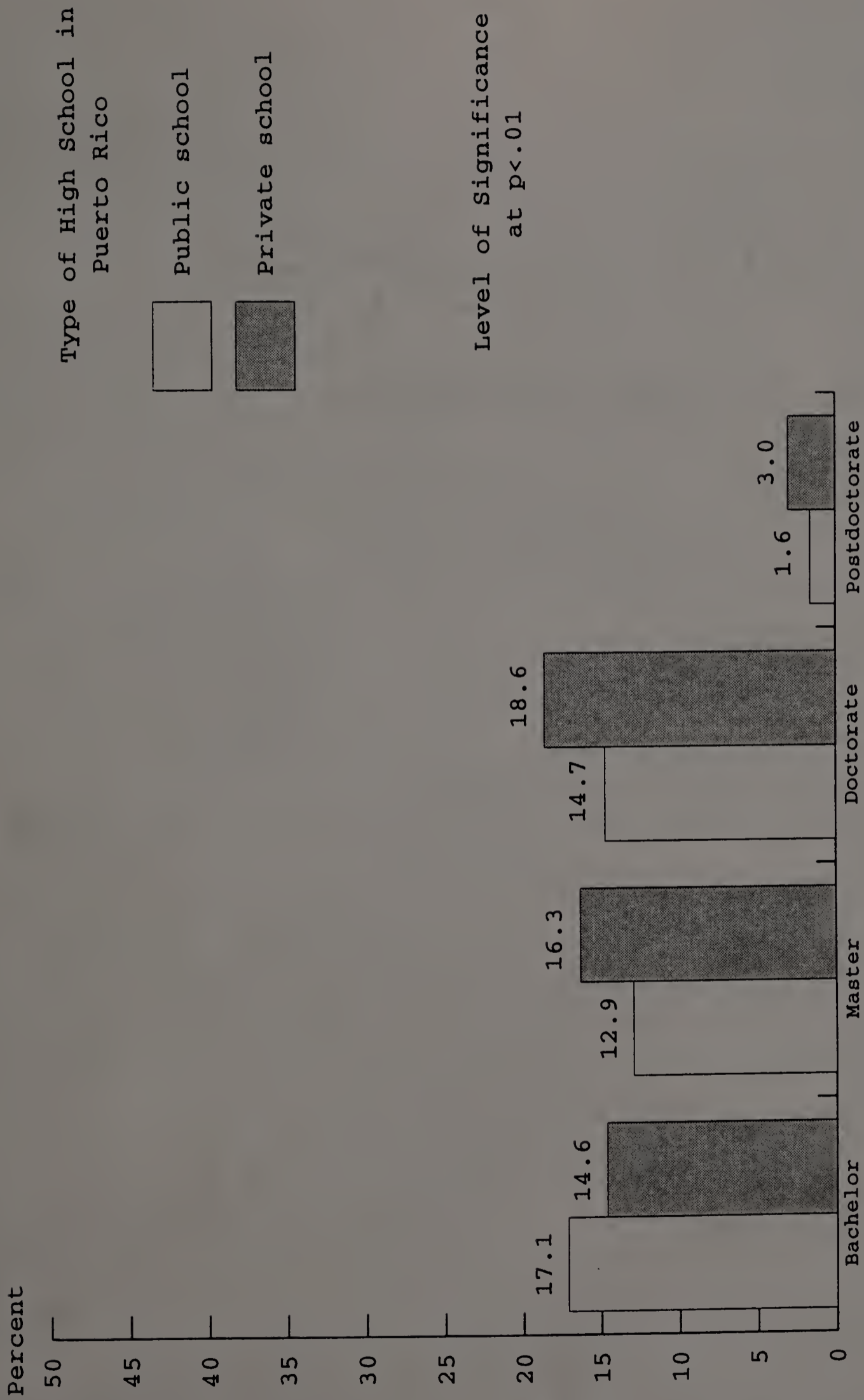


Figure 21. Percentage of Freshman Students by Type of High School in Puerto Rico and Degree Aspirations (Questions #5, 7).

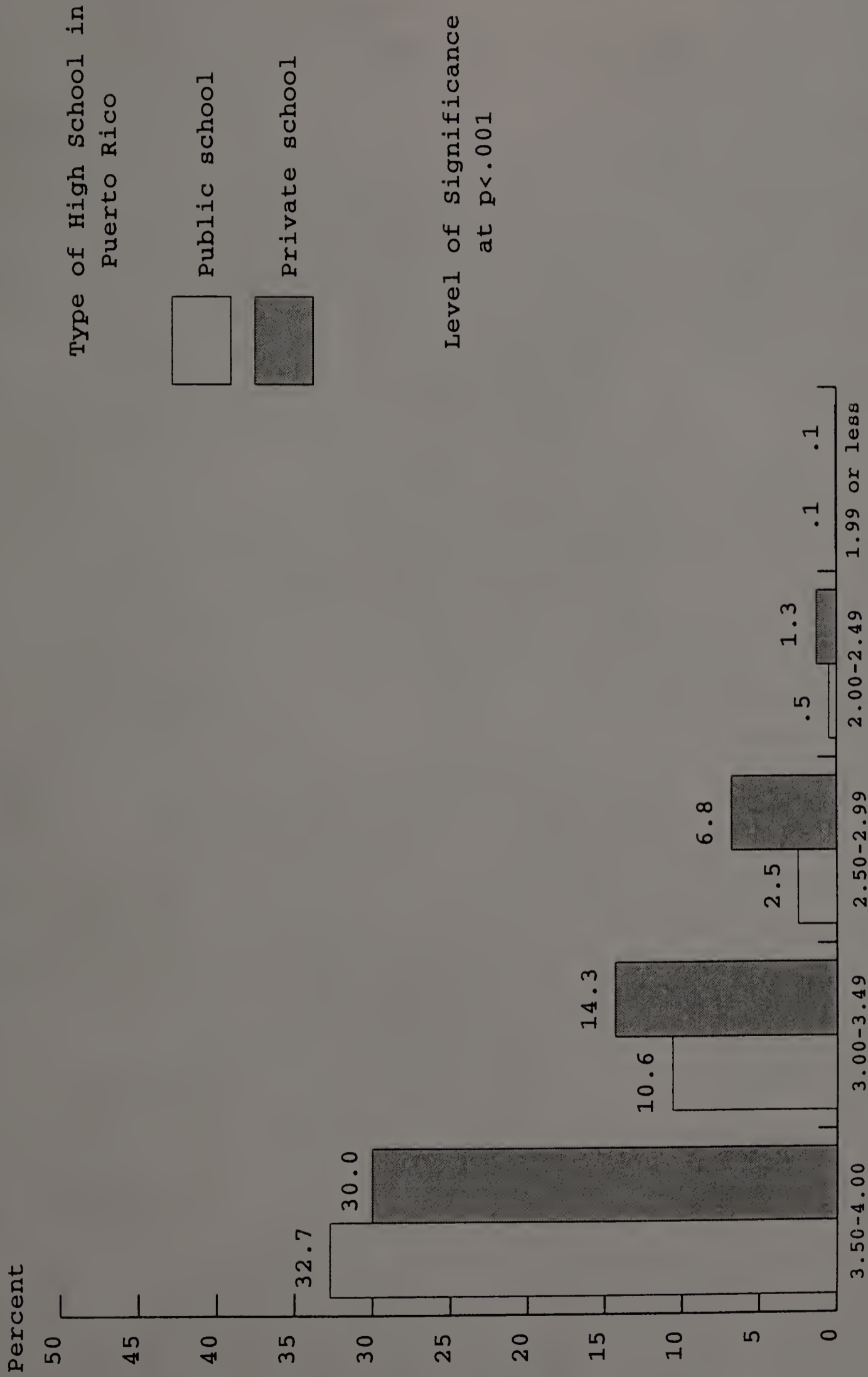


Figure 22. Percentage of Freshman Students by Type of High School and Grade Point Average (Questions #5,6).

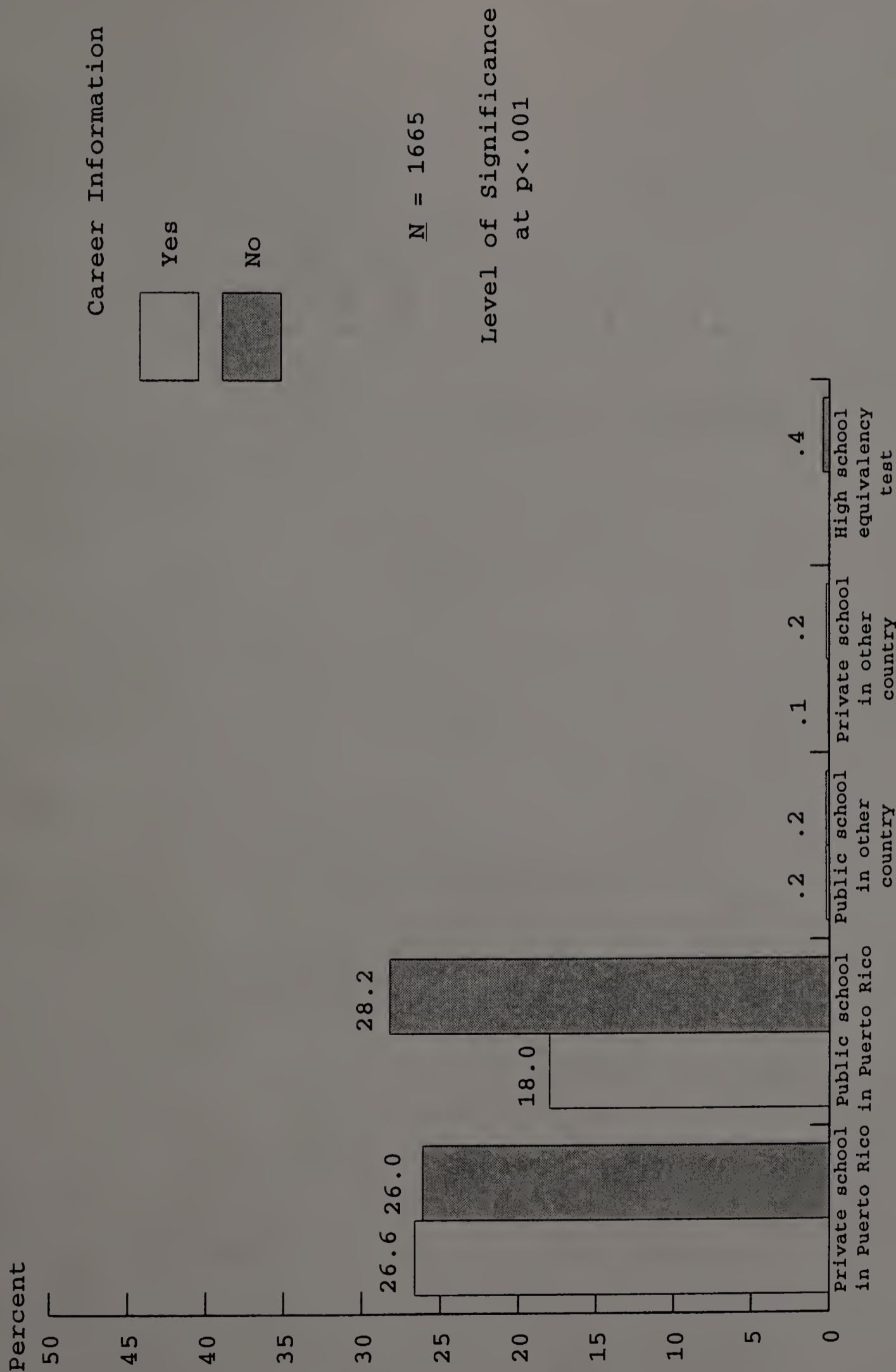


Figure 23. Percentage of Freshman Students by Type of High School and Career Information (Questions #5,8).

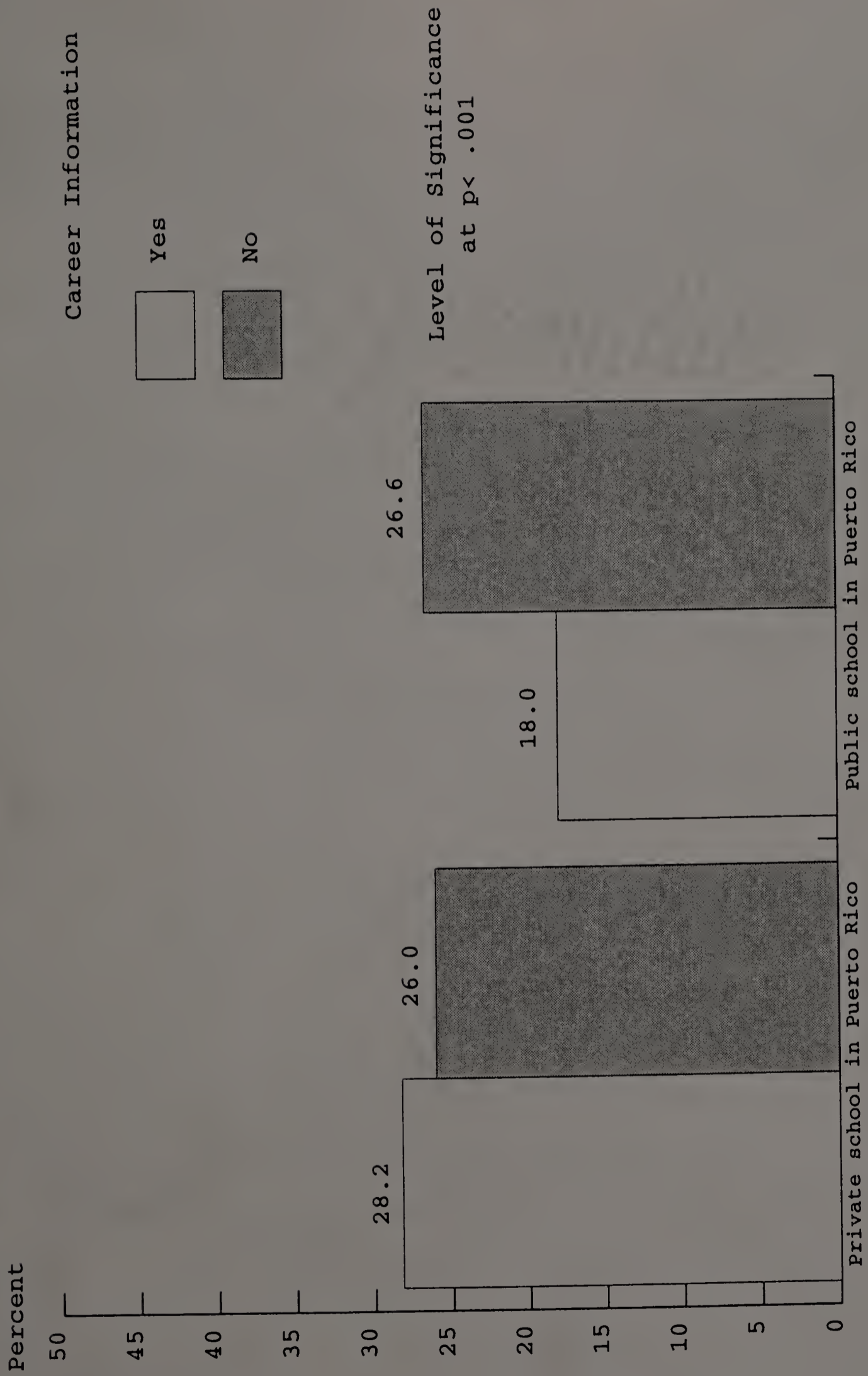


Figure 24. Percentage of Freshman Students by Type of High School in Puerto Rico and Career Information (Questions #5,8).

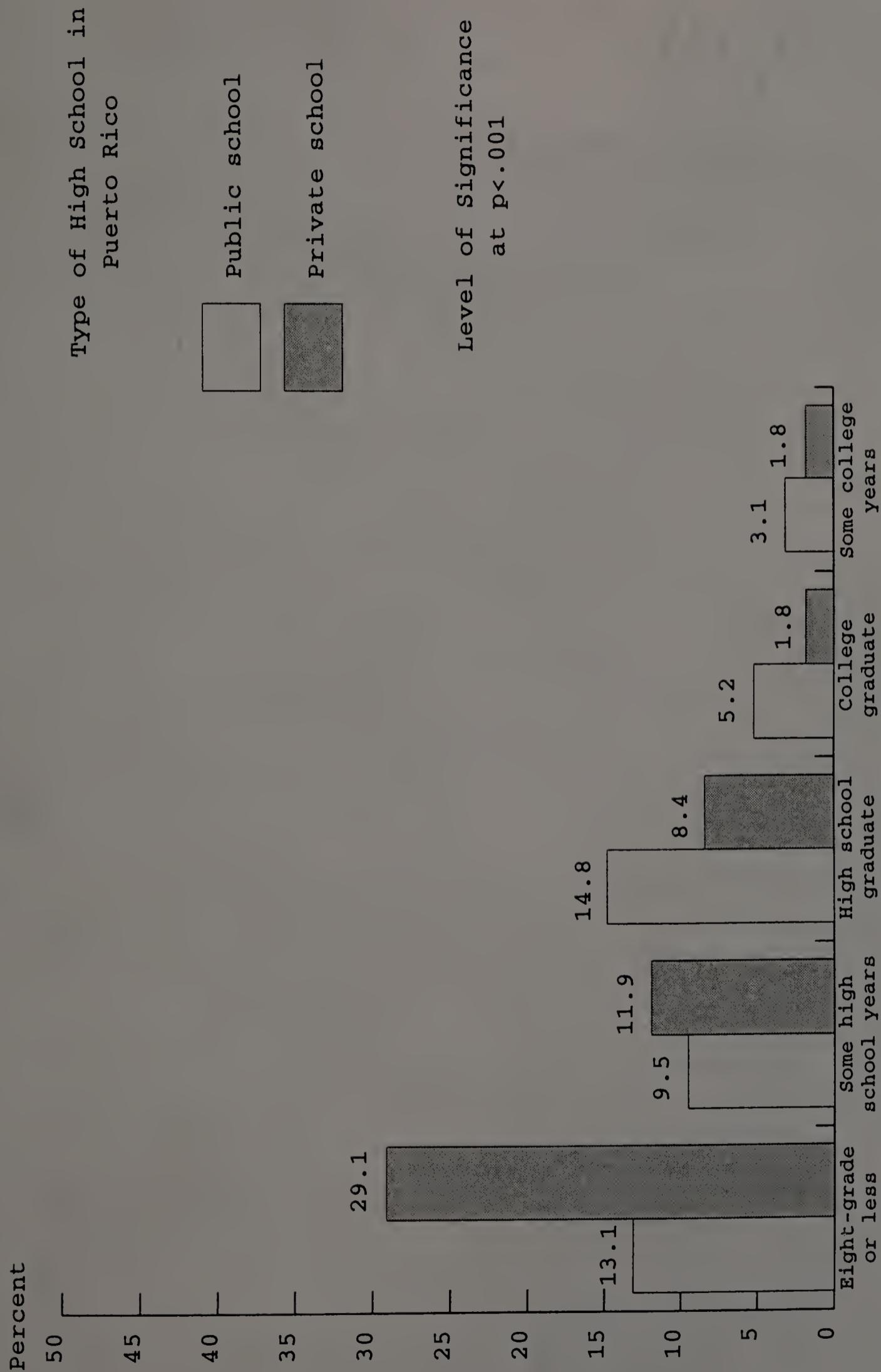


Figure 25. Percentage of Freshman Students by Type of High School and Father's Level of Education (Questions #5, 16).

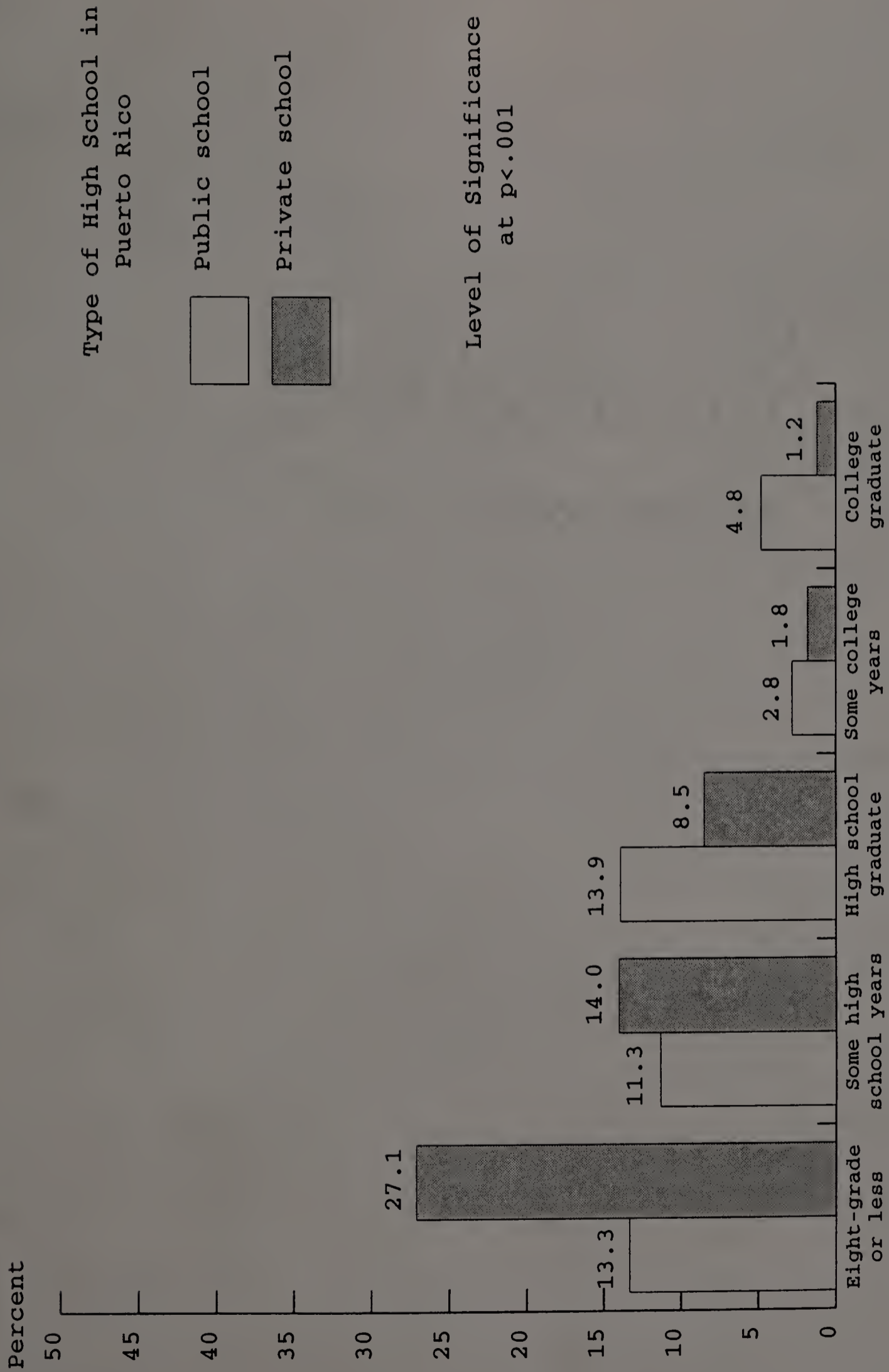


Figure 26. Percentage of Freshman Students by Type of High School and Mother's Level of Education (Questions #5,17).

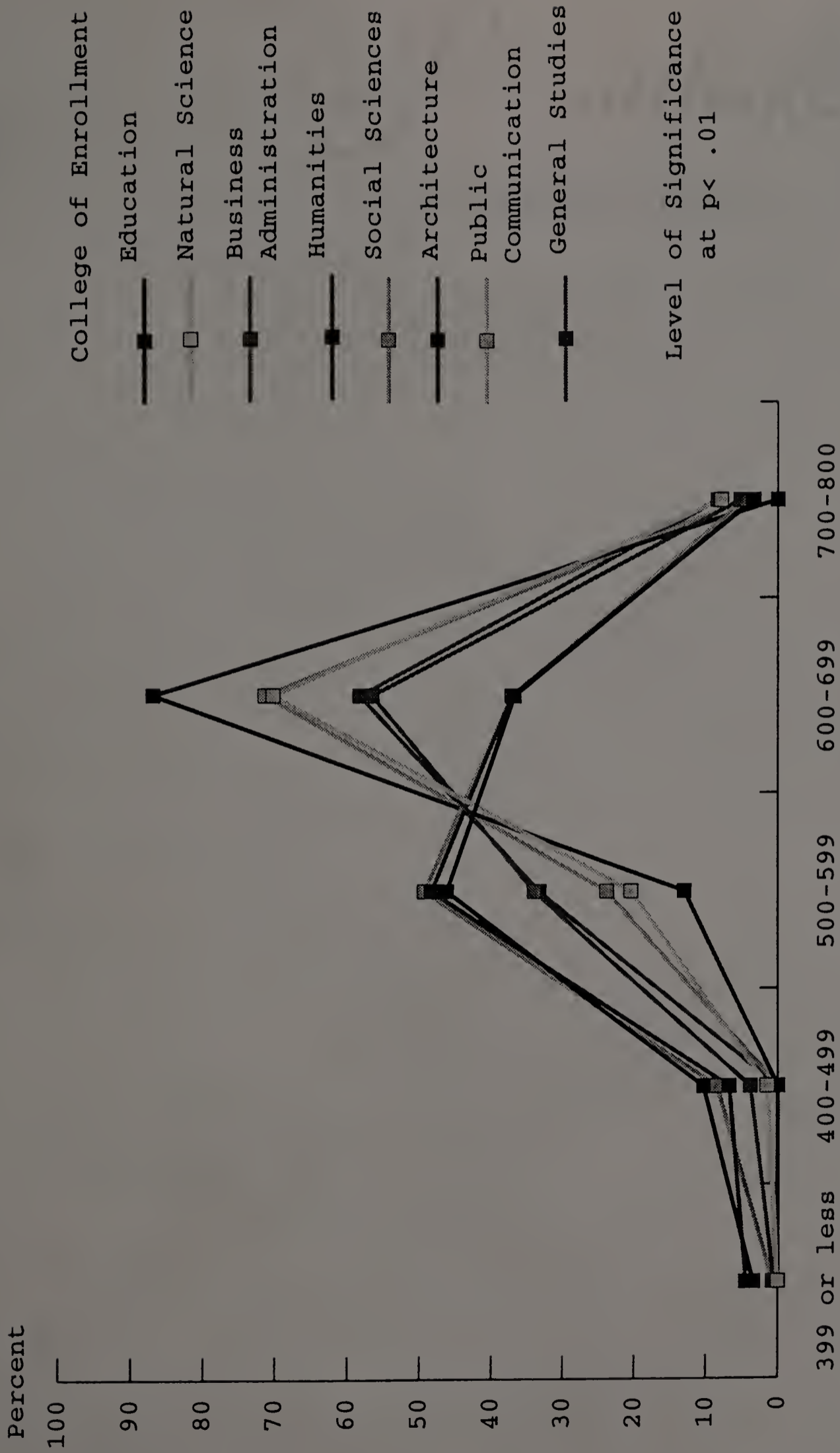


Figure 27. Percentage of Freshman Students by College of Enrollment and Scores in the Verbal Reasoning Test (Question #11).

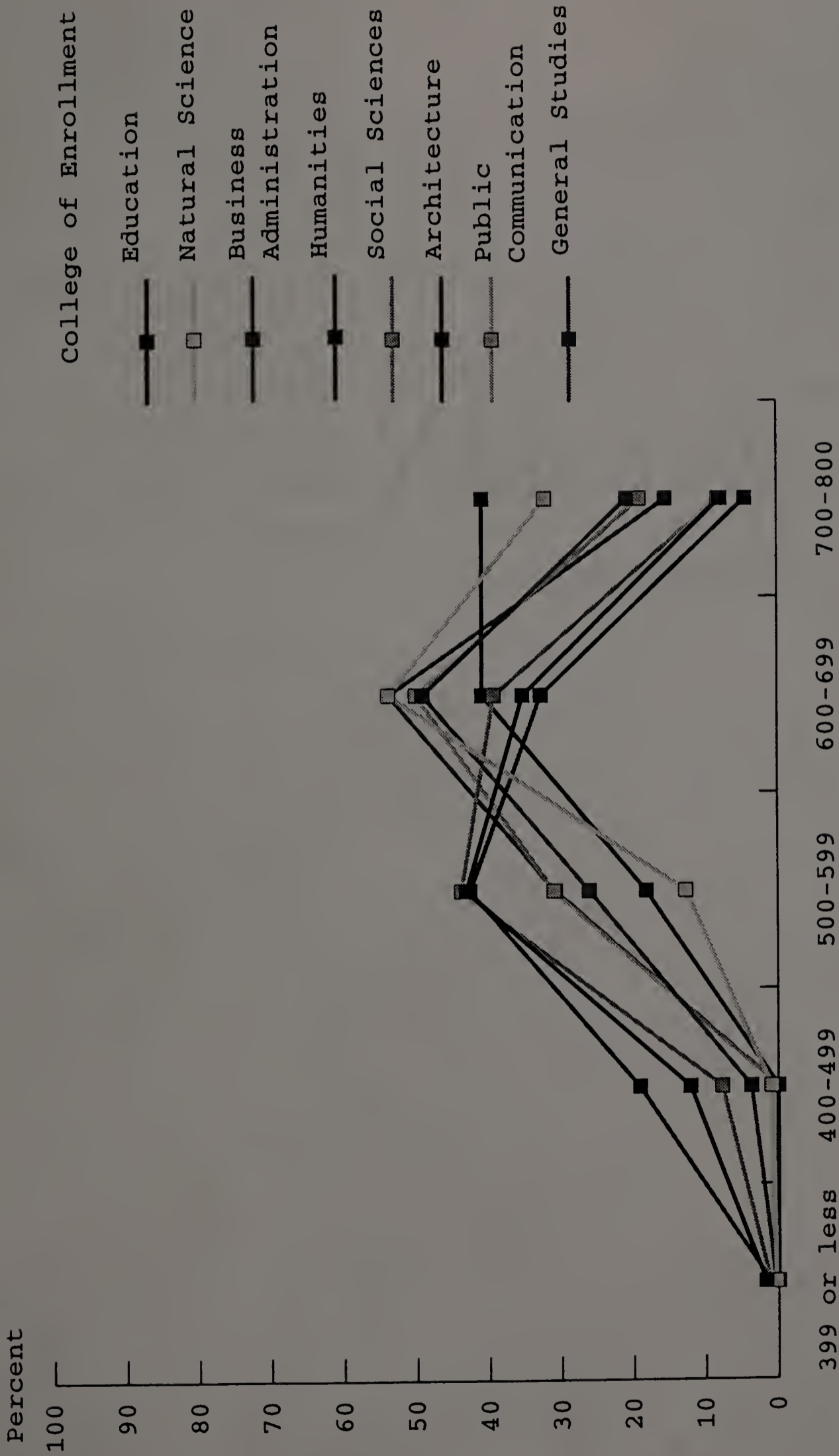


Figure 28. Percentage of Freshman Students by College of Enrollment and Scores in the Mathematical Aptitude Test (Question #12).

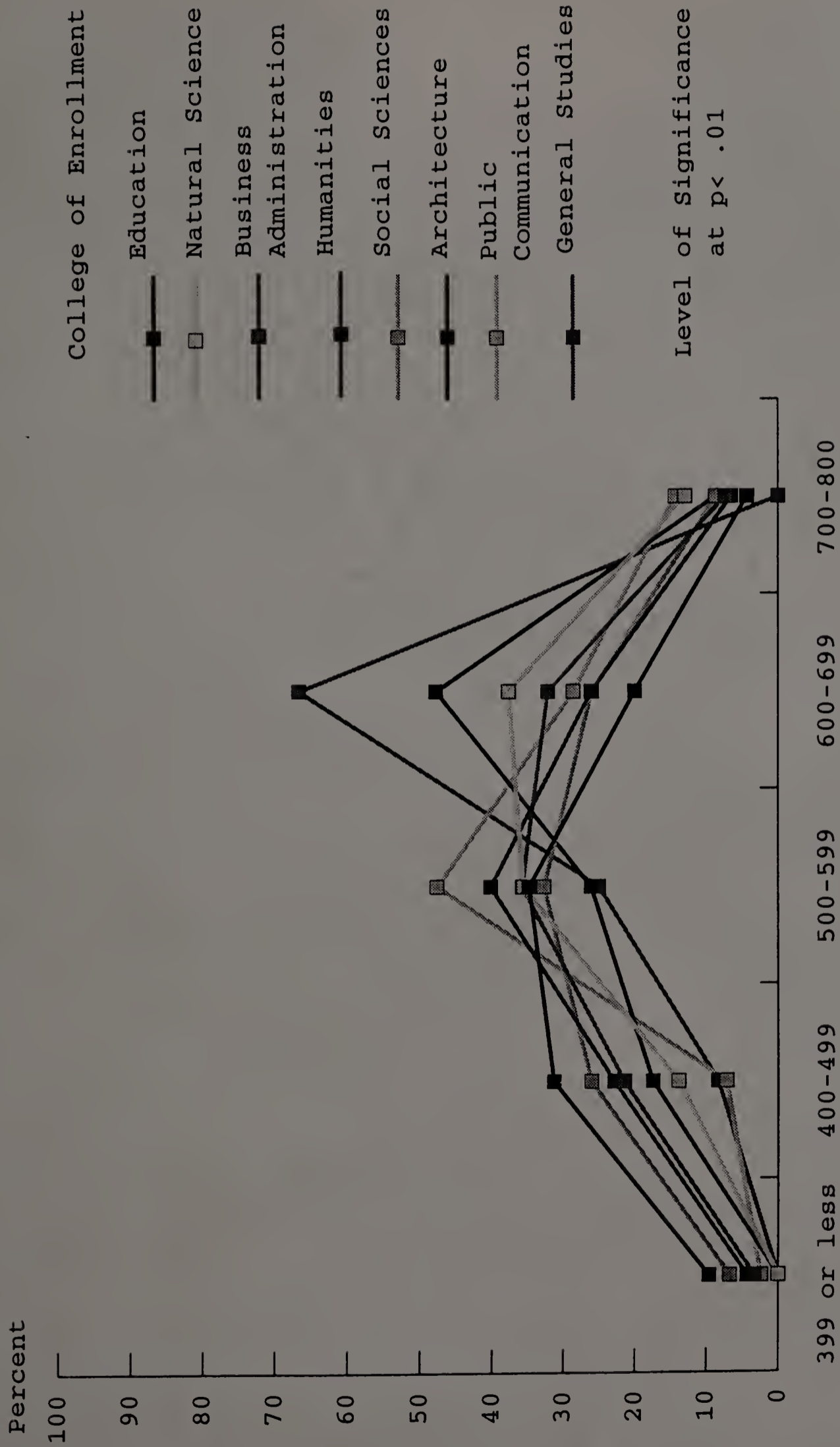


Figure 29. Percentage of Freshman Students by College of Enrollment and Scores in the English Achievement Test (Question #13).

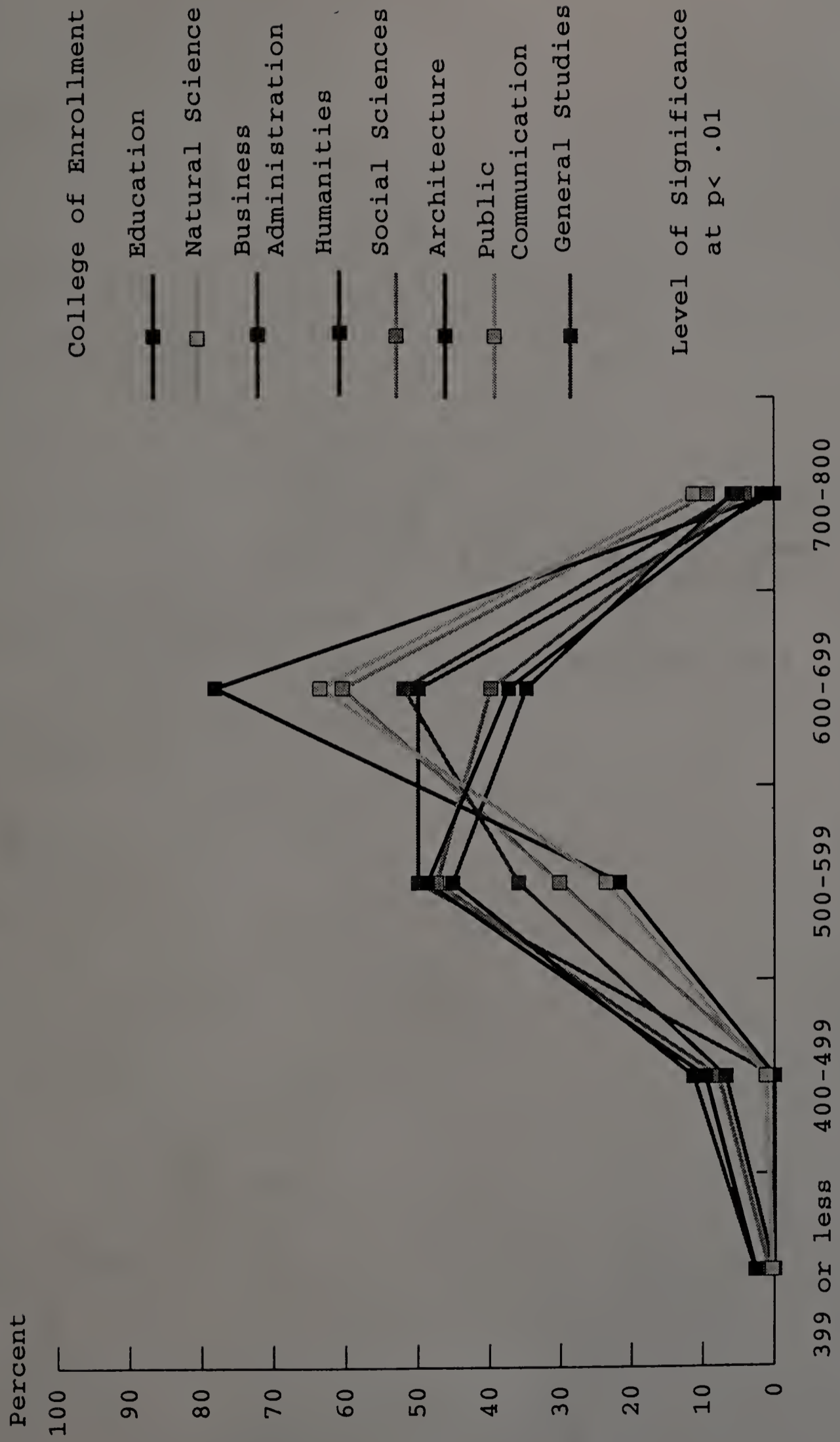


Figure 30. Percentage of Freshman Students by College of Enrollment and Scores in the Spanish Achievement Test (Question #14).

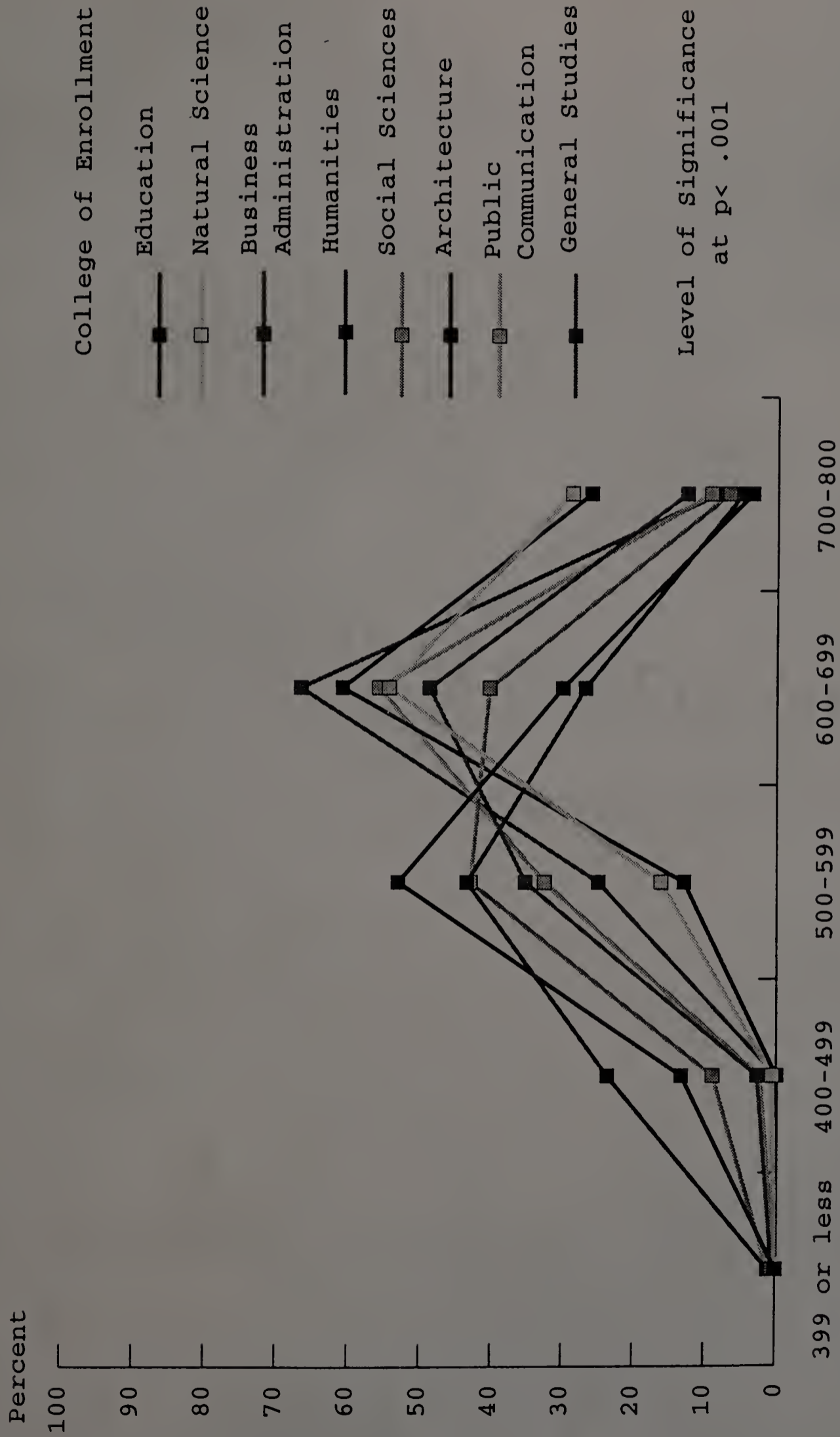


Figure 31. Percentage of Freshman Students by College of Enrollment and Scores in the Mathematical Achievement Test (Question #15).

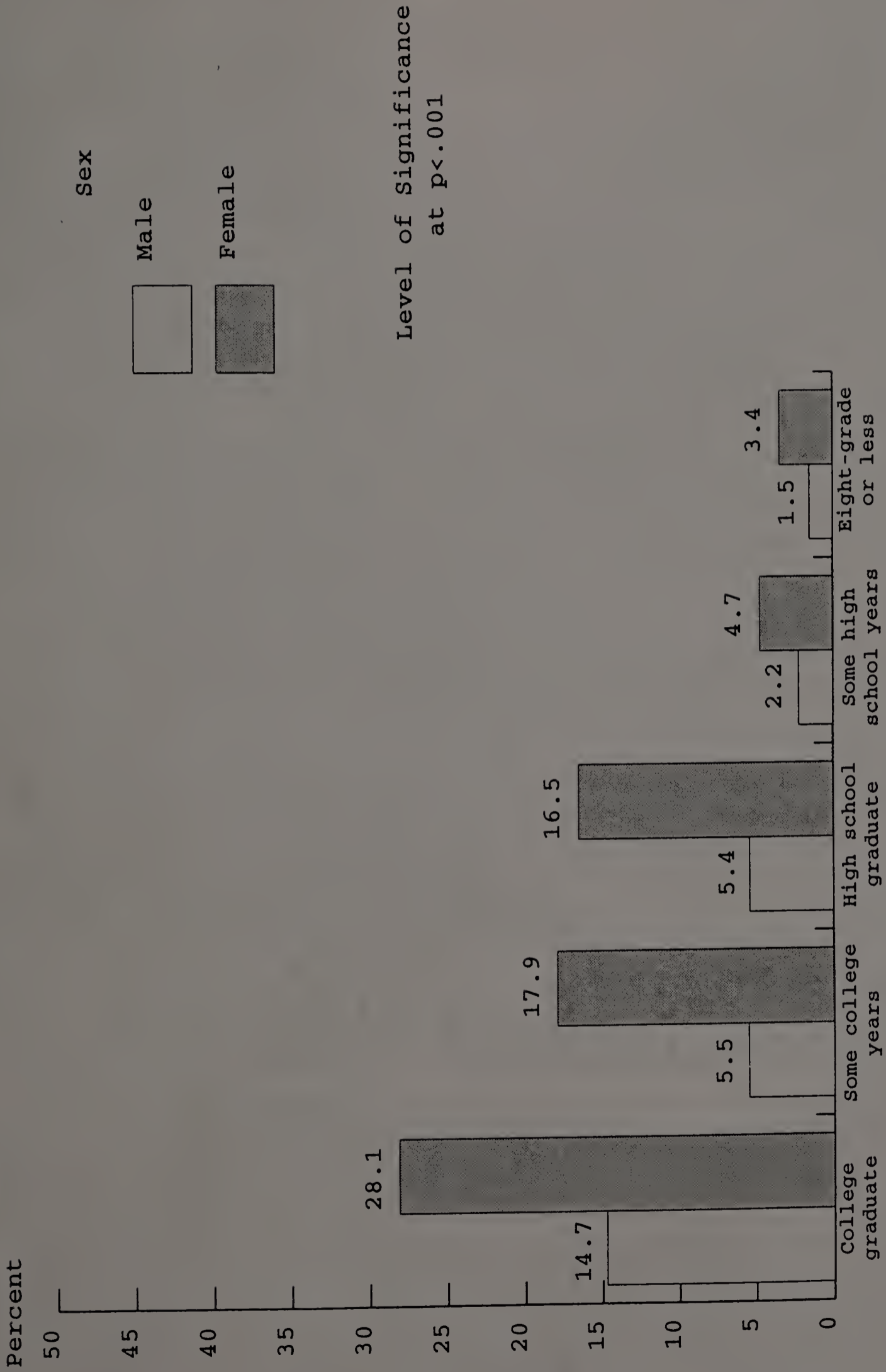


Figure 32. Percentage of Freshman Students by Sex and Father's Level of Education (Questions #1,16).

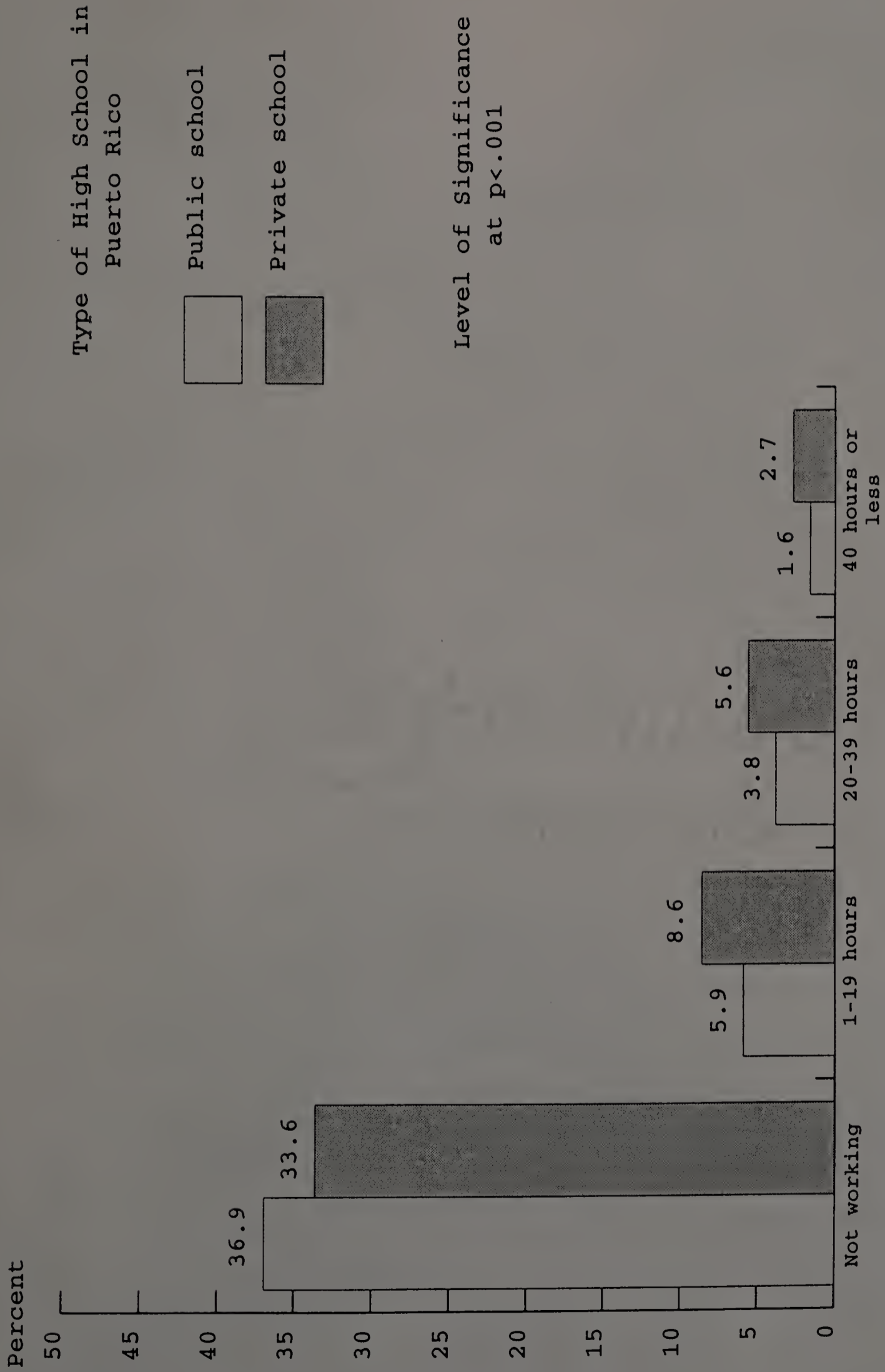


Figure 33. Percentage of Freshman Students by Type of High School in Puerto Rico and Number of Hours Working Per Week (Questions #5,19).

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