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A STUDY OF STUDENT RECRUITMENT IN
AUTOMOTIVE TECHNOLOGY
BACCALAUREATE DEGREE
PROGRAMS

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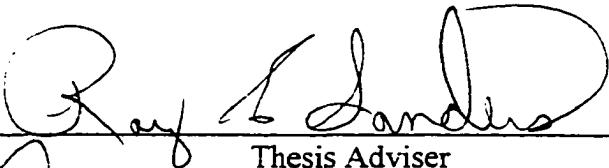
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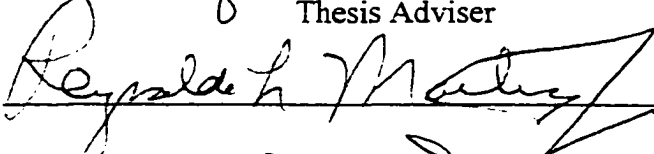
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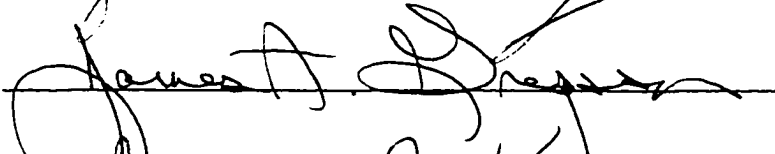
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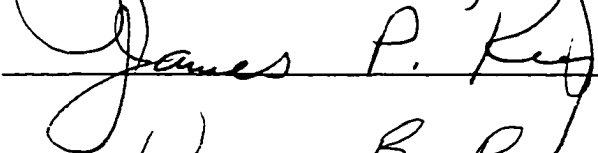
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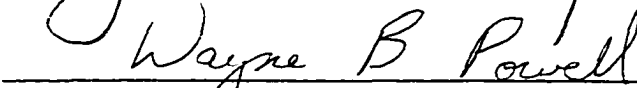


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CHAPTER I

INTRODUCTION

Most all occupations are being affected by rapidly changing technology.

Automotive technology is not an exception to this. Current automobiles are a challenge to repair with all of the electronics incorporated in them. The future automobile will be even more complicated with electrical power, navigational systems that use Global Positioning Satellites, electronic traffic monitoring, and automatic braking and steering systems (Riley, 1995).

Technicians with advanced technical skills on automobiles are in demand and this demand will continue to grow well into future (Cornish, 1996). This demand creates a need for education to continue to prepare people for society's technical needs into the next century. Because of the continued growth in technology and the importance of enrollment in industrial technology programs (Kicklighter, 1985), a descriptive study of student recruitment into Automotive Technology baccalaureate programs was deemed timely.

Enrollment numbers in universities are a continual concern. Programs, especially "non-academic" programs such as Automotive Technology, have to work extra hard to maintain and increase enrollment. However, no previous research on enrollment and

recruitment has been conducted specifically on baccalaureate Automotive Technology programs. This study represents the first study in the four-year Automotive Technology area.

A telephone survey conducted September 3-5, 1996 by the researcher supports the first statement in the previous paragraph. The eight universities in the United States that offer baccalaureate degrees in Automotive Technology were contacted. These institutions were selected with assistance from the recruiting staff of Electronic Data Systems (EDS) Customer Service Technologies in Troy, Michigan. EDS hires Automotive Technology graduates for entry level management positions for General Motors. Three questions were asked of the department head of each university (see Appendix A). Of the eight institutions, all stated that the optimum enrollment for their program is higher than their current enrollment. This verifies the need for increased enrollment which can be seen in Table I. The telephone survey also delineated a mean of 36.25% for the need of increased enrollment by the eight schools with a standard deviation of 17.31. One school did not have a baccalaureate program until five years ago. They recognized a high industry demand and added a four-year automotive program to their academic offerings. In addition, one school wrote a response which also represented the need for recruitment (see Appendix B).

Izadi and Toosi (1995) studied recruitment in baccalaureate Industrial Technology programs and found: "Despite all the rhetoric about quality in education, quantity of students in programs seems to be a major determinant in the program's share of

resources. Many schools are already feeling the pressure created by sagging enrollments” (p. 13).

Is enrollment in Industrial Technology (Automotive Technology) a current concern? Butler’s, Izadi’s, and Toosi’s (1994) research indicated that it was. They conducted a national study which included 18 of the 20 accredited Industrial Technology programs in the country. A three-round Delphi technique was used and they were asked the question: “What are the important research topics for Industrial Technology (IT)?” Of the 73 rankings, “Successful marketing strategies for Industrial Technology” was ranked as number nine. Ranked at number eighteen was “What recruiting strategies have proven successful in attracting high school students in two-year and four-year IT programs?”

Statement of the Problem

Current enrollment within Baccalaureate Automotive Technology programs have ranged from poor to good. There is room for increased enrollment in all of the programs. Recruitment is an important aspect to enhanced enrollments. However, recruitment factors within Baccalaureate Automotive Technology areas have not been identified.

Purpose of the Study

The purpose of this study was to identify effective recruitment factors as reported by students and faculty within baccalaureate automotive technology programs. This information will be helpful in recruiting students thereby filling the perceived future

TABLE I
ENROLLMENT TRENDS IN BACCALAUREATE
AUTOMOTIVE TECHNOLOGY PROGRAMS

| Categories | University # | | | | | | | |
|--|--------------|-----|-----|-----|-----|-----|-----|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| Present Enrollment | 170 | 60 | 70 | 60 | 54 | 140 | 100 | 60 |
| Enrollment 5 years Ago | 154 | 0 | 70 | 40 | 51 | 120 | 140 | 60 |
| Optimum Enrollment | 200 | 100 | 100 | 80 | 75 | 150 | 150 | 80 |
| Increase in Student Count between Present and Optimum Enrollment | 30 | 40 | 30 | 20 | 21 | 10 | 50 | 20 |
| % Increase between Present and Optimum Enrollment | 18% | 67% | 43% | 33% | 39% | 7% | 50% | 33% |
| Mean % Increase of Eight Institutions between Present and Optimum Enrollment | 36.25% | | | | | | | |
| Standard Deviation | 17.31 | | | | | | | |

need for automotive technologists.

Research Questions

The questions of this research study were:

1. What recruitment factors and recruitment hindrances have effected the attracting of students into baccalaureate Automotive Technology programs?
2. What are the most effective recruitment factors according to students enrolled in Automotive Technology programs?
3. Are there differences in effective recruitment factors for each gender, and if so to what extent?
4. Are there differences in effective recruitment factors for freshman, sophomores, juniors and seniors, and if so to what extent?
5. Are there differences in effective recruitment factors for the American Indian Asian, Black, White, Hispanic, and Multi-Racial, and if so to what extent?
6. What are the most effective recruitment factors and recruitment hindrances according to the faculty of the Automotive Technology programs?

Assumptions

The following assumptions were accepted in order to conduct this study:

1. The respondents remembered why they chose their specific institution and major.
2. The respondents were aware of which recruitment techniques worked for them.

Scope and Limitations

The following were scope and limitations of the study:

1. This study was limited to freshman, juniors, sophomores, and seniors enrolled in baccalaureate Automotive Technology programs and the faculty of these programs during the Spring of 1997.
2. This study was limited to Automotive Technology baccalaureate programs in the United States as identified by the recruiting staff of EDS Customer Service Technologies in Troy, MI.

Definitions

The following definitions were used in this study:

Automotive Technology Programs - Four-year baccalaureate degree programs that prepare graduates to work in the automotive service industry as an automotive manufacturer field representative for automotive dealerships and their technicians. Automotive technology programs fall under the umbrella of industrial technology programs.

Industrial Arts Education - This nomenclature has been replaced by Technology Education. See "Technology Education" for definition.

Industrial Technology Programs - Four-year baccalaureate degree programs that prepare graduates to work in the industrial manufacturing industry as a field representative or as a middle manager in a manufacturing plant.

Technical Education - An educational area typically taught at secondary and two-

year post-secondary levels “which involves a variety of technical occupational fields, such as communications, engineering-related technologies, and computer service” (Israel, 1995, p. 36).

Technician - A specialist in the technical details of automotive repair and service. The term “technician” has replaced the previous term of “mechanic”.

Technologist - A person who understands and works with a specific technology. This person works in conjunction with technicians and engineers.

Technology Education - An educational area that typically is taught in middle and secondary levels that offers an overview of “materials, processes, and technologies used in manufacturing, construction, transportation, communication, and other industries” (Israel, 1995, p. 36).

Vocational Education - “An educational area that encompasses a variety of programs designed to equip students with work and life skills” (Israel, 1995, p. 35).

CHAPTER II

REVIEW OF LITERATURE

The review of literature has been divided into five major areas. First, comments will be made on the overwhelming technology growth expected in the automotive area in the next 10-25 years. Second, college enrollment concerns will be addressed. Third, enrollment concerns in the specific area of technology will be reviewed. Fourth, student enrollment behavior theory will be discussed. The final area to be delineated will be college recruitment theory.

Technology Growth

This first section will address the amazing growth of technology expected in the automotive area in the next 10-25 years. Cornish (1996) said this change will be unbelievable: “the rate of global change -- technical, social, and cultural -- will continue to accelerate, creating innumerable surprises and dangers” (p. 30). Riley (1995) agreed with this notion when he spoke of future personal transportation: “But the magnitude of the problems and the technical challenges they [future transportation] represent are unlike anything humans have experienced” (p.8). According to Cornish (1996) and Patil (1996) two specific areas of growth are taking place: alternative fuels and electronics.

Chrysler, Ford, and General Motors have formed a partnership called the Partnership For a New Generation of Vehicles (PNGV). This partnership's goal is to develop a production prototype family sedan by the year 2005 that gets 80 miles per gallon (Patil, 1996). This will be done by one, or combination of, the following alternatives: diesel, hybrid electric/internal combustion engines, gas turbine/electric hybrid, or fuel cell (hydrogen).

A second major growth area will be in electronics. Automobiles possess a vast array of electronics now, but it will dramatically increase in the next 25 years. To illustrate these increases, Cornish (1996) stated that cars will soon drive by themselves. He further emphasized infrared cameras and computers will keep cars in their respective lanes by setting off an alarm if the vehicle starts to get off course. In addition, he stated "Electronically controlled automobiles may drive safely at much higher speeds than humans can handle. Drivers might simply select their destinations and then either work on a computer or relax watching TV while the car is under way" (p. 41).

Based on this need, technology education must stay current and continue to produce a substantial population of qualified graduates. Speelman and Stein (1993) stated: "Qualified, well trained technical personnel are more in demand than ever before as technology continues to develop and has an effect on society. Engineer, technologist, technical manager, and other related positions play a vital role in this evolutionary process" (p. 29).

College Enrollment Concerns

Based on the occupational outlook in automotive technology, educating our future technologists is extremely important. Four-year colleges and universities play a key role in the educational process for our future workforce. However, colleges struggle with maintaining and growing in their respective enrollments (Neustadt, 1994).

Hossler (1991) spoke on the concern of college enrollments and the need for effective recruitment:

College and university administrators have been concerned about student enrollments for more than a decade. The attention directed at enrollments is attributable to several factors, including a declining pool of high school graduates, external demands for improvements in student persistence rates as one measure of institutional effectiveness, and enrollment goals that target special student populations (minority students, talented students, and so on) (p.1).

Neustadt (1994) agreed with Hossler that college enrollment is a concern.

Neustadt said that Deans, Vice-Presidents and Presidents need to have a “Market Orientation” as recruitment and enrollment is a high priority for four-year institutions.

File, in the forward of Paulsen’s (1990) book College Choice: Understanding Student Enrollment Behavior, contributed to the delineation of concern for college enrollment management:

It is well understood that most colleges and universities can no longer be passive in attracting students to their campuses. In the past, having a high number of student applicants indicated healthy admissions. But more students are now sending out a greater number of applications as they shop around for the best academic and student aid opportunity. Consequently, more institutions are having to accept a greater number of applicants in order to ensure that they will have an adequate number of new students (p. xvii).

File continued:

Concerns about student recruitment are no longer limited to the admissions office. Deans, department chairs and individual faculty are increasingly being called upon to help increase student enrollment. Their knowledge of how and why students make choices can greatly influence their effectiveness in the admissions process (p. xvii-xviii).

These comments show the emphasis college and universities are, and should be putting on recruitment and enrollment.

Technology/Technology Education Enrollment Concerns

Because enrollment and student numbers are a concern in general for colleges and universities, it makes sense that there is a similar concern (in most cases a greater concern) about enrollment and student count in the technology programs at universities. Enrollment concerns relating to Industrial Arts/Technology Education, Industrial Technology, Automotive Technology, Ethnic Diversity in Technology Programs, and Gender Diversity in Technology Programs will be addressed in this section.

Industrial Arts/Technology Teacher Education

Industrial arts/technology teacher education has traditionally been a baccalaureate program at selected universities. These programs are directly related to technology programs such as Industrial Technology and Automotive Technology. These Industrial Arts/Technology Education programs suffer from the same concerns of enrollment as does Industrial Technology and Automotive Technology. Mobley (1988) in School Shop commented on recruitment specifically into vocational / technical / technology education programs:

For educators, recruiting students is very much a marketing issue. Students and their parents do have choices, often confusing choices, and educators who quietly hope that they will have enough enrollees to fill their classes will see students funneled off to more aggressive programs (p. 9).

The shortage of vocational / technical / technology teachers over the past 20 years has led to many studies to address recruitment and marketing of vocational / technical / technology teacher education programs. Some of the studies include: Craft, (1980); Daugherty & Boser, (1993); Devier, (1982); Edmunds, (1980); and Isbell & Lovedahl, (1989).

Industrial Technology

Industrial Technology educators have identified the concern of student enrollment by researching the area of recruitment into their technology fields. Bulter, Izadi, & Toosi, (1994/95); Izadi & Toosi, (1995); Kicklighter, (1985); Owens, (1988/89); Sanders, (1985); Speelman & Stein, (1993); and Wright & Soyster, (1985) all studied the effects and efficient techniques for recruitment into Industrial Technology programs. The results of these studies will be discussed later in this chapter.

Automotive Technology

The telephone survey described in Chapter I of this paper delineated the concern for enrollment in Automotive Technology programs. All eight of the universities contacted would prefer a higher enrollment count in their respective programs than what they currently have. This represented the need for increased enrollment in baccalaureate automotive programs. This section delineated the concern for adequate enrollment

management for technology areas specifically in universities and four-year colleges.

Ethnic Diversity in Technology Programs

Overall enrollment is a concern in technology programs. But specifically, the lack of ethnic diversity in the programs is a critical issue. As technology educators plan recruitment strategies, they must consider the future workforce. Sampler and Lakes (1994) spoke of the workplace of the 21st century:

In the workplace of the 21st century, some futurists predict that new employees will represent a multicultural and multiethnic mix of individuals with a wide variety of educational and training needs. ...Additionally, 22 percent of today's labor force constitutes minorities: African-Americans, Hispanics, Native Americans and Asian Americans. These new workforce entrants - and the many recent immigrants to these shores who speak non-English languages - comprise a widespread diversity of participants from different races and ethnicities, age groups, and socioeconomic backgrounds (p. 95).

In regards to ethnic diversity in school technology programs, Mobley (1988) said:

By the turn of the century, Hispanics will make up nearly 20 percent of the nation's population. In some states, such as California, that figure has already been surpassed. In the nation's 20 largest public school districts, Hispanics represent almost 30 percent of the student population (p. 10).

Based on the future multicultural society, technology programs must evaluate their recruitment of minorities. Parker (1997) stated in regard to technical recruitment of minorities at community colleges:

Colleges must also consider new avenues of strengthening their relationships with organizations that deal extensively with minority students in order to attract not only the conventionally aged 18-20-year-old freshman but other individuals who display significant potential to benefit from the community college experience (p. 14).

Ethnic diversity is a growing part of our nation, but this growth has not been represented in Industrial Technology/Automotive Technology programs. Butler, Izadi, &

Toosi's (1994) study on research topics for Industrial Technology found that: "Recruitment and retention of typically under-represented groups to Industrial Technology education" was identified as an "Important" research topic by 18 chairpersons of accredited Industrial Technology programs. Bickart's (1991) study on recruitment in to Engineering Technology programs addressed the concern of ethnic diversity. Bickart said: "enrollment levels and distribution rates of ethnic minorities ... must rise." (p. 419). Ethnic diversity in technology programs has been addressed by these studies, but from the conclusions drawn by these researchers, there is not much ethnic diversity in these programs.

Gender Diversity in Technology Programs

In addition to the lack of ethnic diversity in technology programs, there is also a lack of gender diversity in these programs. Historically and presently, technology programs have been dominated by males (Mobley, 1988). Because of the lack of females that have completed technical degrees, industry specifically searches for competent female graduates. Dykman (1997) commented on women in technical careers:

They can earn a lot more money as machinists or auto mechanics than they would as clerks or child-care workers - almost a half-million dollars more over a lifetime according to one estimate. Vocational educators are encouraged to recruit more girls into their trade programs. The federal government wants employers to hire more women into their skilled trades positions. Why? Because women are about 45 percent of the workforce but 57 percent of people in poverty. And they are only 2 percent of skilled trades workers (p. 17).

Because of these challenges, technology programs must be proactive. Burge and Culver (1994) spoke of gender equity in vocational education. They specifically addressed

strategies for developing gender diversity in vocational education and the workplace. They spoke of: (a) “Recruitment of nontraditionals”, (b) “Elimination of harassment”, (c) “Improving teacher and student interactions”, (c) “Enhancing individual autonomy”, (d) “Practice working together”, and (e) “Teachers as change agents” (p. 57-60). These strategies are to be used to overcome the barriers of women in technical and vocational education.

Three studies have been conducted concerning recruitment of females into Industrial Technology. Speelman and Stein (1993) studied factors that influence career choices made by female Industrial Technology students at Eastern Michigan University. The purpose of this study was to “determine what experiences may have influenced them to pursue a non-traditional career in Industrial Technology” (p. 29). The study found that home and high school influences were significant. Owens (1988/89) developed a video tape as a recruitment tool to increase female enrollment into the Industrial Technology program at Southeastern Louisiana University. The tape provided a 50% increase in female enrollment. Izadi & Toosi (1995) did a study on overall recruitment into Industrial Technology and differentiated gender in their instrument. The results showed that males and females are influenced by similar recruitment techniques. Recruitment of females into technology is an area that has great potential for improvement and growth. This discussion showed the concern for gender diversity in technology programs and that it needs to be studied.

Five areas of enrollment concern were discussed as they relate to technology programs at universities. Each represented unique challenges to recruitment practices of university technology programs.

Student Enrollment Behavior Theory

The concern for student count both generally in universities and in technology areas has been addressed in recent research. Because of this concern, a technology educator must study student enrollment behavior theory. This section will look at this in two areas. First the prominent models of enrollment behavior will be reviewed. Second, other important areas of behavioral study will be addressed.

Student Enrollment Behavior Theory Models

Models for student enrollment behavior theory started to emerge in the early 1980's (Paulsen, 1990). Several multi-stage models began to develop (Hanson & Litten, 1982; and Kotler & Fox, 1985). However, Hossler and Gallagher, (1987) and Jackson, (1982) developed a 3-stage model which has become the most widely accepted model in enrollment behavior. The steps include: a) college aspiration, b) search and application, and c) selection and attendance.

Stage 1 - College aspiration. The first stage of student choice is the college aspiration stage. This stage typically involves the student from early childhood through high school. In this stage, the student decides whether he/she wants to attend college or not (Hossler, Bean, & Assoc., 1990). The biggest factors that affect the decision are: a)

family background, b) academic ability, and c) high school and neighborhood context (Paulsen, 1990).

Stage 2 - Search and application. Once the student has decided that he/she will attend college, he/she enters the second stage which is the “search and application” stage. In this stage the students begin to seek and acquire information about colleges that they are considering (Hossler, Bean, & Assoc., 1990). Institutional characteristics are important in this stage; Ihlanfeldt (1980), identified four major characteristics that affect the second stage decisions. The first major characteristic is the programs or fields of study. Students narrow their choices down based on what subject area they are interested in studying. The second major area is the quality or reputation of the program or university. Students are concerned about the quality of the education that they will receive and the reputation of their degree. The area that affects this decision is the cost of going to a specific school. How much is tuition? How much will it cost to live at the university? The fourth characteristic that is important is the location of the university. Most students prefer to go to college close to home. The location of the school is a determining factor in stage two of the model.

Stage 3 - Selection and attendance. The third stage of “selection and attendance” is the final stage. This stage incorporates the students decision or actual choice of a university from the colleges that actually accepted them as a student. Research has indicated there are ten major attributes of institutions that strongly influence the students decision in the final selection. These ten attributes are: a) cost, b) financial aid, c)

programs, d) size, e) location, f) quality, g) social atmosphere, h) athletics, i) religious emphasis, and j) jobs available (Paulsen, 1990).

Other Factors That Influence Student Enrollment Behavior

Prospective students make their university selection using a three stage process (based on previously presented research). Many characteristics of the institutions affect student's decisions. Research shows there are other factors that strongly influence and affect a student's decision.

Parent influence is the first to be reviewed. Research strongly suggested the dramatic effect parents have on a student's college choice (DeMuth, 1986; Hossler, Bean, & Assoc., 1990; Major, 1991; Mitchell, 1994; Mobley, 1988; Sanders, 1985; and Speelman & Stein, 1993).

Demuth's (1986) study of influential factors on students which enter an area technical school found parents ranked first out of ten in influence. Major's (1991) study which was similar to Demuth's found parental influence to be ranked first out of eleven. Mitchell's (1994) study found parents ranked second as influencing students not to attend an area technical school. Sander's (1985) study on influences of decisions to attend 4-year mechanical power technology programs found that parents ranked 8th out of 25 influences.

Other research delineated the effect of parental influence. Hossler, Bean, & Assoc. (1990) stated: "Parents are very influential in the college choice process" (p. 105). They added: "Marketing programs should be designed specifically to reach parents" (p.

106). Mobley (1988) stated: “Parental influence is spoken and unspoken. Often, parents make open choices on behalf of their children, and here, the influence of mothers is not only more than educators realize, but is increasing” (p. 9).

Ken Gray and Erwin Herr’s (1995) book Other Ways To Win: Creating Alternatives for High School Graduates emphasized alternatives for high school students other than 4-year college programs. The authors continually stressed the influence that parents have on the high school graduate decision process. Gray & Herr said: “Although most teens who go to college will say they made the decision themselves, their decision was not made in a vacuum. Parents seem to be the important group influencing them The pressure [to attend college] is applied in the form of well-intentioned advice from parents” (p. 23).

A second area of influence on prospective students was from current college students. Litten (1989) notes that prospective students regard currently enrolled students as one of the best sources of information about a school. “Targeted peer recruitment can be one of the most effective means of marketing. Its success can be attributed to the fact that current students are current consumers, are close in age to the prospective students, and usually “tell it like it is” when discussing college” (Hossler, Bean, & Assoc., 1990, p. 106). Edmund’s (1980) study supported these statements and it found that a highly influential factor for a student choosing a 4-year technical degree was that college students recruited other college students and college students recruited high school students.

In addition to parental influence on college selection, and current college student influence, the image or reputation of an institution can play a key role in the college selection process. Paulsen (1990) described a comprehensive study of 3,000 high school seniors. They were asked to examine and rank by importance a list of 25 institutional characteristics. Among the eight top responses were: “general academic reputation” and “faculty teaching reputation” (p. 47). Wanat and Bowles (1992) study of recruitment of academically talented high school students in Wisconsin found similar responses. They stated:

All respondents mentioned academic reputation as one of the most important factors in narrowing their college choice. Respondents judged an institution’s academic reputation on the reputation of professors, research opportunities, challenge of coursework, prestige, and the recognition of the school’s name. One respondent wanted to attend a school where ‘the professors who wrote the textbooks’ were teaching. Another respondent made a final college choice based on ‘the research and projects I’ll have an opportunity to work on.’ Other academically talented students looked at the overall prestige of a school and recognition of its name in seeking the rigor of academically challenging programs (p. 25-26).

These three areas of influence all effect the enrollment decision process. Parental influence on college selection is powerful. Research indicates it is typically one of the strongest influences. Current students in colleges also can have a positive effect on prospective students as they consider a school and a degree program. Also, especially for higher academically talented students, the institutions reputation can be a positive influence in the selection process.

Summary

Understanding of student enrollment behavior theory is important for educators in higher education with the ever-increasing struggle for retention and increased enrollment numbers. The theory of Hossler & Gallagher (1987) and Jackson (1982) identified the three stages that prospective students go through during the process of college choice. Educators must be aware of this theory to further develop viable recruitment activities. In addition, this section of Chapter II addressed three other major influences that educators must be knowledgeable of: parents, current college students, and institutional reputation.

College Recruitment Theory

Many studies have been completed on the most effective recruitment techniques for college students. This section will highlight some of the recommended recruitment techniques based on recent research. Research within higher education and technology education agree that the following techniques are effective.

Campus Visits

Research indicates that having prospective students on campus is one of the most effective recruitment tools, (Craft, 1980; Edmunds, 1980; Hossler, Bean, & Assoc., 1990; Isbell & Lovedahl, 1989; Litten, 1989; Mobley, 1988; Wanat & Bowles, 1992; and Williams, 1993). Wanat and Bowles (1992) found: "... campus visits are viewed as the most useful source of information in making a decision and the most effective recruiting activity by college admission officers and high school counselors" (p. 23). Craft (1980)

also agreed and stated that tours of college or university industrial laboratory facilities by prospective students rank high in influences on students. Williams (1993) found the number one rank influence as a recruitment tool was “college days and nights are major contributors to recruitment” (p. 35). Hossler, Bean, & Assoc. (1990) further supported this and stated: “Research has shown that the campus visit is the most influential factor in a students decision to enroll in a college or university” (p. 113).

Based on these statements, studies have recommended campus visits as an extremely important recruitment tool. Edmunds (1980) recommended on-campus career days, open houses, and college sponsored contests for high school students. Wanat and Bowles (1992) suggested: “Campus officials or faculty members from departments representing students’ majors should conduct personalized tours of the campus and its facilities. Campus visits should highlight positive features of the campus and accomplishments of faculty, programs, and graduates” (p. 27).

Alumni

In addition to campus visits, alumni of the school can be a strong recruitment tool for a university. Many studies have emphasized this as an avenue of promotion and recruitment (Devier, 1982; Edmunds, 1980; Hossler, Bean, & Assoc., 1990; and Isbell & Lovedahl, 1989).

Isbell and Lovedahl (1989) found former students and alumni were consistently ranked within the top three recruitment techniques in their study of 169 universities. Based on these findings, their first recommendation was: “Faculty in charge of college

programs should maintain an up-to-date mailing list of their graduates, and they should correspond with them regularly” (p. 40).

Devier (1982), in his study on recruitment into industrial arts programs indicated the most effective technique was “college personal contacts with industrial arts teachers, especially alumni” (p. 30). Edmund’s (1980) study agreed with Devier’s in that: “The most effective means of recruitment was judged to be contacts with industrial arts teachers who are alumni” (p. 19).

Teachers

Alumni play a strong role in influencing students on college selection. As mentioned in the previous Alumni section, teachers (especially technology education or industrial arts teachers) who are alumni can also have a strong influence (Devier, 1982; Edmunds, 1980; and Isbell & Lovedahl, 1989). These past three studies all found that the number one influence of recruitment into university industrial arts/technology education programs came from high school industrial arts/technology education teachers.

Devier (1982) found: “College personnel contacts with industrial arts teachers, especially alumni, also had the highest effectiveness rating from the students” (p. 30). Edmunds (1980) found: “The most effective means of recruitment was judged to be contacts with industrial arts teachers who are alumni” (p. 19). Isbell and Lovedahl (1989) found: “... the technique that received the highest ranking was referral, by high school industrial arts/technology education teachers” (p. 38).

In the area of Industrial Technology, Izadi and Toosi (1995) indicated the third most effective recruitment technique in their study was the high school counselor/teacher. Demuth's (1986) study of recruitment into area vocational/technical schools also found that high school counselors ranked seventh, and high school teachers ranked eighth.

Articulation Agreements

Articulation between schools or 2+2 or 2+2+2 and school-to-work programs have also worked well as recruitment tools. This has been supported by the research of: Bickart, (1991); Isbell & Lovedahl, (1989); and Shaw, (1994).

Bickart (1994), in his research on recruitment into engineering programs recommended that faculty strongly utilize articulation. He stated: "Facilitate precollege partnerships between industry and the K-12 schools, with focus on increasing underrepresented minorities' interest in engineering and enriching their academic preparation for the study of engineering. Develop or expand transfer programs with community colleges" (p. 420). Shaw's (1994) research of articulation into Industrial Technology programs indicated the importance of using articulation as a tool in recruitment. He further stated: "Therefore, as Industrial Technology programs develop recruitment plans, involvement in 2+2+2 tech-prep projects in their service area, should be an important priority" (p. 17). He also said:

Involvement and input can also change parent and high school counselors attitudes towards these programs and increase the number of students pursuing technical education. Many of these better prepared students will choose to move directly into university baccalaureate programs instead of a community college program (p. 17).

Isbell and Lovedahl's (1989) study recommended: "Faculty should continue to articulate

their programs to community and technical schools because these are a valuable resource for transfer students. Contact with these institutions can provide immediate results and long-term benefits for the program” (p. 41).

Video Tapes

Promotional video tapes have also been used to market specific programs to encourage enrollment (Hossler, Bean, & Assoc., 1990; Owens, 1988,1989; and Mobley, 1988). Mobley (1988) stated: “The upbeat, student-oriented video raises general interest in industrial/technology/vocational classes that prepares for the teacher’s follow-up presentation of specifics about his or her program ” (p. 11). Owens (1988/89) developed a video to recruit females into the Industrial Technology program at Southeastern Louisiana University with a result of a 50% increase in female enrollment into the Industrial Technology program. Hossler, Bean, & Assoc. (1990) recommended the use of video tapes as a viable recruitment tool. They stated:

The videotape format lends itself to higher education marketing for many reasons. First, most students (of all types) are visually oriented; they spend more time watching television than reading. Most homes have videocassette recorders, as do high school guidance libraries. Students probably prefer watching videotapes to reading brochures. Videotapes can more effectively portray action and provide visual images than other media. Second, videotape has been described as a linear medium, one that communicates in a straight line from start to finish. Catalogues and viewbooks, on the other hand, can be scanned and sections or pages read out of sequence. Enrollment managers therefore have more control over the way their institutions are presented in videotapes (p. 108).

High School Visitation

Another effective recruitment technique that can be effective for universities has been for faculty and admission counselors to visit high schools (Craft, 1980). Williams (1993) study indicated the number one recruitment strategy was: “Regular high school visits by the college relations officers is a major contributor to recruitment at our institution” (p. 35). Hossler, Bean, and Assoc. (1990) stated: “Individual visits by admission representatives to high schools, community colleges, and companies can be useful methods of recruiting students, provided the locations are carefully selected” (p. 111).

Written Communications

Written communications can take on varying forms in the area of recruitment. Personalized letters from the university to a prospective student can be effective (Mobley, 1988). Isbell and Lovedahl (1989) recommended in their study:

Faculty should keep in touch with all students who are either recommended to the program or who inquire about it. They should invite interested high school students, through personalized letters, to visit the department. Follow-up letters to the students can be beneficial reminders about the program (p. 41).

Edmunds (1980) found the use of departmental brochures and newsletters mailed to alumni and interested parties to be popular and effective.

Summary of College Recruitment Theory

Seven different areas of college recruitment theory have been discussed in this section. Each of these techniques offers universities several viable opportunities to

increase and develop recruitment strategies utilized by the institution.

Summary

This literature review has addressed the changes in current automotive technology and the need for automotive technology education. Both concerns for overall university enrollment and technology enrollment were then emphasized based on the literature. Next, the three stage model of enrollment theory was addressed with other influential college selection factors. Finally, college recruitment theory was reviewed based on many of the effective recruitment techniques commonly used.

CHAPTER III

METHODOLOGY

The purpose of this study was to identify effective recruitment factors as reported by students and faculty in baccalaureate automotive technology programs. The means used to accomplish this task are described in this chapter.

The Population

The population of this study included eight universities in the United States that offer Automotive Technology baccalaureate degrees. These universities were selected with assistance from the recruiting staff of Electronic Data Systems (EDS) Customer Service Technologies in Troy, MI. This organization hires Automotive Technology graduates for entry level management positions for General Motors. The eight schools included the following: (1) Ferris State University in Big Rapids, MI, (2) Pittsburg State University in Pittsburg, KS, (3) Southern Illinois University at Carbondale in Carbondale, IL, (4) University of Southern Colorado in Pueblo, CO, (5) Central Missouri State University in Warrensburg, MO, (6) Weber State University in Ogden, UT, (7) Montana State University - Northern in Havre, MT, and (8) Indiana State University in Terre Haute, IN. All Freshman, Sophomores, Juniors and Seniors from each school were asked to participate in the study (N=607). Also, all the faculty of each school (n=36) were

asked to participate in the study by completing an instrument similar to the student's instrument.

Instrumentation

A descriptive or normative survey (Leedy, 1993) was used to collect the data for this study. Two versions of the instrument were used in the study. One survey was filled out by the students (see Appendix C). The second survey was completed by the faculty (see Appendix D). These instruments were identical except that the faculty version of the instrument did not include the demographic information, and the three open-ended questions in part three of the instrument were revised to better query the faculty (see Appendix D). The instrument used in this study was developed from previously published instruments (Bickert, 1991; Carter & Garigan, 1979; Devier, 1982; Isbell & Lovedahl, 1989; Izadi & Toosi, 1995; Pagano & Terkla, 1991; Sanders, 1986; Spielman & Stein, 1993; Williams, 1980). The instrument was constructed based on the instruments used in these previous studies and was modified by a committee composed of an admission/recruitment specialist, research specialist, and automotive faculty. This committee reviewed the instrument for face and content validity. The survey was then pilot tested in the Automotive Technology program at Pittsburg State University. The pilot study resulted in revision of some terminology for clarification and the addition of "Reputation of Automotive Program" to the list of 17 factors.

The instrument consisted of three parts. The first part asked for demographic information. The gender and ethnic breakdown was based on an instrument used by Izadi

& Toosi (1995). This section was further developed by the researcher and his committee. This first section was only incorporated into the student version of the instrument. The second part of the survey asked the participant to rate the importance of 17 recruitment factors. A Likert type scale was used for these recruitment factors: 0 = Not Important, 1 = Slightly Important, 2 = Important, 3 = Quite Important, 4 = Very Important. Section three of the instrument incorporated three qualitative open-ended questions for the participants to answer (see Appendix C for student instrument and Appendix D for faculty instrument).

Data Collection

The department chairpersons for each of the eight universities were contacted by telephone by the researcher on January 27, 1997 to request their participation. At this time the chairpersons were asked the number of students and number of faculty in their programs. This allowed the sending of the correct number of instruments. On January 29, 1997, the instruments were sent to each department chairperson with instructions to administer the instrument. Telephone calls were used as a follow-up to obtain the best return rate possible. All eight of the universities agreed to participate. Of the 607 student surveys sent, 383 were returned. Of the 383 student surveys returned, 382 were usable. This gave an overall return rate of student surveys of 61% with a usable return rate of 60.9% for the student surveys. Of the 36 faculty surveys sent, 27 were returned and usable which gave a return rate of 75%. On April 29, 1997, thank you letters were sent to

the participating departments and a promise of the results of the study were given (see Appendix F).

Statistical Method

Quantifiable data were collected in this study via a Likert Scale. The 17 recruitment techniques were rated by each participant. The computer statistical software SPSS was used as a mean to analyze the data. Frequency distributions and means were calculated to indicate central tendency. Standard deviations were used to describe variability.

Because part of the data were rank ordered (Borg & Gall, 1989; Kerlinger, 1992; and Leedy, 1993) a non-parametric one-way analysis was used to test for significant differences between the following three groups identified in the study: (a) Freshman, Sophomores, Juniors, and Seniors, (b) Gender, and (c) Ethnic background. The Kruskal-Wallis (H-Test) was chosen because it fit the need to compare three or more independent groups which were rank ordered.

The third section of the instrument incorporated three qualitative open-ended questions. The process for the analysis of this qualitative data is explained in the following section.

Qualitative Component

To add further insight to the study, a qualitative component was added. In addition to the qualitative data collected via the three open-ended questions on the student

survey and the faculty survey, a third qualitative source was added. A telephone interview was conducted with students from each of the universities. The department chairperson of each university was asked to recommend two students from their program who would participate in a short semi-structured telephone interview with the researcher. These individuals were contacted by telephone and asked seven in-depth questions. Two students from each institution netted a total of 16 participants who participated in the telephone interviews. The researcher's committee agreed the students should be of good standing (as determined by the chairperson) and have cumulative G.P.A. of 3.0 or higher. One of the students should be an underclassperson and the other an upperclassperson to provide diversity in their perspectives. These telephone interviews took place throughout March and April of 1997.

The telephone interviews were semi-structured in format (Fontana & Frey, 1994 in Denzin & Lincoln (Eds.)). This format incorporated seven preestablished open-ended questions (see Appendix E). Open-ended questions allowed the respondent opportunity to elaborate on each response. The questions were developed and validated by the researcher and the doctoral committee. The guidelines of development and evaluation of Frey (1989) were used by the committee. A pilot study of the telephone interview was conducted in February, 1997. No changes were made to the process based on the pilot study. The telephone interview lasted from 5 minutes to 10 minutes in length as suggested by Frey, 1989. Notes were taken during the interview and the interviews were recorded with a cassette tape recorder by the researcher. Each participant was informed of the need to record the interview and asked for permission to record the interview.

Recording the interview allowed for more accurate record of the data. Instead of verbatim transcription of the data, an “interview log” as recommended by Merriam (1988) was used to “capture the main points” (p. 84). The cassette tapes and researcher notes were used as the basis for analysis of the qualitative data for the telephone interviews.

Qualitative analysis. The qualitative data of this study was drawn from three separate sources. The first was three open-ended questions answered via the student instrument. The second qualitative data source was the three open-ended questions asked of the faculty via the faculty instrument. The third source of data came from the telephone interviews of 16 students. The telephone interviews consisted of seven open-ended questions.

A computer was not used for the process of qualitative analysis based on the recommendations of past qualitative researchers (Brent, 1984; Lyman, 1984). Merriam (1988) spoke of Lyman’s (1984) concerns when she stated:

Introducing a computer into the process [qualitative analysis] interjects a different medium and thus a different relationship with one’s data. This new relationship is more mechanical and impersonal, perhaps blocking insight that might otherwise emerge. Some of the richness of qualitative data may also be lost if one begins substituting technical language and quantification for description and metaphor. (p.161)

Because of these recommendations, index cards were used to analyze this information. Each statement made by the students and faculty in their qualitative responses was put on an individual index card. This analysis of the data followed the guidelines of Lincoln and Guba (1985). It started by unitizing the data. This meant writing all the qualitative responses on individual index cards and each card was coded to

identify its source. This process allowed for sorting of each individual response. The second step (as suggested by Lincoln and Guba) was to categorize the cards. The cards were separated by content or recurring concepts. The categories were “fleshed out” by the five guidelines of Holsti (1969):

1. The categories should reflect the purpose of the research. Sometimes one becomes committed to categories developed early on; care should be taken to ensure that categories are congruent with research goals and questions.
2. The categories should be exhaustive - that is, all relevant items in the sample of documents under study must be capable of being placed into a category.
3. The categories should be mutually exclusive - no single unit of material should be placed in more than one category.
4. The categories should be independent in that assignment of any datum into a category will not affect the classification of other data.
5. All categories should derive from a single classification principle. (p.99-100)

This process made the selected categories more robust. The categorizing of the cards provided for qualitative analysis of frequency of like responses, percentages, clustering, uniqueness, and cross-analysis. These were arranged to show frequency and percentages of responses. Rich narrative description was used to show clustering, uniqueness, and cross-analysis. Creswell (1994) spoke of methods to describe and report the qualitative data to the reader. One method was “intertwining quotations with (author’s) interpretations” (p. 160). This process was used in reporting and analyzing the descriptive data.

After the findings of the three qualitative sources were reported, the three sources of data were compared and cross-analyzed through the process of triangulation. Triangulation of the qualitative data helps ensure internal validity and reliability (Merriam, 1988). Creswell (1994) summarized the purposes of triangulation:

- triangulation in the classic sense of seeking convergence of results

- complimentary, in that overlapping and different facets of a phenomenon may emerge (e.g., peeling the layers of an onion)
- developmentally, wherein the first method is used sequentially to help inform the second method
- initiation, wherein contradictions and fresh perspectives emerge
- expansion, wherein the mixed methods add scope and breadth to a study (p. 175)

This process provided for further analysis of the data and emergence of trends, clusters and uniqueness.

CHAPTER IV

PRESENTATION OF FINDINGS

Introduction

The purpose of this study was to identify effective recruitment factors as reported by students and faculty in baccalaureate automotive technology programs. This chapter will present the findings from this study. The findings were generated from two separate components of the study: a quantitative and a qualitative component. The quantitative component incorporated two surveys which addressed ranking of recruitment techniques. A student survey was administered to students of eight universities and a faculty survey was administered to the faculty of the eight universities. The qualitative component contained three open-ended questions on each of the two surveys and sixteen student telephone interviews. This chapter will discuss the response rates, demographics of the participants, quantitative data, and qualitative data.

Response Rate

The population of this study included eight universities that offer baccalaureate automotive technology programs in the United States. All eight universities participated in the study. The faculty contacts at the eight universities indicated in advance of the

mailing that they had 627 freshman through seniors in their automotive programs (n=627). The researcher received back 382 surveys which gave a usable return rate of 60.9%. See Table II for a list of university student participation. In faculty survey participation, 27 of 36 surveys were returned giving a usable return rate of 75%. No follow-up of nonrespondents was attempted.

Demographics

The demographics of the participants were addressed in the student instruments. Three categories were included: (a) academic status, (b) gender and, (c) racial/ethnic background. These demographic characteristics are summarized in Table III. The most frequent replies came from Seniors (42.1%). Of the students that responded, the majority were males (94.8%) and White (88%).

Quantitative Component

This section of chapter four will answer the six research questions based on the quantitative sections of the student surveys and the faculty surveys.

Research Question One

Research question one for this study asked “What recruitment factors and recruitment hindrances have effected the attracting of students into baccalaureate Automotive Technology programs?” The hindrances will be discussed in the qualitative

TABLE II
STUDENT PARTICIPATION BY UNIVERSITY

| University | # of Students | % of Return | % of Total |
|------------|---------------|-------------|------------|
| 1 | 115 | 67.6 | 30.1 |
| 2 | 30 | 50.0 | 7.9 |
| 3 | 27 | 38.6 | 7.1 |
| 4 | 39 | 65.0 | 10.2 |
| 5 | 39 | 72.2 | 10.2 |
| 6 | 58 | 41.4 | 15.2 |
| 7 | 27 | 27.0 | 7.1 |
| 8 | 47 | 78.3 | 12.3 |

n=382

TABLE III
SUMMARY OF DEMOGRAPHIC CHARACTERISTICS
OF STUDENT RESPONDENTS

| Demographics | Frequency | Percent |
|-----------------------------------|-----------|---------|
| Academic Status | | |
| Freshman | 62 | 16.2 |
| Sophomore | 67 | 17.5 |
| Junior | 92 | 24.1 |
| Senior | 161 | 42.1 |
| Gender of Respondents | | |
| Female | 19 | 5.0 |
| Male | 362 | 94.8 |
| Missing Value | 1 | .3 |
| Racial/Ethnic Background | | |
| American Indian or Alaskan Native | 4 | 1.0 |
| Asian or Pacific Islander | 15 | 3.9 |
| Black or African American | 7 | 1.8 |
| White, not Hispanic | 336 | 88.0 |
| Hispanic | 9 | 2.4 |
| Multi-Racial | 7 | 1.8 |
| Missing Value | 4 | 1.0 |

n=382

Note. Due to rounding of percentages the demographic categories may not add up to exactly 100%.

part of this chapter. Table IV indicated the frequency of “very important” responses, and the mean and standard deviation as to the student’s perception of the effectiveness of recruitment factors. A mean value of 0-.5 = not important, .6-1.5 = slightly important, 1.6-2.5 = important, 2.6-3.5 = quite important, 3.6-4.0 = very important. Only four recruitment factors had a mean value of two or higher. They included (a) Reputation of the Automotive Program ($\bar{M} = 3.39$ $SD = .98$), (b) Reputation of the University ($\bar{M} = 2.86$ $SD = 1.25$), (c) Campus Visit ($\bar{M} = 2.37$ $SD = 1.34$), and (d) Parent(s)/Relatives ($\bar{M} = 2.26$ $SD = 1.41$). No factors had a mean score higher than 3.6 indicating “very important”. Two factors had a mean score in the “quite important” range. Ten of the seventeen factors fell in the “important” range. The recruitment factors which were rated as the least effective to the students were: (a) Bulletin Board Advertising at my Previous School ($\bar{M} = .91$ $SD = 1.23$), and (b) Athletic Advisor/Coach ($\bar{M} = .78$ $SD = 1.15$). It should be noted that some of the factors may be interpreted as recruitment techniques. This breakdown will be addressed and discussed further in chapter five.

Research Question Two

Research question two for this study asked “What are the most effective recruitment factors according to students enrolled in Automotive Technology programs?” The four recruitment factors that have a mean above two were addressed in the previous research question. The “Reputation of the Automotive Program” stood out singly as the most effective recruitment consideration of the students. The mean for this factor was 3.39, which was .53 points over the second highest mean value. Also, this factor had the

TABLE IV
SUMMARY OF STUDENT RESPONSES

| Recruitment Factors | Frequency "very important" | Mean | Standard Deviation |
|---|-------------------------------|------|-----------------------|
| Reputation of Automotive Program | 238 | 3.39 | .98 |
| Reputation of the University | 155 | 2.86 | 1.25 |
| Campus Visit | 85 | 2.37 | 1.34 |
| Parent(s)/Relatives | 92 | 2.26 | 1.41 |
| High School/Community Coll. Counselor/Teacher | 73 | 1.94 | 1.48 |
| Technology Recruitment Activities | 61 | 1.90 | 1.43 |
| Friend(s) at University/Community Coll./High School | 74 | 1.84 | 1.52 |
| Reading This University's Catalog | 29 | 1.74 | 1.21 |
| Community in which University is Located | 50 | 1.74 | 1.46 |
| Promotional Materials (Brochures, Letters, Videos) | 37 | 1.60 | 1.40 |
| Alumni of this University | 48 | 1.52 | 1.44 |
| University Recruiters Visiting My High School | 38 | 1.29 | 1.43 |
| Articulation or Direct Transfer from Community | 46 | 1.29 | 1.48 |
| Admission Office at This University | 28 | 1.25 | 1.32 |
| University Recruiters Visiting My Community Coll. | 33 | 1.04 | 1.40 |
| Bulletin Board Advertising at my Previous School | 19 | .91 | 1.26 |
| Athletic Advisor/Coach | 12 | .78 | 1.14 |

Scale: 0-.5 = not important, .6-1.5 = slightly important, 1.6-2.5 = important,
2.6-3.5 = quite important, 3.6-4.0 = very important

lowest standard deviation of .98 and was the only factor with a standard deviation below 1.00. Also, this factor had a frequency of 238 (“very important”) responses which was 83 points above the second factor. The second most important factor rated by students was “Reputation of the University” with a mean value of 2.86 and a standard deviation of 1.25. See Table IV for a listing of student responses. These are ranked according to the mean from highest to lowest.

Research Question Three

Research question three for this study asked “Are there differences in effective recruitment factors for each gender; and if so, to what extent?” The Kruskal-Wallis test was used to determine if there are significant differences in effective recruitment decisions for each gender. The Kruskal-Wallis is a nonparametric one-way analysis of variance. The nonparametric test was used because the population distribution is not assumed normal. The computer statistical program SPSS was used to compute the Kruskal-Wallis. An alpha of .05 was used to determine significance. Not one of the seventeen recruitment factors showed significance based on gender, see Table V for results of the Kruskal-Wallis test.

Research Question Four

Research question four for this study asked “Are there differences in effective recruitment factors for freshman, sophomores, juniors and seniors, and if so to what extent?” The Kruskal-Wallis test indicated three of the recruitment factors that were

significant based on the student's academic status. The first was "University Recruiters Visiting my High School". This factor was significant ($p = .040$) with a mean score of: 220.44 for freshman, 198.87 for sophomores, 187.25 for juniors, 177.25 for seniors. The second factor that was significant ($p = .041$) was "Athletic Advisor/Coach", with a mean ranking of: 218.02 for freshman, 189.31 for sophomores, 195.43 for juniors, and 177.57 for seniors. The third factor that showed significance ($p = .046$) was "Community in which University is Located", with a mean ranking of 204.46 for freshman, 197.75 for sophomores, 208.01 for juniors, 173.18 for seniors. See Table VI for the results of the Kruskal-Wallis test.

Research Question Five

Research question five for this study asked "Are there differences in effective recruitment factors for the American Indian, Asian, Black, White, Hispanic, and Multi-Racial, and if so to what extent?" The Kruskal-Wallis found one recruitment factor that was significant based on Racial/Ethnic background. The recruitment factor was "Bulletin Board Advertising at my Previous School". This factor had a significance of .004 with a mean ranking of 170.83 for American Indian or Alaskan Native, 260.61 for Asian for Pacific Islander, 144.07 for Black or African American, 182.13 for White, not Hispanic, 232.17 Hispanic, and 263.36 for Multi-Racial. See Table VII for the summary of the Kruskal-Wallis test in respect to Racial/Ethnic Background.

TABLE V
SIGNIFICANT DIFFERENCES BASED ON
KRUSKAL-WALLIS TEST FOR GENDER AND GROUP MEANS

| Recruitment Factors | Gender | Female Means | Male Means |
|--|--------|--------------|------------|
| Friend(s) at University/Com. College/High School | .626 | 178.45 | 190.61 |
| Reading This University's Catalog | .471 | 207.16 | 189.09 |
| High School/Com. College Counselor/Teacher | .736 | 195.97 | 187.57 |
| Parent(s)/Relatives | .727 | 197.82 | 189.06 |
| Alumni of this University | .497 | 204.92 | 187.67 |
| Reputation of Automotive Program | .765 | 196.82 | 190.17 |
| Technology Recruitment Activities | .499 | 206.16 | 189.15 |
| University Recruiters Visiting My High School | .512 | 205.16 | 189.20 |
| Athletic Advisor/Coach | .776 | 183.89 | 190.32 |
| Admission Office at This University | .173 | 223.00 | 189.32 |
| Campus Visit | .066 | 233.18 | 187.19 |
| Reputation of the University | .381 | 210.97 | 189.42 |
| University Recruiters Visiting My Com.College | .100 | 225.53 | 187.59 |
| Community in which University is Located | .157 | 224.26 | 188.72 |
| Bulletin Board Advertising at my Previous School | .472 | 203.92 | 187.68 |
| Promotional Materials (Brochures, Letters, Videos) | .835 | 193.42 | 188.24 |
| Articulation of Direct Transfer from Com. College | .642 | 200.61 | 189.44 |

* $p < .05$

TABLE VI
SIGNIFICANT DIFFERENCES BASED ON
KRUSKAL-WALLIS TEST FOR ACADEMIC STATUS AND GROUP MEANS

| Recruitment Factors | Academic Status | Fresh Means | Soph Means | Junior Means | Senior Means |
|--|--------------------|----------------|---------------|-----------------|-----------------|
| Friend(s) at University/Com. College/High School | .373 | 192.06 | 196.41 | 203.65 | 180.04 |
| Reading This University's Catalog | .171 | 200.73 | 192.92 | 205.45 | 176.84 |
| High School/Com. College Counselor/Teacher | .554 | 204.15 | 184.42 | 192.13 | 182.18 |
| Parent(s)/Relatives | .289 | 208.62 | 185.54 | 196.23 | 179.80 |
| Alumni of this University | .943 | 195.70 | 184.34 | 188.89 | 188.38 |
| Reputation of Automotive Program | .234 | 197.21 | 202.85 | 198.41 | 179.37 |
| Technology Recruitment Activities | .090 | 210.28 | 199.61 | 197.92 | 174.65 |
| University Recruiters Visiting My High School | *.040 | 220.44 | 198.87 | 187.25 | 177.25 |
| Athletic Advisor/Coach | *.041 | 218.02 | 189.31 | 195.43 | 177.57 |
| Admission Office at This University | .165 | 210.79 | 189.31 | 201.43 | 179.31 |
| Campus Visit | .857 | 181.31 | 197.79 | 190.15 | 190.07 |
| Reputation of the University | .457 | 204.93 | 199.52 | 180.26 | 188.28 |
| University Recruiters Visiting My Com. College | .997 | 187.54 | 190.26 | 190.75 | 190.42 |
| Community in which University is Located | *.046 | 204.46 | 197.75 | 208.01 | 173.18 |
| Bulletin Board Advertising at my Previous School | .342 | 197.41 | 204.37 | 186.04 | 181.01 |

TABLE VI (Continued)

| Recruitment Factors | Academic Status | Fresh Means | Soph Means | Junior Means | Senior Means |
|---|--------------------|----------------|---------------|-----------------|-----------------|
| Promotional Materials (Brochures, Letters, Videos) | .356 | 206.58 | 196.39 | 187.33 | 179.92 |
| Articulation or Direct Transfer from Community College | .118 | 174.78 | 177.22 | 209.83 | 190.94 |

* $p < .05$

TABLE VII
SIGNIFICANT DIFFERENCES BASED ON
KRUSKAL-WALLIS TEST FOR MINORITIES AND GROUP MEANS

| Recruitment Factors | Racial/ Ethnic | Indian | Asian | Black | White | Hispan. | Multi Racial |
|--|-------------------|--------|--------|--------|--------|---------|-----------------|
| Friend(s) at University/Com. College/High School | .407 | 149.25 | 242.37 | 178.79 | 186.60 | 207.67 | 171.43 |
| Reading This University's Catalog | .733 | 220.00 | 211.27 | 198.57 | 185.66 | 198.11 | 234.93 |
| High School/Com. College Counselor/Teacher | .189 | 134.63 | 208.77 | 118.50 | 185.46 | 221.61 | 240.50 |
| Parent(s)/Relatives | .256 | 165.50 | 205.73 | 138.71 | 187.61 | 157.63 | 265.57 |
| Alumni of this University | .159 | 151.00 | 180.93 | 188.64 | 185.46 | 185.33 | 293.71 |
| Reputation of Automotive Program | .527 | 198.13 | 175.47 | 154.79 | 191.47 | 186.72 | 131.71 |
| Technology Recruitment Activities | .316 | 158.00 | 188.93 | 226.86 | 185.46 | 254.44 | 226.86 |
| University Recruiters Visiting High School | .696 | 184.75 | 191.30 | 204.36 | 186.21 | 221.61 | 243.67 |
| Athletic Advisor/Coach | .136 | 214.50 | 242.97 | 199.71 | 184.57 | 183.28 | 249.42 |
| Admission Office at This University | .100 | 243.25 | 215.00 | 153.14 | 186.57 | 184.67 | 287.57 |
| Campus Visit | .494 | 207.25 | 202.82 | 114.50 | 187.93 | 193.81 | 217.43 |
| Reputation of the University | .733 | 228.88 | 161.43 | 168.93 | 190.63 | 198.88 | 155.86 |
| University Recruiters Visiting My Community College | .060 | 203.75 | 218.73 | 178.67 | 184.37 | 188.17 | 294.36 |
| Community in which University is Located | .104 | 172.88 | 202.97 | 116.86 | 188.81 | 165.89 | 279.14 |

TABLE VII (Continued)

| Recruitment Factors | Racial/ Ethnic | Indian | Asian | Black | White | Hispan. | Multi Racial |
|---|-------------------|--------|--------|--------|--------|---------|-----------------|
| Bulletin Board Advertising at My Previous School | *.004 | 170.83 | 260.61 | 144.07 | 182.13 | 232.17 | 263.36 |
| Promotional Materials (Brochures, Letters, Videos) | .274 | 113.67 | 212.14 | 141.71 | 186.11 | 189.72 | 252.14 |
| Articulation or Direct Transfer from Community College | .506 | 185.63 | 213.83 | 162.14 | 186.37 | 198.61 | 250.79 |

* $p < .05$

Research Question Six

Research question six for this study asked “What are the most effective recruitment factors and recruitment hindrances according to the faculty of the Automotive Technology programs?” The findings for this question are based on the survey in which the faculty (n=27) ranked the seventeen recruitment factors based on importance. The hindrances will be discussed in the qualitative part of this chapter. Means and standard deviations were calculated for each of the factors. The faculty ranked 13 of the 17 recruitment factors over a mean value of two. As discussed in research question number one, the students only ranked four techniques over a mean value of two. The faculty identified the following three recruitment techniques as the most important: (a) Reputation of Automotive Program ($\underline{M} = 3.78$ $SD = .42$); (b) Campus Visit ($\underline{M} = 3.30$ $SD = .67$); and (c) Friend(s) at University/Community College/ High School ($\underline{M} = 3.26$ $SD = .81$). Reputation of the Automotive Program was the only factor rated as “very important”. The next ten factors in rank were rated as “quite important”. The next five factors in rank were rated as “important”. Findings of the faculty responses can be seen in Table VIII.

Qualitative Component

This section of the chapter will discuss the qualitative data collected in the study. A major purpose for the qualitative component was to address areas of recruitment influence that were not identified in the quantitative section. Three sources were used to

TABLE VIII
SUMMARY OF FACULTY RESPONSES
(n=27)

| Recruitment Factors | Frequency "very important" | Mean | Standard Deviation |
|--|-------------------------------|------|-----------------------|
| Reputation of Automotive Program | 21 | 3.78 | .42 |
| Campus Visit | 11 | 3.30 | .67 |
| Friend(s) at University/Com. College/High School | 12 | 3.26 | .81 |
| High School/Com. College Counselor/Teacher | 12 | 3.22 | .85 |
| Reputation of the University | 11 | 3.11 | .89 |
| Alumni of this University | 9 | 3.04 | .90 |
| Parent(s)/Relatives | 7 | 2.85 | .93 |
| Articulation or Direct Transfer from Com. College | 5 | 2.85 | .82 |
| Technology Recruitment Activities | 6 | 2.78 | .89 |
| Promotional Materials (Brochures, Letters, Videos) | 2 | 2.67 | .73 |
| University Recruiters Visiting My Com. College | 5 | 2.52 | 1.12 |
| Community in which University is Located | 2 | 2.27 | .78 |
| University Recruiters Visiting My High School | 2 | 2.15 | 1.00 |
| Admission Office at This University | 1 | 1.85 | 1.00 |
| Bulletin Board Advertising at my Previous School | 0 | 1.85 | .82 |
| Reading This University's Catalog | 1 | 1.73 | .87 |
| Athletic Advisor/Coach | 1 | 1.15 | 1.00 |

Scale: 0-.5 = not important, .6-1.5 = slightly important, 1.6-2.5 = important,
2.6-3.5 = quite important, 3.6-4.0 = very important

collect the qualitative data. The first source was three open-ended questions asked of the students on the student survey. The second source of qualitative data was three open-ended questions asked of the faculty on the faculty survey. The third source of qualitative data was seven questions asked to sixteen students through a telephone interview. This section of Chapter IV will discuss the findings of these three sources of qualitative data. After the findings are reported, the three sources of data will be compared through a process of triangulation.

Analysis of Qualitative Data

Chapter III described the process in which the qualitative data was analyzed. However, a brief review will be given. The analysis of the data followed the guidelines of Lincoln and Guba (1985). This started by unitizing the data. This meant writing all the individual qualitative responses on individual index cards. Each card was coded to identify its source. This process allowed for sorting of each individual response. The second step (as suggested by Lincoln and Guba) was to categorize the cards. The cards were separated by content or recurring concepts. Each statement from each qualitative source was written on an index card and categorized by content or theme. The categorizing of the cards provided for qualitative analysis based on frequency of like responses, percentages, clustering, uniqueness, and cross-analysis.

Qualitative Source One: Student Questions

The first source of qualitative data was the three open-ended questions asked of the student on the student survey. The findings for each of the three student questions will be presented here.

Student Question One. This question asked: “What was the most important factor that influenced you to major in Automotive Technology at this University?” Of the 382 usable student surveys returned, 495 separate responses were given to question number one. Table IX shows the summary of the responses by categories. Twenty two categories were developed based on these responses. The first 17 responses represented the recruitment techniques that were used in the quantitative part of the survey. Categories 18-22 were new categories based the student responses. The following were the new categories: (a)18. Low Cost of Schooling, (b) 19. Job Placement/Career Opportunities, (c) 20. Personal Interest in Automobiles, (d) 21. Student Organizations-VICA, and (e) 22. Miscellaneous. Based on frequencies and percentages, the following were the top three categories for the responses of student question one: (a) 6. Reputation of Automotive Program (frequency = 147, 29.69%), (b) 20. Personal Interest in Automobiles (frequency = 117, 23.63%), and (c) 19. Job Placement/Career Opportunities (frequency = 58, 11.71%). These top three categories combined included a total frequency of 322 (65.03%) out of the total of 495 responses.

Further Description of Responses to Student Question One. Many descriptive statements were made by the students in response to the first open-ended question. Examples of some of the student’s statements will be given here to provide further insight

TABLE IX
SUMMARY OF STUDENT RESPONSES TO QUESTION ONE
(n=495)

| Question One Categories | # (Frequency) | % of Total |
|--|---------------|------------|
| 1. Friend(s) at University/Community College/ High School | 18 | 3.63 |
| 2. Reading This University's Catalog | 0 | 0 |
| 3. High School/Community College Counselor/ Teacher | 29 | 5.85 |
| 4. Parent(s)/Relatives | 14 | 2.82 |
| 5. Alumni of this University | 10 | 2.02 |
| 6. Reputation of Automotive Program | 147 | 29.69 |
| 7. Technology Recruitment Activities | 1 | .20 |
| 8. University Recruiters Visiting My High School | 3 | .60 |
| 9. Athletic Advisor/Coach | 0 | 0 |
| 10. Admission Office at This University | 0 | 0 |
| 11. Campus Visit | 11 | 2.22 |
| 12. Reputation of the University | 27 | 5.45 |
| 13. University Recruiters Visiting My Community College | 0 | 0 |
| 14. Community in which University is Located | 30 | 6.06 |
| 15. Bulletin Board Advertising at my Previous School | 0 | 0 |

TABLE IX (Continued)

| Question One Categories | # (Frequency) | % of Total |
|--|---------------|------------|
| 16. Promotional Materials (Brochures, Letters, Videos) | 1 | .20 |
| 17. Articulation or Direct Transfer from Community College | 6 | 1.21 |
| 18. Low Cost of Schooling | 15 | 3.03 |
| 19. Job Placement/Career Opportunities | 58 | 11.71 |
| 20. Personal Interest in Automobiles | 117 | 23.63 |
| 21. Student Organizations-VICA | 1 | .20 |
| 22. Miscellaneous | 7 | 1.41 |

to the findings. Examples will be given from the top three categories followed by a few examples from the Miscellaneous category.

The first category to be discussed will be category six, “Reputation of Automotive Program”. This category tended to be influential to students making college decisions. Almost 30% of the 495 responses to question one dealt with the reputation of the automotive program. Many students stated “the reputation” was the most influential factor. One student said: “The reputation of the automotive [program] at this university is outstanding”. Another said: “The reputation of the technology program is what brought me here. My sister went to school here and told me about the program while I was still in the Marine Corps.” Another student said: “I am interested in the area of Auto Tech and _____ has one of the best programs around (I’ve heard) so I decided to attend school here.” “I want to run my family dealership and this program offered the best schooling toward my goal” was stated by a student. Many students discussed the national reputation of their schools. Some students commented: “I had heard from several people that it was one of the best automotive schools in the country”, “Finding an accredited program that is so respected nationally”, “The reputation of the school being #1 in automotive technology”, and “national recognition in the automotive field.” These examples are representative of 147 different comments by the students in response to question one. These quotes show the student’s enthusiasm for the reputation of the automotive programs of the their individual schools. Automotive technology recruitment needs to be aware of the significance that their reputation has on their recruitment activities.

The second area that showed the strongest response to question one was category 20, "Personal Interest in Automobiles". This response had 117 separate statements with 23.63% of the total. Several students made comments dealing with their interest in cars. Some examples were: "My love for working on cars", "What I was most interested in", "This is where my heart is!", and "The word Automotive". Other students elaborated more that their interest in cars is what influenced them the most to major in automotive: "I have always enjoyed automobiles and decided to leave my study in the medical field to do something I enjoy", "I love working on vehicles, did not want to go to a votech school, and found _____ with a two year auto service degree and a two year management degree", "I like working on cars and wanted a career in it, but also wanted a four year degree", and "I got my first car, a 1966 Mustang fastback, at 15. I worked on it all the way throughout high school. I had fun fixing my car and every now and then a friend's car broke down, they let me fix it, and I had fun." One hundred and seventeen responses stated the biggest influence on the student to major in automotive technology was their interest in cars. This category was not incorporated into the quantitative survey, and shows that this influence may be more unique to the automotive area than to other industrial technology areas.

The area that had the third highest frequency in response to question one was category 19, "Job Placement/Career Opportunities". This category had 58 statements with a percentage of 11.71. In this area the students continually commented on the excellent job placement with national corporations. Some students shared their thoughts on what influenced them to attend their automotive program: "job placement percentage

of Automotive majors”, “The excellent placement of graduates from the Automotive major”, “More job opportunities and higher salary”, “The high rate of job placement after graduation. This is nearly 100%, and that appealed to me”, and “The employment afforded by the program’s cooperative partnerships and ties to Automotive manufacturers.” These comments illustrate the importance that job placement had on recruiting these students. A student wrote: “Was enrolled in Engine Theory class with _____ and was invited to EDS (Electronic Data Systems) information night. I was impressed with what they had to say and changed my major the following semester.” This student shared how having an automotive company on campus influenced him to switch majors to automotive based on the job placement and career opportunity. This next quote shares how the career opportunities of the automotive major influenced the student: “The fact that I like dealing with mechanical things. However I didn’t want to be a wrench turner for the rest of my life. This program will give me the opportunity to be involved with mechanics, but have a more business like job.” These examples represent the importance of “Job Placement/Career Opportunities” to recruiting automotive students.

It should also be noted that five of the established categories (from the development of the quantitative survey) had no representation at all in responses to the first student question. See Table IX. These following five areas are not important for the recruitment of automotive majors: (a) Reading This University’s Catalog, (b) Athletic Advisor/Coach, (c) Admission Office at This University, (d) University Recruiters

Visiting My Community College, and (e) Bulletin Board Advertising at my Previous School.

To close out the discussion of responses to student question one, a few examples will be given of the statements that were put in the miscellaneous category (#22). They include: “good question”, “failing out of mechanical engineering school at KU”, and “Destiny”.

Educators addressing automotive technology recruitment must look at the reputation of their programs, potential student’s interest in automobiles, and job placement and career opportunities as critical elements of student recruitment. This qualitative question also shows that the university’s catalog, athletic coach, admission offices, university recruiters visiting community colleges, and bulletin board advertising are not effective recruitment tools for automotive technology.

Student Question Two. This question asked: “What factor may have hindered you from majoring in Automotive Technology at this University?” Of the 382 usable student surveys returned 266 separate responses were given to question number two. Table X shows the summary of the responses by category. Seventeen categories were developed by the guidelines of Lincoln and Guba (1985) as was done with the categories for question one. The 17 categories represent the student responses to what may have hindered them from majoring in Automotive Technology. Based on the frequencies and percentages, the following were the top two categories for the responses of student question two: (a) 11. Cost of Going to School (frequency = 49, 18.42%) and (b) 8. University Community/Distance from Home (frequency = 44, 16.54%). The next level of

responses were in the cluster of approximately 20 responses. Three factors were in the cluster, they were (a) 6. Required Course work (frequency = 27), (b) 9. Lack of Knowledge of Program/Publicity (frequency = 28), and (c) 13. Lack of Automotive Interest/Background (frequency = 23).

Further Description of Responses to Student Question Two. Many descriptive statements were made by the students in response to the second open-ended question. Examples of some of the student's statements will be given here to provide further insight to the findings. Examples will be given from the top three categories followed by a few examples from the Miscellaneous category.

The first category to be discussed will be category eleven, "Cost of going to School". This category apparently is a large obstacle to students attending universities. Of the 266 responses, 49 expressed a concern of cost, 18.42%. Ten of the 49 statements simply said "Money", others said: "Lack of funds", "Cost of tuition", "Lack of money", and "Cost of school". A student elaborated more by stating: "Cost of the school may have prevented me from going to school at all." Another student said: "Money - I don't have much but with grants and scholarships and loans, I can go to school." This response shows automotive recruiters that the cost of school can be a major deterrent for students. Perhaps automotive scholarships should play a larger role in automotive recruitment.

The second area that showed strong response to question two was category 8. "University Community/Distance From Home". This response had 44 statements with a percentage of 16.54. Seventeen of the 44 responses addressed that the university was far from the student's home town. This delineated that students typically want to be close

TABLE X
SUMMARY OF STUDENT RESPONSES TO QUESTION TWO
(n=266)

| Question Two Categories | # (Frequency) | % of Total |
|---|---------------|------------|
| 1. Recruiters/Instructors From Another School | 3 | 1.13 |
| 2. University Faculty | 10 | 3.76 |
| 3. High School/Community College Counselor | 2 | .75 |
| 4. Parent(s)/Relatives | 7 | 2.63 |
| 5. Old Facilities/Outdated Technology | 9 | 3.39 |
| 6. Required Course Work | 27 | 10.15 |
| 7. Time Required | 10 | 3.76 |
| 8. University Community/Distance from Home | 44 | 16.54 |
| 9. Lack of Knowledge of Program/Publicity | 28 | 10.53 |
| 10. Transfer of Credit/Articulation | 9 | 3.39 |
| 11. Cost of Going to School | 49 | 18.42 |
| 12. Lack of Job Opportunity | 10 | 3.76 |
| 13. Lack of Automotive Interest/Background | 23 | 8.65 |
| 14. Negative Image of Automotive Technology | 9 | 3.39 |
| 15. Not Having a Campus Visit | 1 | .38 |
| 16. Lack of Gender/Race Diversity | 5 | 1.88 |
| 17. Miscellaneous | 20 | 7.52 |

to their home area. Recruiters need to be aware of this, and try to help the potential student become comfortable in the new community. Other students commented that the community may have prevented them from majoring in Automotive Technology: “The fact that this town sucks”, “The weather”, and “The location is one of the big things. It’s very boring in _____”. Automotive faculty may not be aware how important the location and community can be to a prospective student. Should time be taken to show the student around the campus and community and time taken to help the student adjust to the new setting?

The area that had the third highest frequency in response to question two was category 9, “Lack of Knowledge of Program/Publicity”. This category had 28 statements with a percentage of 10.53. In this area the students spoke of the lack of advertisement and information available about the program. The following quotes illustrate the concern: “There is NO advertisement or information about this program anywhere on school grounds!”, “I had never heard of the 4 year auto program before attending college”, “Me not knowing that this was the #1 school in the nation”, “If my professor had not mentioned and pushed the program, I would not have known. More publicity is needed, get the word out”, “Not being introduced to the program and what it offers (lack of advertisement)”, and “I didn’t know what the program was all about. There needs to be more publicity about it.” These comments adequately illustrate the student’s perception of the need to further publicize the four year automotive programs. Automotive faculty may believe that their programs are properly advertised, but it seems the students do not agree.

Twenty of the 266 responses did not properly fit into a developed category. These 20 were put into the Miscellaneous category. See Table VIII. A few of the responses will be given as examples to the reader: “Well, I’m a cowboy to begin with, but I got injured so can’t continue in that rugged life, sooo”, “Hit lotto after high school”, “Death”, “The school itself has some Mickey-Mouse policies”, “Not wanting to live in Detroit”, and “Fear”.

Automotive Technology should not only look at what positively influences students to major in the program (student question one), but should also look at what may prevent the student from majoring in Automotive Technology (student question two). This qualitative question shows automotive recruiters that the cost of school, university location, and lack of program publicity can be significant deterrents to recruiting automotive technology majors.

Student Question Three. This question asked: “If you had friends who considered majoring in Automotive Technology at this university, but did not; what discouraged them from doing so?” Of the 382 usable student surveys returned 180 separate responses were given to question number three. Table XI shows the summary of the responses by category. The 17 categories that were developed for student question two were used for categorizing responses to question three. An additional category was found necessary as the responses were sorted: “Commitment/Obligations”. This was designated category 17, and Miscellaneous was numbered 18. Based on the frequencies and percentages, the following was the top category for the responses of student question three: 11. Cost of Going to School (frequency = 38, 21.22%). The following three

responses were clustered in the 20-25 response range: (a) 13. Lack of Automotive Interest/Background (frequency = 25), (b) 8. University Community/Distance from Home (frequency = 23), and (c) 7. Time Required (frequency = 22). These top four categories combined give a total frequency of 108 (60%) out of 180.

Further Description of Responses to Student Question Three. Many descriptive statements were made by the students in response to the third open-ended question. Examples of some of the student's statements will be given here to provide further insight to the findings. Examples will be given from the top three categories followed by a few examples from the other 18 categories.

The first category to be discussed will be category 11, "Cost of going to School". This category had the highest response of the 180 responses with 38 statements. This was 21.11% of the total. It should be noted that this category also had the highest response rate in student question two. In question two, students said "Cost" was the factor that may have hindered them the most from attending the automotive program, and in question three, the students said that "Cost" was the factor that most prevented their friends from majoring in Automotive Technology. In this area, students said: "Housing, financial problems", "Cost and low financial aid packages" were reasons their friends didn't attend. A student commented: "I had a friend who wants to attend but he doesn't have enough money." Another stated: " They were not sure they could go to school because of financial reasons.". As with question two, question three found "Cost" as the strongest reason for students not to major in Automotive Technology.

TABLE XI
SUMMARY OF STUDENT RESPONSES TO QUESTION THREE
(n=180)

| Question Three Categories | # (Frequency) | % of Total |
|---|---------------|------------|
| 1. Recruiters/Instructors From Another School | 0 | 0 |
| 2. University Faculty | 2 | 1.11 |
| 3. High School/Community College Counselor | 0 | 0 |
| 4. Parent(s)/Relatives | 0 | 0 |
| 5. Old Facilities/Outdated Technology | 4 | 2.22 |
| 6. Required Course Work | 13 | 7.22 |
| 7. Time Required | 22 | 12.22 |
| 8. University Community/Distance from Home | 23 | 12.78 |
| 9. Lack of Knowledge of Program/Publicity | 19 | 10.56 |
| 10. Transfer of Credit/Articulation | 0 | 0 |
| 11. Cost of Going to School | 38 | 21.11 |
| 12. Lack of Job Opportunity | 1 | .56 |
| 13. Lack of Automotive Interest/Background | 25 | 13.89 |
| 14. Negative Image of Automotive Technology | 9 | 5.00 |
| 15. Not Having a Campus Visit | 0 | 0 |
| 16. Lack of Gender/Race Diversity | 2 | 1.11 |
| 17. Commitment/Obligations | 16 | 8.89 |
| 18. Miscellaneous | 12 | 6.67 |

The response that received the second largest number of statements addressing why their friends did not major in automotive technology was category 13. “Lack of Automotive Interest/Background”. This category has 25 (13.89%) statements. Several statements are given here to illustrate the perceptions of the students: “Lack of automotive experience and background”, “Lack of automotive in their younger years. They feel some of us have an advantage”, “They didn’t grasp the technical part of the program”, and “Interest in other areas and the belief that formal schooling was not needed in the mechanic trade. They believed that the private business would provide the necessary training.” Apparently, many of the students had friends who choose not to major in the automotive area because of their lack of automotive knowledge prior to going to college.

The third area that was addressed the most by the students in response to question three was 8. “University Community/Distance from Home”. This category had a response rate of 23 (12.78%). This category also had the second highest rate of response to question two. Students said: “Nothing to do in this little town”, “Too far from home”, “They wanted to be closer to home”, and “They didn’t want to travel so far to get the education”. The location of the university seems to be critical to the student making a decision about where to attend college.

Category 14. “Negative Image of Automotive Technology” had two interesting comments as to why their friends did not choose to major in Automotive Technology. They were: “They think that we are just a bunch of grease balls sometimes.”, and “Many people believe this curriculum is for auto mechanics. Grease monkeys.”.

Category 16. “Lack of Gender/Race Diversity” also had a few statements worth acknowledging: “Female students afraid to enter program”, and “ There is a lack of minorities in the fields of technology. This allows closed minded individuals the chance to make it [un]comfortable for individuals different from them. Technology does not get into ethical teaching of minorities.”

Category 18. “Miscellaneous” had twelve interesting comments. One was “Grading scale”, another was “They were idiots”. Overall, question three had many interesting responses. Automotive recruiters need to be aware that cost, distance from home, and lack of automotive knowledge can be key reasons why students do not choose their automotive programs.

Qualitative Source Two: Faculty Questions

The three open-ended questions from the student survey represented the first qualitative data source. The three open-ended questions from the faculty survey represent the second qualitative data source. Of the 36 faculty represented in the eight universities, 27 faculty members responded with a complete survey. The quantitative part of the faculty survey was reviewed earlier in this chapter, this section will review the findings of the qualitative open-ended faculty questions.

Faculty Question One. This question asked: “What do you feel are the most important factors that influence students to major in Automotive Technology at your university?”. Of the 27 faculty surveys, 68 separate statements were given in response to question one. Table XII shows the summary of the responses by categories. Since this

question is basically the same as student question one, the same categories from student question one were used for faculty question one. Based on frequencies and percentages, the following were the top two categories for the responses to faculty question one: 6. Reputation of Automotive Program (frequency = 20, 29.41%), and 19. Job Placement/Career Opportunities (frequency = 18, 26.47%). These top two categories combined give a total count of 38 (55.88%). It should be noted that there is a large gap between these first two factors and the remaining factors. The third ranked factor only had six responses.

Further Description of Responses to Faculty Question One. Many descriptive statements were made by the faculty in response to the first open-ended question. Examples of some of the faculty statements will be given here to provide further insight to the findings. Examples will be given from the top two categories followed by a few examples from the other categories.

The first category to be discussed will be category six, "Reputation of Automotive Program". This category had the highest response rate from the faculty at 20 statements with 29.41% of the total. Student question one also had this same category with the highest response rate. In this case the students and the faculty agree that the most influential recruitment factor is the reputation of the automotive programs. The following statements illustrate the faculty's responses to question one: "Reputation of the quality of our automotive program", "Faculty and facilities", "Faculty reputation", "Image of school", "The reputation of the program", and "Reputation and quality of the program". These responses show the faculty's understanding of the importance of reputation to

TABLE XII
SUMMARY OF FACULTY RESPONSES TO QUESTION ONE
(n=68)

| Question One Categories | # (Frequency) | % of Total |
|--|---------------|------------|
| 1. Friend(s) at University/Community College/ High School | 4 | 5.88 |
| 2. Reading This University's Catalog | 0 | 0 |
| 3. High School/Community College Counselor/ Teacher | 6 | 8.82 |
| 4. Parent(s)/Relatives | 3 | 4.41 |
| 5. Alumni of this University | 1 | 1.47 |
| 6. Reputation of Automotive Program | 20 | 29.41 |
| 7. Technology Recruitment Activities | 3 | 4.41 |
| 8. University Recruiters Visiting My High School | 0 | 0 |
| 9. Athletic Advisor/Coach | 0 | 0 |
| 10. Admission Office at This University | 0 | 0 |
| 11. Campus Visit | 4 | 5.88 |
| 12. Reputation of the University | 1 | 1.47 |
| 13. University Recruiters Visiting My Community College | 0 | 0 |
| 14. Community in which University is Located | 0 | 0 |
| 15. Bulletin Board Advertising at my Previous School | 0 | 0 |
| 16. Promotional Materials (Brochures, Letters, Videos) | 0 | 0 |

TABLE XII (Continued)

| Question One Categories | # (Frequency) | % of Total |
|---|---------------|------------|
| 17. Articulation or Direct Transfer from Community College | 0 | 0 |
| 18. Low Cost of Schooling | 0 | 0 |
| 19. Job Placement/Career Opportunities | 18 | 26.47 |
| 20. Personal Interest in Automobiles | 6 | 8.82 |
| 21. Student Organizations-VICA | 0 | 0 |
| 22. Miscellaneous | 2 | 2.94 |

recruitment.

The second area that received the highest response rate from the faculty to question one was 19. “Job Placement/Career Opportunities”. This category had 18 statements with a percent of 26.47. There was agreement between the faculty and the students in this area as well. In student question one, category 19. “Job Placement/Career Opportunities” received the third highest response rate. The following statements reflect the faculty’s thoughts on recruitment influence: “Placement history”, “Industry demand for graduates”, “Placement of graduates, success of graduates”, “Good jobs upon graduation! Strong placement stats!”, “Placement record (100%), Salaries of graduates”, “Cooperation with major manufacturers”, “Job prospects upon graduation”, and “Placement of the program, Salary”. Job placement and career opportunities seem to be a critical component to automotive recruitment.

Job placement and reputation of the automotive program together represented 55.88% of the faculty responses to the first question. These two areas are similar and show how critical these areas are perceived by the faculty. Two other statements of the faculty will be shared here to offer insight in the other categories: “Former auto instructors help spread the word and point them to _____”, “Personal contact with college faculty. We recruit in the classroom - not the counselor’s office”. The first quote was from category three, high school teacher being an influence for recruitment. The second quote was from category seven, technology faculty recruiting for their own programs.

Faculty Question Two. This question asked: “What factors may have hindered students from majoring in Automotive Technology at your University?”. Of the 27

faculty surveys, 49 separate statements were given in answering question two. Table XIII shows the summary of the responses by categories. Since this question is basically the same as student question three, the same categories from student question three were used for faculty question two with one exception. Category 17. “Commitment /Obligations” from the student question was replaced with “School Reputation” for Category 17 with the faculty responses. Based on frequencies and percentages, the following were the top two categories faculty said may have prevented students from majoring in automotive technology: 9. Lack of Knowledge/Publicity (frequency = 12, 24.49%), and 11. Cost of Going to School (frequency = 8, 16.33%). These top two categories combined give a total count of 20 (40.82%). As with the agreement of the students and faculty for question one, the students and faculty again agreed. As student question three results are compared to the results of faculty question two, both the students and the faculty found the “Cost of Going to School” and “Lack of Knowledge of Program/Publicity” as the top two categories.

Further Description of Responses to Faculty Question Two. Many descriptive statements were made by the faculty in response to the second open-ended question. Examples of some of the faculty statements will be given here to provide further insight to the findings. Examples will be given from the top two categories followed by a few examples from the other 18 categories.

The first category to be discussed will be category 9, “Lack of Knowledge of Program/Publicity”. This category had the highest response of the 49 responses (24.49%) with 12 statements. The following statements illustrate what the faculty perceived may

TABLE XIII
SUMMARY OF FACULTY RESPONSES TO QUESTION TWO
(n=49)

| Question Two Categories | # (Frequency) | % of Total |
|---|---------------|------------|
| 1. Recruiters/Instructors From Another School | 0 | 0 |
| 2. University Faculty | 0 | 0 |
| 3. High School/Community College Counselor | 3 | 6.12 |
| 4. Parent(s)/Relatives | 5 | 10.20 |
| 5. Old Facilities/Outdated Technology | 3 | 6.12 |
| 6. Required Course Work | 4 | 8.16 |
| 7. Time Required | 0 | 0 |
| 8. University Community/Distance from Home | 4 | 8.16 |
| 9. Lack of Knowledge of Program/Publicity | 12 | 24.49 |
| 10. Transfer of Credit/Articulation | 0 | 0 |
| 11. Cost of Going to School | 8 | 16.33 |
| 12. Lack of Job Opportunity | 0 | 0 |
| 13. Lack of Automotive Interest/Background | 1 | 2.04 |
| 14. Negative Image of Automotive Technology | 4 | 8.16 |
| 15. Not Having a Campus Visit | 0 | 0 |
| 16. Lack of Gender/Race Diversity | 0 | 0 |
| 17. School Reputation | 3 | 6.12 |
| 18. Miscellaneous | 2 | 4.08 |

have hindered students from majoring in automotive technology: “Lack of knowledge of program (poor publicity)”, “Did not realize the many career opportunities in automotive”, “Students may not have information”, “Awareness of program mission”, “Lack of knowledge about opportunities”, and “People do not know the program is here. Some who know think we train mechanics. University recruiting - people do not understand what industrial automotive tech is about”. The faculty agree that accurate information is not adequately available to prospective students.

The second area that showed a strong response to this question was 11. “Cost of Going to School”. This category resulted in eight responses with a 16.33 percent of the 49 statements. The following statements illustrate the faculty’s perception of cost being a deterrent to students majoring in automotive technology: “High non-resident tuition”, “Money - It costs to go to school and school attendance reduces earning power. (Can’t meet car payments!)” This response agreed with what the students stated that finances seems to be a significant concern of prospective students.

Parental influence was also mentioned by the faculty: “Many parents do not understand the difference between auto technology and technician training”, and “Most parents and students don’t understand the opportunities available to automotive graduates”. Comments were also made about the negative image of the automotive technology: “Society’s stereotype of Auto profession”, and “The traditional mindset among teachers, parents, and counselors that if you major in Automotive you will be a grease monkey the rest of your life.” Statements were also made about the poor

reputation of the university has a negative factor for incoming students: “Poor reputation of University as a party school”.

Faculty question two identifies reasons why students may not attend automotive technology programs. It is interesting to see how close the students and the faculty agreed that Cost, Distance from home, and Lack of publicity are significant reasons for students not choosing automotive technology. Faculty obviously are aware of these reasons, but are they developing recruitment strategies which address these issues?

Faculty Question Three. This question asked: “If your Automotive department has a formal recruiting program, please describe it or enclose written description if available.” Of the 27 faculty surveys, 30 statements were given in response to question three. Table XIV shows the summary of the responses by categories. Eight categories were developed from processing the responses. Based on frequencies and percentages, the following were the top two categories for the responses to faculty question three: 1. “Faculty recruiting at High Schools/Community Colleges” (frequency = 13, 43.33%), and “Automotive Day/Contest at University” (frequency = 6, 13.33%). One should note the gap between the first categories and the second and remaining categories. The top two categories combined give a total count of 19 (63.33%).

Further Description of Responses to Faculty Question Three. Many descriptive statements were made by the faculty in response to the third open-ended question. Examples of some of the faculty statements will be given here to provide further insight to the findings. Examples will be given from the top two categories.

TABLE XIV
 SUMMARY OF FACULTY RESPONSES TO QUESTION THREE
 (n=30)

| Question Three Categories | # (Frequency) | % of Total |
|--|---------------|------------|
| 1. Faculty Recruiting at High Schools/ Community Colleges | 13 | 43.33 |
| 2. University Recruiter | 1 | 3.33 |
| 3. Recruitment through Student Organizations | 1 | 3.33 |
| 4. Automotive Day/Contest at University | 6 | 20.00 |
| 5. Direct Mail | 4 | 13.33 |
| 6. Brochures | 3 | 10.00 |
| 7. Video | 1 | 3.33 |
| 8. Articulation | 1 | 3.33 |

The first category to be discussed will be category 1, "Faculty Recruiting at High Schools/Community Colleges". This category had the highest response of the 30 responses with 13 statements. This was 43.33% of the total. The following statements illustrate some of the recruitment techniques the automotive programs use: "Our recruiting program is not formal, but we as faculty aim to recruit at x - number of schools each year. We also recognize the importance of networking with high school instructors.", "We faculty travel to high schools and talk to whole classes or multiple classes. It is a soft sell - emphasizing auto demonstrations (teaching) and info about why you need further education past high school and how to pick a post-secondary school.", "While it isn't formal, each instructor tries to visit at least 5 high schools and put on presentations to students on new technology and what we have to offer at our school.", "Each instructor has an assigned school to contact in area.", and "Other than occasional trips to make a presentation to high school or vo-techs, not much recruitment is done".

In addition to faculty doing recruitment visits to high schools and community colleges, the university automotive programs use Automotive Day/Contests as recruitment tools. This category had the second highest response to question three with six separate statements with 20% of the total responses. Faculty stated: "We host an annual open house for regional high school students", and "Our formal recruiting program is our two-part automotive contest for high school students. We make contact with the students and instructors twice. The written contest winners are also invited to a California Grand Prix Race, tour of automotive companies (racing, aftermarket). We are also attempting to meet with students, parents and dealer representatives but it is not

formalized.” These statements illustrate some of the recruitment efforts that the university automotive programs are presently using.

Qualitative source two, the open-ended responses from faculty, addressed several important recruitment issues. The data indicated that the reputation of the automotive program and job placement/career opportunities are seen as key recruitment influences. The data found lack of knowledge of program/publicity and cost of going to school as strong detrimental influences as seen by the faculty. Also, the data showed university faculty visiting high schools and university automotive days are important recruitment techniques that are presently being used. A later section in this chapter - Triangulation - will further address the faculty responses as they are compared to the student responses.

Qualitative Source Three: Student Telephone Interviews

The third source of qualitative data for this study were 16 student telephone interviews conducted by the researcher. Two students from each of the eight universities were called and asked seven open-ended questions. The data collection procedures for this source was discussed in Chapter III. The responses were categorized similarly to the two previously discussed qualitative sources. The responses for each of the seven questions will be discussed in this section.

Telephone Interview Question One. This question asked: “How did you learn that this automotive technology program existed?” This question resulted in 17 separate statements from the 16 students who were interviewed. Five of the 17 statements said that the students had learned about the automotive technology program from their high

school teacher. This was the answer that had the strongest response with 29.41% of the total answers. Four of the students said they had heard about the program through their community college. Two students said they had heard about it from the university faculty. Two students stated they had heard about it from their friends. Two students found out about the program through campus visits. One student found out about it through VICA in high school, and another student through his/her parts manager at the dealership that he/she was working at. The strongest response to this question was the high school teacher. The following statement from a student was stated during the interview: "I learned about this program, I took a course in high school and the teacher that was the instructor, he is an alumni of this program and that was the way I learned about it. He suggested that I might come down and check out the program, so I did, that's how I learned about the program."

Telephone Interview Question Two. This question asked: "Who influenced you the most in your decision to attend this automotive technology program?" This question resulted in 17 separate statements from the 16 students who were interviewed. Seven of the 17 statements indicated that nobody influenced them to attend which resulted in 41.18% of the responses. Three students said university faculty influenced them the most. Two students said friends influenced them the most. Two students said their high school teacher influenced them the most. Two students said their community college teacher influenced them the most. One student said his/her mother influenced him/her the most. The university faculty had the greatest influence on most students with three

responses, while friends, high school teachers, and community college teachers followed with two.

Telephone Interview Question Three. This question asked: “Who if anyone, may have reduced your enthusiasm for majoring in automotive technology?” This question resulted in 16 separate statements from the 16 students who were interviewed. Nine of the 16 statements indicated that nobody reduced their enthusiasm to major in automotive technology which resulted in 56.25% of the responses. Four students said a family member had reduced their enthusiasm. Three of the students said their employer didn’t want them to quit work and go to school. A student said in the interview: “Probably my former employer, I was very productive for him and he sent me to extended training classes, specialized courses from General Motors and Ford and he paid for all that training and I all of a sudden just up and left him. So that was probably the only road block that I had.”

Telephone Interview Question Four. This question asked: “What influenced you the most in your decision to attend this automotive technology program?” This question resulted in 21 separate statements from the 16 students who were interviewed. Seven of the 21 statements indicated that the career opportunities available after graduation influenced them the most to attend which resulted in 33.33% of the responses. Five of the responses said their interest in cars was the most influential factor. Four of the responses said that the school being close to home was the most influential factor. Each of the following factors that influenced the student the most had one response: time, campus visit, school reputation, friend, and father is a diesel mechanic. The highest

response to this question related to career opportunities, the following comments were made by a student during the telephone interview: “Probably that it is one of the few in the nation that had an automotive four-year degree. I had more career opportunities after graduation.”

Telephone Interview Question Five. This question asked: “What if anything, may have reduced your enthusiasm for majoring in automotive technology?” This question resulted in 16 separate statements from the 16 students who were interviewed. Five of the 16 statements indicated that nothing reduced their enthusiasm to major in automotive technology which resulted in 31.25% of those questioned. Five of the students also said that money or the cost of going to school many have reduced their enthusiasm which also was 31.25% of the responses. Work in the student’s home town resulted in two responses. Location of the university, student’s low grades, general education requirements, and if the technology wasn’t current at the university all received one statement from a student. Other than “nothing”, the cost of going to school showed the strongest response of what may have prevented a student from majoring in automotive technology.

Telephone Interview Question Six. This question asked: “What do you believe are the most effective recruiting techniques for automotive technology?” This question resulted in 20 separate statements from the 16 students who were interviewed. Six of the 20 statements indicated university faculty speaking in high school classes was the most effective recruiting technique. This response had the highest rate with 37.50%. The second most important factor to the student was employment opportunities with three

responses. Two students suggested corporate employees going to high schools to speak. Two students suggested that campus visits are the most effective. Providing information to high schools was addressed as most important by two students. The following techniques were each recommended by one student: current college students going to speak in high school classes, alumni going to high schools to share, automotive career day at university, faculty visiting dealerships, and “no idea”. The strongest answer to this question was faculty visiting and sharing at high schools. The following statement was made during the telephone interview which illustrates this theme: “The thing that caught me is when one of my other [university] instructors, _____, came to my [high] school, he was able to list off all the students from (student’s home town) that were going to school here by name and he knew them. Then when I came up here to check out the school he remembered my name, still.”

Telephone Interview Question Seven. This question asked: “What recruitment techniques do you suggest being used to a greater extent?” This question resulted in 20 separate statements from the 16 students who were interviewed. Five of the 20 statements indicated “nothing” should be used to a greater extent. This response had the highest rate with 25%. The second strongest suggestion was faculty visiting high school and community colleges with four responses at 20%. Three students suggested more publicity to high schools, two students suggested current college students going to share at high schools, and two students suggested corporate employees sharing at high schools. Each of the following techniques were suggested to be used to a greater extent by a student: college should hire a recruiter, automotive career day at university, campus

visits, and newer equipment. This question indicates that students believe the automotive programs need to be shared more with high school students by faculty, college students, and corporate employees.

The seven open-ended questions of the student telephone interviews generated insightful data. This data will be illustrated further as it is compared and cross analyzed with the three student survey questions and the three faculty survey questions through the process of triangulation in the next section.

Triangulation

Triangulation is the process of comparing and contrasting multiple sources of data. Creswell (1994) summarized the purposes of triangulation:

- triangulation in the classic sense of seeking convergence of results
- complimentary, in that overlapping and different facets of a phenomenon may emerge (e.g., peeling the layers of an onion)
- developmentally, wherein the first method is used sequentially to help inform the second method
- expansion, wherein the mixed methods add scope and breadth to a study (p. 175)

The three sources of qualitative data will be compared in this section. The three sources include (a) three open-ended questions from the student survey, (b) three open-ended questions from the faculty survey, and (c) seven open-ended questions from the student telephone interviews. Each of these three sources will be addressed based on the similarity of the subject or theme of the questions from each source (i.e., the subject of student question one, faculty question one, telephone question one, telephone question two, and telephone question four are similar). Based on the convergence of the results,

three themes have emerged and each of these will be expounded from data from each of the three sources. See Table XV for summary of triangulation themes.

Theme One. The first theme to be discussed is what was the most influential factor of recruitment to the respondent. Student question one asked: What was the most important factor that influenced you to major in Automotive Technology at this University? Faculty question one asked: What do you feel are the most important factors that influence students to major in Automotive Technology at your university? Telephone question one asked: How did you learn that this automotive technology program existed? Telephone question two asked: Who influenced you the most in your decision to attend this automotive technology program? Telephone question four asked: What influenced you the most in your decision to attend this automotive technology program?

These questions all revolve around the theme of what recruitment techniques are the most influential. The responses to these questions in many ways are similar but yet there are uniqueness as well. The responses (given in order of frequency) to student question one were: (a) reputation of the automotive program, (b) interest in cars, and (c) job placement/career opportunities. The faculty said: (a) reputation of the automotive program, (b) job placement/career opportunities, and (c) high school and community college teacher and interest in cars. Telephone question one resulted in the high school teacher being the strongest informant. Telephone question two found that the university faculty and high school teacher were the most influential people. Telephone question

four found the following to be the most influential: (a) job placement/career opportunities, (b) interest in cars, and (c) university close to home.

The results of these questions show some influences to students. First, the reputation of the automotive program seems to be a very influential recruitment factor. Second, job placement, career opportunities is an important factor in all three sources. Third, interest in cars showed up in all three data sources. Fourth, high school, community college, and even university faculty have a strong influence on a student's decision.

Theme Two. The second theme to be discussed is what may hinder or prevent student's from majoring in automotive technology. Student question two asked: What factor may have hindered you from majoring in Automotive Technology at this University? Student question three asked: If you had friends who considered majoring in Automotive Technology at this University, but did not; what discouraged them from doing so? Faculty question two asked: What factors may have hindered students from majoring in Automotive Technology at your University? Telephone question three asked: Who if anyone, may have reduced your enthusiasm for majoring in automotive technology? Telephone question five asked: What if anything, may have reduced your enthusiasm for majoring in automotive technology?

These questions all revolve around the theme of what may prevent students from majoring in automotive technology. The responses to student question two were: (a) cost of going to school, (b) university community/ distance from home, and (c) lack of knowledge of program/publicity. The responses to student question three were: (a) Cost

of going to school, (b) Lack of knowledge of program/publicity, and (c) University community/distance from home. The faculty said: (a) Lack of knowledge of program/publicity, (b) Cost of going to school, and (c) Parent(s)/Relatives. Telephone question three showed that the employer was rated highest in reducing enthusiasm. Telephone question five found that the expense of going to school is the factor that reduced enthusiasm.

The results of these questions support a theme that are explicit in all three data sources. The cost of going to school had the highest response for the students in student question two and three. It had the second highest response in the faculty results. It had the highest response to interview question five. The second area that preventing students from attending automotive technology programs was the lack of knowledge of the program/publicity. This concern was addressed by the students in both student questions two and three. The faculty were aware of this as they addressed it in faculty question two. The university community/distance from home concern was addressed only by the students in student question two and three, it was not addressed by the faculty or the telephone interview. The faculty commented on parents/relatives hindering students. The students did not highly rate this hindrance in either the student questions or the interview questions. The students did say that family was a preventing factor in interview question three, this factor was not evident in the student questions or the faculty questions.

Theme Three. The third theme addresses what recruitment programs schools presently use, and what techniques should be used to a further extent. Faculty question

three asked: If your Automotive department has a formal recruiting program, please describe it or enclose written description if available. Telephone interview question six asked: What do you believe are the most effective recruiting techniques for automotive technology? Telephone interview question seven asked: What recruitment techniques do you suggest being used to a greater extent?

In response to faculty question three, the respondents rated the faculty visiting high schools as their key recruitment program. Automotive contests at the university and direct mail followed as important recruitment tools presently being used. In student interview question six, the respondents found that faculty visiting their high school as the most effective. Second they found the career opportunities upon graduation as very effective recruitment concepts. Interview question seven found that students said the faculty need to visit high schools and community colleges more to further extend their recruitment efforts.

Reputation of the automotive programs, job placement, interest in cars, and high school teachers are obviously the most influential recruitment factors of the three qualitative data sources. The cost of going to school, lack of knowledge of the programs, and distance from home are shown to be the strongest hindrances for students majoring in automotive technology. These three sources of qualitative data also showed that faculty visiting high schools and community colleges is a present recruitment tool and should be used to a further extent. See Table XV for summary of triangulation themes.

TABLE XV
SUMMARY OF TRIANGULATION THEMES

| Triangulation Themes |
|--|
| Theme One: Most Influential Factors <ol style="list-style-type: none">1. Reputation2. Job Placement3. Interest in Cars |
| Theme Two: Hindrances of Recruitment <ol style="list-style-type: none">1. Cost of going to School2. Characteristics of University Communities3. Family |
| Theme Three: Recruitment Programs <ol style="list-style-type: none">1. University Faculty visiting High Schools2. Automotive Contests at Universities3. Direct Mail |

Summary

The findings of the both the quantitative and qualitative data have been shown. According to the students and faculty of the eight universities, what are the most influential factors of recruitment? Do the results of the two data collection methods agree with each other? As a review, the quantitative results from the students found that the following four factors were the most influential: (a) reputation of the automotive program, (b) reputation of the university, (c) campus visit, and (d) parents/relatives. The quantitative faculty survey found: (a) reputation of the automotive program, (b) campus visit, and (c) friends at university/community college/high school are the three highest rated factors of recruitment. In the area of reputation and campus visits the students and faculty agree these areas are highly important to recruitment. The qualitative sources found the following as the most influential: (a) reputation of automotive program, (b) job placement/career opportunities, (c) interest in cars, and (d) influence of high school teachers.

The quantitative and qualitative methods agree that the reputation of the automotive program ranks high as a recruitment factor. Job placement/career opportunities were important in the qualitative area. This terminology was not used in the quantitative survey and therefore did not show itself in the quantitative methodology. This area emerged from the qualitative analysis and delineated the importance of job placement/career opportunities to the prospective student. The reputation of the university, campus visit, parents and friends were of a high influence, primarily in the

quantitative methodology. Interest in automobiles and influence of high school teachers showed high influence primarily in the qualitative methodology.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Current enrollment within Baccalaureate Automotive Technology programs have ranged from poor to good. There is room for increased enrollment in all of the programs. Recruitment is an important aspect to enhanced enrollments. However, research on recruitment strategies within Baccalaureate Automotive Technology areas has not been conducted. The purpose of this study was to identify effective recruitment factors as reported by students and faculty in baccalaureate automotive technology programs. This information will be helpful in recruiting students thereby filling the perceived future need for automotive technologists.

The research questions for this study were:

1. What recruitment factors and recruitment hindrances have effected the attracting of students into baccalaureate Automotive Technology programs?
2. What are the most effective recruitment factors according to students enrolled in Automotive Technology programs?
3. Are there differences in effective recruitment factors for each gender, and if so to what extent?

4. Are there differences in effective recruitment factors for freshman, sophomores, juniors and seniors, and if so to what extent?

5. Are there differences in effective recruitment factors for the American Indian Asian, Black, White, Hispanic, and Multi-Racial, and if so to what extent?

6. What are the most effective recruitment factors and recruitment hindrances according to the faculty of the Automotive Technology programs?

The findings of this study were generated from two separate components: a quantitative and a qualitative component. The quantitative component incorporated two surveys which addressed ranking of recruitment factors. A student survey was administered to students of eight universities and a faculty survey was administered to the faculty of the eight universities. The qualitative component contained three open-ended questions on each of the two surveys and sixteen student telephone interviews. The population of this study included eight universities that offer baccalaureate automotive technology programs in the United States. All eight universities participated in the study. The faculty contacts at the eight universities indicated in advance of the mailing that they had 627 freshman through seniors in their automotive programs (n=627). The researcher received back 382 surveys which gave a usable return rate of 60.9%. In faculty survey participation, 27 of 36 surveys were returned giving a usable return rate of 75%.

An analysis of the quantitative and qualitative data revealed many different themes. First, reputation of the automotive program, job placement/career opportunities, interest in cars, and referral of a high school automotive teacher were critical influential recruitment factors. Second, there seems no significance to recruitment factors based on

gender. However, one must note that only 19 of the 382 (5%) participants were female. This probably was not a large enough percentage of the population to show any significant differences. Third, academic status does show differences in the following recruitment factors: (a) University recruiters visiting my high school, (b) Athletic Advisor/Coach, and (c) University Community. Fourth, recruitment based on racial/ethnic background shows no differences except with the use of bulletin boards. As with gender, there was not much diversity in ethnic/racial background. Only 12% of the participants were not White. Fifth, faculty agreed with the students in that reputation of the automotive program, job placement, influence of high school teacher/counselor, and interest in cars are all influential factors of recruitment.

Conclusions

The following conclusions were based upon the review of the literature and the interpretation of the findings of this study:

1. Based upon the findings, it can be concluded that there are four major factors that affect recruitment: (a) reputation of the automotive program, (b) job placement/career opportunities, (c) interest in cars, and (d) referral by high school teachers/counselors are the most influential recruitment techniques for baccalaureate automotive technology. In addition, the cost of going to school, lack of knowledge of the program, and the distance from home were hindrances for students to pursue automotive careers.

Reputation of the Automotive Program

The reputation of the automotive program was the most influential recruitment factor to the participants. The quantitative data found the reputation of the automotive program and the reputation of the university as the most critical. Both the students and the faculty in the qualitative open-ended questions found the reputation of the automotive program as the most important. This agreed with the studies of Paulsen (1990) and Wanat and Bowles (1992). Automotive recruitment should be aware of how influential the reputation of their program is to prospective students and take steps to bolster their reputation.

Job Placement/Career Opportunities

Job placement was also very influential to students. This area was identified by both the students and the faculty as very important. Specifically, the qualitative data strongly showed this area in the student questions, faculty questions and question four of the telephone interviews. Job placement/career opportunities is related to the reputation of the automotive program. This does delineate how important placement upon graduation into good jobs is to students. Automotive recruitment should realize how critical this is.

Interest in Cars

In the qualitative area, both the students and the faculty addressed how the students interest in cars was a determining factor of pursuing an automotive degree.

Student's interest in the subject matter of student is an important recruiting tool for automotive technology.

Referral by High School Teachers

The qualitative data found that students were strongly influenced by their high school teacher to major in automotive technology at a university. The quantitative faculty survey showed high school teacher referral as very important. These responses agreed with the findings as reported in the literature (Devier, 1982; Edmunds, 1980; Isbell & Lovedahl, 1989).

Hindrances of Attending Automotive Programs

The qualitative data addressed what may have prevented students from attending and majoring in automotive programs. The deterrent with the highest response was the cost of going to school. Automotive recruitment should be aware that the cost of tuition and attending school are of critical concern to students. Second, the lack of knowledge of the program was a deterrent for potential students. Automotive programs need to further publicize their programs to high schools and community colleges. Third, how far the university from the student's home town is a concern. Students do not like to go to school a long way away from home. This agreed with the findings as reported in the literature (Ihlanfeld, 1980; Paulsen, 1990). It is important to be aware of what factors recruit students into automotive programs, but it is just as important (if not more) to know what factors prevent students from attending automotive programs.

2. Based upon the findings, it can be seen that there is a small number of females within the baccalaureate automotive technology programs. The data showed only 19 of the 382 respondents as females. The data also showed no significant differences in effective recruitment decisions for each gender. This may have been due to the small number of female participants compared to the number of male participants. Thus it can be concluded that recruitment of females into baccalaureate automotive technology programs is not working. Automotive technology programs have not succeeded in recruiting females. The literature spoke of the future of women in the workplace and the need to recruit women into technology programs. These results delineate the need to question present female recruitment strategies and the need to develop new ways to further recruit females into automotive technology programs.

3. Based upon the findings, it can be concluded that incoming students (college freshman and transfer students) were more influenced than the current students. This is shown by the fact that recruiters visiting high schools, coaches, and the university communities were rated highly by the incoming students.

Recruiters visiting high schools had the strongest impact on freshmen ($\bar{M}=220.44$) followed by sophomores ($\bar{M}=198.87$), juniors ($\bar{M}=187.25$) and seniors ($\bar{M}=177.25$). Freshman obviously are impacted the most by recruiters visiting their high school. This may be due to them just completing high school and remembering the influence of the visit better than the upper classmen. This shows that university recruiters become less important as student academic status increases. The potential impact visitation can have is supported in the literature (Craft, 1983; Hossler, Bean, and Assoc., 1990).

Coaches showed significance in recruitment to freshman and juniors. And less significance to sophomores and seniors. This would make sense as freshman and juniors (transfers from community colleges) could of recently been recruited by a coach.

As with coaches, the community in which the university was located showed significance to freshman and juniors. The same conclusion would apply that freshman and juniors (transfers from community college) have recently moved to a new school.

4. Based upon the findings, it can be seen that ethnic diversity is a concern in automotive technology. Currently within the programs surveyed, there is a small number of minorities with the four year programs (88% of the respondents were White). The data showed 42 of the 382 respondents as minorities. Thus it can be concluded that recruitment of minorities into baccalaureate automotive technology is not working. Automotive technology programs have not succeeded in recruiting females. Mobley, (1988); Sampler & Lakes, (1994); and Parker (1997) addressed the concern of ethnic diversity in technology programs. These results illustrate the need to question present minority recruitment strategies and the need to develop new ways to further recruit minorities into automotive technology programs.

5. Based upon the findings, it can be concluded that automotive university faculty are “in-touch” with what actually does influence prospective students. University faculty view reputation of the programs, job placement/career opportunities, and high school teacher influence as the most important recruitment factors. This study found that the faculty and students are in agreement with what are the strongest recruitment influences.

It was good to see that the automotive faculty are apparently “in touch” with what does influence prospective students.

Recommendations

Persons who are involved in Automotive Technology recruitment should become familiar with the findings of this study. In order to enhance the recruitment of Automotive Technology students, the investigator recommends that:

1. The reputation of the automotive programs, and the career opportunities for the graduate be accentuated to enhance automotive recruitment. Automotive recruitment should be aware of the critical influence that reputation and career opportunities have on prospective students. The reputation of the automotive programs can be communicated to the prospective student in several ways:

- Placement statistics should be printed and made available to the students.
- A ranking of the program should be made available to the students.
- The reputation of the program and career opportunities should be emphasized as faculty visit high schools and share with the high school students.

Automotive faculty need to be aware that interest in cars is an influential recruitment factor, and they need to create ways to enhance its recruitment appeal. This can be done by the university hosting automotive days or automotive contests. Also, faculty could visit elementary schools and share about automobiles to develop interest in cars in young children. Faculty should also continue to develop strong relationships with high school technology teachers, as they play an important part in recruitment to automotive

technology programs. Also, recruiters need to know that cost, lack of publicity and distance from home are the key deterrents for students to major in automotive technology. Recruitment needs to determine ways to minimize these deterrents to prospective students. Automotive programs should specifically look at increasing the available scholarships to their automotive students to help reduce the cost of attending school.

2. Automotive recruiters should realize and reemphasize their effort on recruiting females. As discussed in the conclusions, recruitment of females into baccalaureate automotive technology programs is not working. Automotive corporations are calling for females into their industry. Specific recruitment strategies need to be developed to attract and retain females into automotive programs. Recruiters need to determine what specifically is preventing females from entering the automotive industry and develop a plan to overcome these obstacles. This is an area that needs concentrated effort.

3. Automotive recruiters understand that the student's academic status can be a factor based on athletic recruitment, recruiter visiting the high school, and university community. These areas are most influential to incoming students (i.e. freshman and transfer students) and automotive faculty need to understand and accentuate these areas to further develop recruitment.

4. Automotive recruiters should realize and reemphasize their effort on recruiting from different ethnic backgrounds. As with gender diversity, this is an area that needs concentration and growth. As discussed in the conclusions, recruitment of minorities is not working in baccalaureate automotive technology. The findings as reported in the literature (Sampler and Lakes, 1994) stated the 21st century workplace will represent a

large mix of minorities. Recruiters need to address specific recruitment strategies to recruit and retain minorities and recruiters need to determine what specifically is preventing minorities from entering automotive technology and develop a plan to overcome these obstacles.

5. University faculty need to go to high school automotive programs and share with the students what baccalaureate automotive technology is about. Per the data, faculty have an understanding of what recruitment strategies are the most effective. One of the universities is formally having the automotive faculty visiting their surrounding high schools. If four year automotive programs are not currently doing this, they need to consider implementing a formal approach to visiting high school technology programs. In addition, faculty need to be a part of the overall university recruitment plan. Their opinion and guidance should be solicited. The data showed that they are “in-touch” and understand what recruits the prospective automotive student.

The researcher also recommends the following areas for further research:

1. Further study should be conducted on how to incorporate the reputation of the automotive program and career opportunities into formal recruitment plans.
2. Further study should be conducted on recruitment of females into automotive technology.
3. Further study should be conducted on the challenges that are unique to females and minorities in automotive technology programs.
4. Further study should be conducted on recruitment of minorities into automotive technology.

5. Further study should be conducted on diversity of automotive technology faculty and its impact on diversity among the students.
6. Further study should be conducted on what is preventing students from majoring in automotive technology.
7. Further study should be conducted on the negative image of automotive technology and its impact on automotive technology recruitment.
8. Researchers should consider using both quantitative and qualitative methods to provide for in-depth, rich, and insightful data.
9. Program recruitment should be evaluated using the results of this and other studies.

Implications and Discussion

Based on the conclusions and recommendations, automotive recruiters should consider the implications of this study. The first implication to review developed as the study progressed. It was the issue of recruitment “factors” versus recruitment “techniques”. The seventeen areas that were rated in the quantitative surveys were identified as “factors”. It may be determined that some of the “factors” might be classified as “techniques”, i.e.: campus visit, technology recruitment activities, reading university catalog, promotional materials (brochures, letters, videos), university recruiters visiting my high school, university recruiters visiting my community college, and bulletin board advertising. Even though factors and techniques may be considered as separate issues, this study did not address this separation and breakdown techniques specifically

out of the recruitment factors. Further study should be considered to separate and clarify the differences. The second major implication is the reputation of the automotive programs, job placement, interest in cars, and influence of high school automotive teachers have had the greatest impact on students who are majoring in automotive technology. Recruiters need to realize this, and utilize these concepts to further enhance their own recruiting efforts. It should also be noted that in general the students and the faculty concur as to what influences the students the most in recruitment. This shows that the automotive faculty do have an understanding on what is working in automotive recruitment and are not using techniques that are completely inappropriate. It was also found that the expense of going to school, characteristics of university location, lack of knowledge of the program, and negative image of automotive technology were the biggest hindrances to prospective automotive students. The negative image of automotive technology and automotive repair were brought out in the university faculty responses. The faculty spoke about the misconceptions that the public have about automotive technology. A faculty member stated: "The traditional mindset among teachers, parents, and counselors that if you major in automotive you will be a grease monkey the rest of your life." Based on these comments, the researcher suggests the following model or framework for consideration by those involved in recruiting for baccalaureate automotive technology programs shown in Figure 1. This framework illustrates the main concepts of this study. Automotive recruiters need to be aware of these issues and sensitive to them to provide for more effective recruitment.

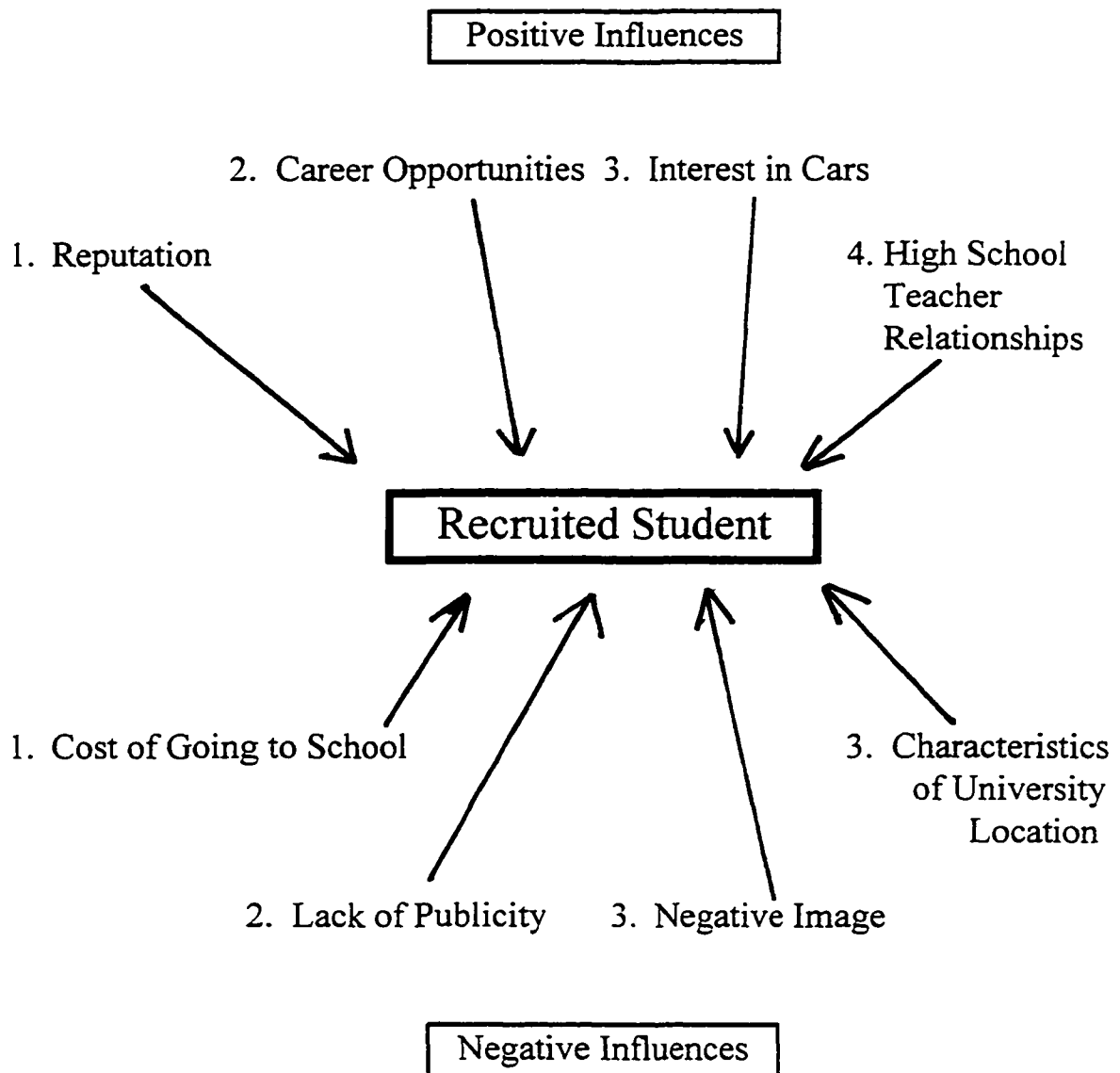


Figure 1. Model or Framework for Recruitment in Baccalaureate Automotive Technology

In addition to the previously discussed framework, this study provides implications for further work in recruitment of minorities. With 95% of the respondents of this study being male, automotive technology has a long way to go in recruiting females. Industry wants females in their workforce, and there must be a strengthened effort to recruit females. The same applies to ethnic diversity. Of the 362 participants in the study, 88% were White. Ethnic diversity is as critical as gender diversity, and automotive technology does not seem to be addressing either issue even though industry is calling for diversity in both areas. Automotive technology should address the challenges and hardships that females and minorities face as they attempt to develop a career in a non-traditional field. What biases and obstacles can automotive faculty eliminate to further facilitate the recruitment and retention of females and minorities? This study delineates many themes in the area of baccalaureate automotive technology recruitment. Faculty and administration who wish to increase enrollment in their programs would do well to review and understand the findings of this study.

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APPENDIXES

APPENDIX A

ENROLLMENT DETERMINATION SURVEY

Date _____ Time _____ University# _____

Hello, my name is Robert Frisbee. I am a professor at Pittsburg State University in the Automotive Technology Program. I am working on my doctoral dissertation and am calling you to ask you three questions about your enrollment in your baccalaureate automotive program. You are one of the eight universities that I am contacting. My dissertation is on recruitment into the baccalaureate automotive programs. These three questions will help justify the need for recruitment into the baccalaureate programs.

1. What is your present baccalaureate automotive enrollment?

2. What was your enrollment approximately five years ago?

3. What is your department's enrollment goal?

This data will be accumulated and included in my study. I will copy the study for you when it is complete.

Thank you for your help.

APPENDIX B

LETTER DELINEATING INCREASED ENROLLMENT



Indiana State University

School of Technology
Department of Industrial & Mechanical Technology

September 9, 1996

Mr. Bob Frisbee
Technical Studies
Pittsburg State
Pittsburg, KS 66762

Dear Bob:

Enclosed is the information you requested.

1. Present enrollment in Automotive Technology is 54.

2. Enrollment History:

| | | |
|------|----|--------|
| 1991 | 51 | Majors |
| 1992 | 46 | Majors |
| 1993 | 50 | Majors |
| 1994 | 44 | Majors |
| 1995 | 37 | Majors |
| 1996 | 54 | Majors |

3. We feel that 60 majors is the minimum number that we can operate at. The university requires a minimum of 15 enrollments in the 100-200 level courses and 12 in the 300-400 level courses.

4. Our goal is for 75 majors within the next three years.

Bob, I appreciate you sharing any information from your study that might benefit us. Thank you.

Sincerely yours,

Dr. Wayne Castner
Automotive Director

WC/kje

Terre Haute, Indiana 47809
(812) 237-3353

APPENDIX C

STUDENT SURVEY INSTRUMENT



Department of Technology Studies

1701 South Broadway • Pittsburg, KS 66762-7566 • (316) 235-4371
Automotive Technology • 1701 South Broadway • Pittsburg, KS 66762-7566

January 27, 1997

Mr. Rick DeMoss
Program Leader-Automotive Technology
Weber State University
Ogden, UT 84408-1504

Dear Rick:

I want to thank you for agreeing to participate in the research on recruitment into our baccalaureate Automotive Technology programs.

Per our telephone conversation of January 27th, I have enclosed 45 surveys to be completed by the majors in your baccalaureate Automotive Technology program. Also, enclosed are 6 surveys to be completed by your baccalaureate automotive faculty. In March, I would like to do a 5-10 minute interview with two of your majors. I will follow up on the telephone interview later. I hope that this study will enlighten us on effective recruitment techniques both at our individual schools and the other universities that offer baccalaureate Automotive Technology programs. Once the study is completed, I will be sure to send you a copy of it.

If possible, I would like to have you return the surveys by February 21, 1997. I have enclosed a SASE for your convenience. If you have any questions, please call. Again, thank you for your help.

Sincerely,

A handwritten signature in cursive script that reads 'Robert L. Frisbee'.

Robert L. Frisbee
Assistant Professor, Automotive Technology

316-235-4380

Enclosures

APPENDIX D

FACULTY SURVEY INSTRUMENT

Please respond to the following three questions (continued):

2. What factors may have hindered students from majoring in Automotive Technology at your University?

3. If your Automotive department has a formal recruiting program, please describe it or enclose written description if available.

Thank you for your cooperation.

Return Address: Robert Frisbee, Pittsburg State University, Technology Studies, Pittsburg, KS 66762-7567

APPENDIX E

TELEPHONE SURVEY INSTRUMENT

APPENDIX F

THANK YOU LETTER

**Department of Technology Studies**

1701 South Broadway • Pittsburg, KS 66762-7566 • (316) 235-4371
Automotive Technology • 1701 South Broadway • Pittsburg, KS 66762-7566

April 29, 1997

Mr. Ron Darby
Assistant Professor-Automotive
University of Southern Colorado
2200 Bonforte Blvd.
Pueblo, CO 81001-4901

Dear Ron:

As you know, I received back the recruitment surveys that you administered for us. We are incorporating them into a statistical program to help determine the significance of each recruitment technique. We want to thank you and your colleagues for your time and effort in administering the surveys. If it were not for your help, this study wouldn't have been possible.

I was also able to complete the phone interviews with the two students that you recommended to me. The students were very helpful and their insight will be incorporated into the results. Over the summer, the results of the study and the recommendations will be determined. Once this is done, we will send you a copy of these results and recommendations.

Again, thank you for your help, we hope the results of this study will help us all in our recruitment efforts.

Sincerely,

Robert L. Frisbee
Assistant Professor, Automotive Technology

316-235-4380

APPENDIX G

IRB FORM

OKLAHOMA STATE UNIVERSITY
INSTITUTIONAL REVIEW BOARD
HUMAN SUBJECTS REVIEW

Date: 06-30-96

IRB#: ED-96-119

Proposal Title: A STUDY OF STUDENT RECRUITMENT IN AUTOMOTIVE
TECHNOLOGY BACCALAUREATE DEGREE PROGRAMS

Principal Investigator(s): Ray Sanders, Robert L. Frisbee

Reviewed and Processed as: Exempt

Approval Status Recommended by Reviewer(s): Approved


ALL APPROVALS MAY BE SUBJECT TO REVIEW BY FULL INSTITUTIONAL REVIEW BOARD
AT NEXT MEETING.

APPROVAL STATUS PERIOD VALID FOR ONE CALENDAR YEAR AFTER WHICH A
CONTINUATION OR RENEWAL REQUEST IS REQUIRED TO BE SUBMITTED FOR BOARD
APPROVAL.

ANY MODIFICATIONS TO APPROVED PROJECT MUST ALSO BE SUBMITTED FOR
APPROVAL.

Comments, Modifications/Conditions for Approval or Reasons for Deferral or Disapproval
are as follows:

Signature:


Chair of Institutional Review Board

Date: June 20, 1996

VITA

Robert Lee Frisbee

Candidate for the Degree of

Doctor of Education

**Thesis: A STUDY OF STUDENT RECRUITMENT IN AUTOMOTIVE
TECHNOLOGY BACCALAUREATE DEGREE PROGRAMS**

Major Field: Occupational and Adult Education

Biographical:

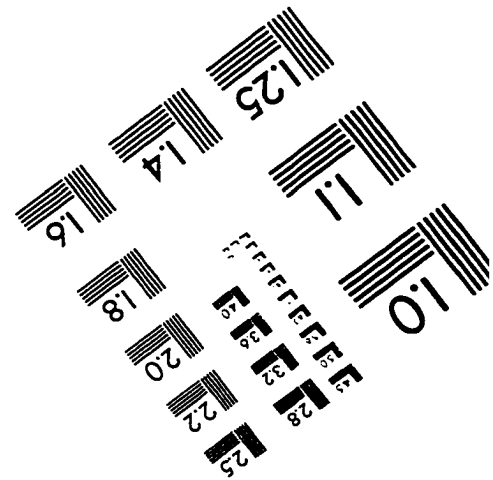
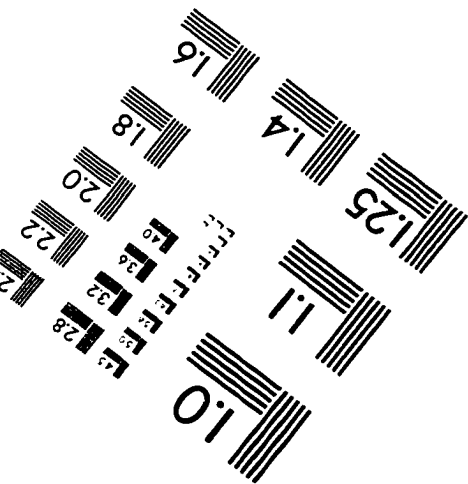
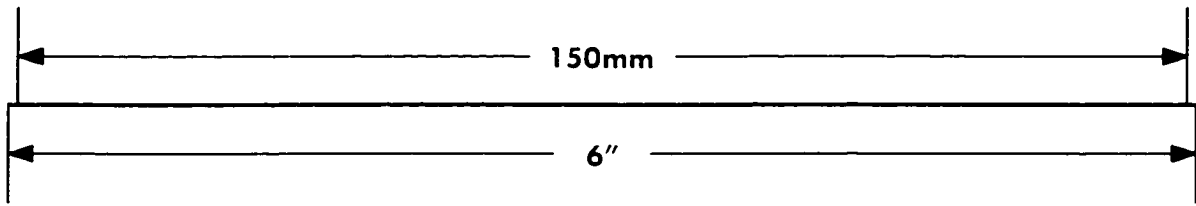
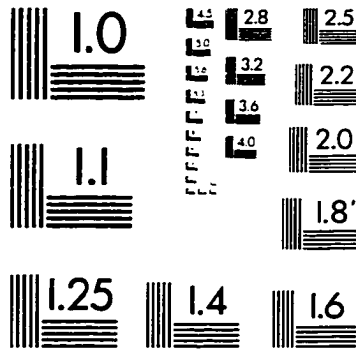
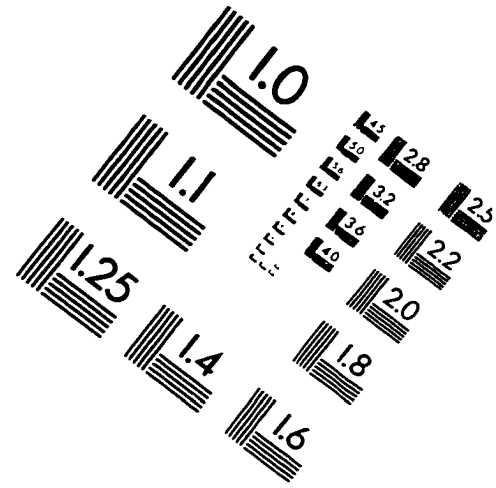
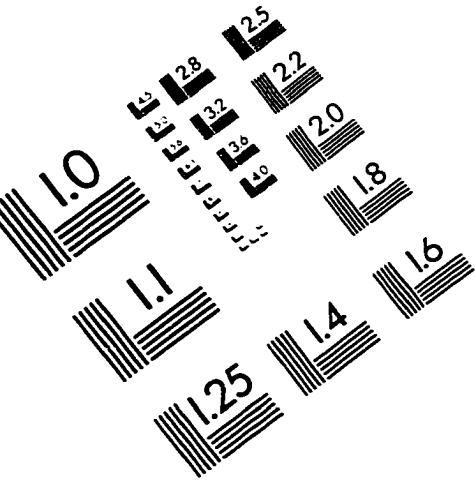
Personal Data: Born in Hutchinson, Kansas, February 28, 1963, the son of Robert E. Frisbee and Luella O. Frisbee. Married to Kristi Russell April 26, 1986.

Education: Graduated from Sterling High School, Sterling Kansas in May 1981; received Bachelor of Science in Automotive Technology from Pittsburg State University in Pittsburg, Kansas, May 1985; received Masters of Science degree from Oklahoma State University in December 1993; received Specialist in Education from Pittsburg State University in December 1995. Completed requirements for the Doctor of Education degree at Oklahoma State University in December 1997.

Professional Experience: District Manager for Chrysler Corporation in Anaheim, CA from June 1985 to March 1988; Technical Training Instructor for Chrysler Corporation in Ontario, CA from March 1988 to July 1992; Assistant Professor in Automotive Technology at Pittsburg State University, Pittsburg, KS from August 1993 to present.

Professional Organizations: National Institute of Automotive Service Excellence, Phi Kappa Phi, Society of Automotive Engineers.

IMAGE EVALUATION TEST TARGET (QA-3)



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Fax: 716/288-5989

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