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COMPARISON OF ATTITUDES TOWARD HIGHER EDUCATION HELD BY POLICE AND FIRE STUDENTS, OTHER STUDENTS, AND POLICE AND FIRE NON-STUDENTS

DISSERTATION

Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

By

Earl R. Schaeffer, B.S., M.A.

* * * * *

The Ohio State University

1978

Reading Committee:
William Dowling
Robert Jewett
Alfred Clarke

Approved By

William Dowling
Adviser
Department of Education
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VITA

October 21, 1938 . . . . Born - Columbus, Ohio

1961 . . . . . . . . . . . B.S., The Ohio State University, Columbus, Ohio

1963-1964 . . . . . . Statistician, Bureau of Employment Services, Columbus, Ohio

1964-1968 . . . . . . Research Supervisor, Ohio Adult Parole Authority, Columbus, Ohio

1965 . . . . . . . . . . . M.A., The Ohio State University, Columbus, Ohio

1965-1968 . . . . . . Sociology Instructor (part-time), Ohio University Branch Campuses, Lancaster, Ohio, and Zanesville, Ohio

1968- . . . . . . . . . . . Instructor, Behavioral Sciences Department/Law Enforcement Department, Columbus Technical Institute, Columbus, Ohio

FIELDS OF STUDY

Major Field: Adult Education

Social Studies Education

Sociology (Marriage and Family, Criminology)
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Increasing attention has been given the use of higher education for police officers and fire fighters. In recent years, concern for advanced education of these public service personnel has reached a high level. These persons were given mere rudiments of training in earlier times. Educational requirements for job entry were low. Formal training was considered unimportant, and recruits generally received only on-the-street experience. New York Mayor LaGuardia was quoted as he addressed new appointees to the fire service: "You cannot become good firemen or good officers by confining yourself to a textbook."\(^1\) John McCarthy, after reporting this statement in his book, claimed, "...no matter how well educated a man may be, the fact remains that a college diploma never put out a fire."\(^2\)

Today, police and fire departments set entrance requirements that usually include a high school diploma. Recruits are subject to cadet training, usually in an academy, before they are placed on the streets. They receive continuing training throughout their service. This includes refresher training in basic skills and specialized
training in advanced subjects. Police and firefighters are allowed to enroll in higher education courses in addition to job training. Much of this education takes place at institutions of higher education, such as colleges, universities, community colleges, and technical institutes. These involve public and private two-year and four-year schools. Most programs in these schools are oriented to the job specialty and are titled law enforcement, police science, corrections, or fire science. Three generalizations can be made in this regard.

1. Employing agencies are interested in higher education for their personnel.

2. Educational institutions are interested in providing such education.

3. Employees are interested in participating in education programs.

The above generalizations are based on the following evidence.

- Police and fire agencies allow employees to take advanced education. They encourage employees in several ways; one is to allow time off for attending classes; a second is to reimburse employees for tuition and books; a third is to give promotional advantage to employees with higher education; and a fourth is to increase the salary of the graduate. The last two, because they may conflict with
civil service requirements of government agencies, are not as frequent as the first two.

- Institutions of higher education are increasing program offerings for public service personnel. Degree granting programs for police and fire students are offered mostly for persons already employed in these areas, but programs are increasingly being expanded to include persons not yet employed in police or fire occupations. Two-year and four-year institutions, both public and private, are offering such programs.

- Employees are interested in participating. Police officers and fire fighters enroll for courses at these institutions. Part of their interest may be due to incentives of higher pay or improved promotional chances. Part of their interest may be attributed to other factors of non-material nature.

This study is concerned with examining an aspect of the last generalization, the interest of employees in participating. Specifically, the study measures attitudes of participants toward higher education. This research is not concerned with reasons employing agencies have for encouraging higher education nor with reasons educational institutions have for offering courses to participants. Instead, it measures attitudes of police officers and fire fighters toward higher education. These attitudes may partially explain the motivation of participants in seeking
higher education. It is not known if police and fire fighters who seek higher education have favorable, neutral, or unfavorable attitudes toward higher education. It is assumed by educators that the attitudes should be favorable, or, at least, more favorable than attitudes of police and fire fighters who do not seek higher education. This study will attempt to discover whether these attitudes (of police and fire fighters who pursue higher education) are different than attitudes of police and fire fighters who do not seek higher education. This study may then help explain the motivation of police and fire fighters in seeking education. This knowledge may be of use to educators in planning programs for law enforcement and fire science personnel.

A questionnaire was constructed to measure attitudes toward higher education. This was pre-tested on general education students at Columbus Technical Institute. From the original questionnaire, a final instrument was developed and administered to police and fire students attending Columbus Technical Institute in the Law Enforcement and Fire Science programs. A control group of students in various technologies at the Columbus Technical Institute was also given the instrument. In addition, two other categories of persons received the questionnaire - these were police and fire fighters not enrolled in any higher education coursework. These five groups were designated
This first chapter contains a review of literature which is headed History of Police Education and History of Fire Education. This chapter also includes Involvement of Columbus Technical Institute with the Fire Science and Law Enforcement programs within the Institute. The conceptual framework follows. Research Questions are posed at the end of the chapter. The second chapter presents method of study, and the third contains the findings. The fourth chapter includes interpretations of data and applications to education of police and fire personnel.

History of Police Education

Years ago, police officers were issued badges, guns, and clubs, and were ordered to go out and enforce the law. Education was confined to observing what other officers did. Sullivan cites an example of police being given copies of the Ten Commandments and told that if they kept the Commandments and saw to it that others did likewise, they would not have any trouble. Another crude bit of training was reflected in these instructions: 1) When you hit a suspect, hit him hard; 2) When you tell someone something, tell him only once; 3) Do not trust anyone, not even
Police work is an ancient occupation. Jo Hubbard Chamberlin prepared a history of police service which is paraphrased below. There are records of men performing police duties in ancient cities. These men were usually called the watch. In English Anglo-Saxon villages, people took turns acting as watchmen. In medieval times, guards or watchmen were hired by the rich to protect properties. In Italian cities, powerful families had their own small armies for protection. In Western Europe during the sixteenth and seventeenth centuries, householders organized night watch groups and took turns protecting life and property. In the new world, Boston had its night watch by 1636; Philadelphia had one about 1700. The nineteenth century heightened development of police work as Sir Robert Peel organized the London police force along modern lines in 1829. In 1833, Philadelphia started a daytime police force and Boston followed five years later. In the late nineteenth century and early twentieth, most police departments were put on a civil service basis. With the development of the automobile around the turn of the century, the growth of organized crime, and the increasing number of people living in cities, police departments expanded their activities. They used automobiles, telephones, telegraph,
and radio communications. They learned scientific methods of crime solving and came to know the value of keeping comprehensive records. Today, police know far more about complicated matters such as traffic control, scientific crime detection, corrective and penal systems and related matters than did their predecessors.  

The foundation for police training in the United States was laid in the first two decades of the twentieth century by pioneering departments and individuals. In 1915, Raymond Fosdick wrote *European Police Systems* which stressed European efficiency and the difference between it and American police efforts. The difference was attributed to training. The book had the effect of motivating this country toward police training. Gammage has traced much of the educational development of police departments in this century. Bopp and Schultz have done likewise. Their works are integrated in the following discussion.

The first formal training school for policemen was established in Berkeley, California in 1908 by Marshal August Vollmer. Vollmer was convinced the main problem of police was inefficiency which resulted from ignorance, and his solution was formal training. The New York City Police Department established a formal academy the next year and other cities followed. All of these were designed for training recruits. In 1911, New York expanded its training to include detectives. In 1916, the University of
California at Berkeley created the first training school for policemen in a university. Two years later, the police persuaded university officials to offer liberal arts courses for policemen while the department would teach technical subjects. In 1918, the first school for policemen was created at the University of California at Los Angeles.\(^{10}\) It can be seen that some formal training for police, usually in academies, had been on-going even before the book by Fosdick, but the book did contribute to continued development of training for police officers.

During the 1920's, growth of educational programs for police continued. In 1923, the University of California at Berkeley granted the first baccalaureate degree to a student with a minor in criminology. The recipient was probably the first man to be awarded a college degree in a course of study which included technical police subjects. In 1929, the University of Chicago inserted a police training program in the curriculum, stressing courses in police administration. This shortlived program was believed to be the first in which technical police training courses were integrated into a regular undergraduate curriculum.\(^{11}\)

In the 1930's, state police forces led the way in implementing training programs. Some municipal policemen were allowed to attend state training academies. Municipalities were encouraged to establish their own academies. The Federal Bureau of Investigation had some impact on
training when it established the National Academy for the Training of Local Police Officers in 1935. Northwestern University formed the Traffic Safety Institute. San Jose State College founded the first complete police major program in the country in 1931. In 1932, Vollmer became Professor of Police Administration at the University of California at Berkeley. He drafted a curriculum which allowed students to major in either technical, legal, or social areas of policing and obtain an A.B. degree. In 1935, Michigan State University established a four-year program leading to a B.S. in police administration. Before the decade was over, more than twenty colleges and universities were offering police training programs.\(^ {12} \)

The 1940's continued this growth in police education. The period after the war years accounted for great growth and has been labeled by Gammage as the period of greatest activity in the police training field.\(^ {13} \) Policemen who had been members of the armed services returned to their jobs in law enforcement and were joined by other veterans who infused new blood into the police service. Educational programs for police expanded. Police science seemed to fit well into the junior college, and California moved rapidly to develop police programs in two-year schools. California also enlarged its four-year programs, and police or criminology majors were established at Fresno State, Los Angeles State, and Sacramento State Colleges. Outside the colleges,
recruit and in-service training programs continued to grow. In 1948, the Los Angeles Police Department became the first police agency in the country to inaugurate a system of roll call training, whereby uniformed officers were given brief periods of intensified training immediately prior to going on duty. By the end of the decade, most every department of any size had a police academy. Those that did not usually sent their officers to nearby training schools or practiced on-the-job training.14

Higher education for police increased in the 1950's. Many colleges and junior colleges created law enforcement programs. Specialized training programs were expanded. Michigan State University initiated a four-week basic police course and a one-week command school. The Southern Police Institute at the University of Louisville was established, offering twelve-week training courses to supervisory, administrative, and command officers.15

In the 1960's, junior colleges had great impact on education of police. James Stinchcomb maintained the junior college played the key role in encouraging higher education for many law enforcement personnel.16 John Peper wrote in 1965 that fifty-six of California's seventy-five junior colleges offered Associate in Arts degree in police science and that the other nineteen offered some form of police training. Peper also stated that several state colleges
offered baccalaureate degrees in police science and two universities awarded doctoral degrees in criminology, which prompted him to claim California led the nation in police education and training.\textsuperscript{17}

Gourley and Bristow wrote in 1961, "It is of great interest to note that some jurisdictions are beginning to require of their police candidates formal education beyond the traditional high school requirements."\textsuperscript{18} Perhaps they were overly optimistic or were referring to a small number of departments, because, in 1967, the President's Commission on Law Enforcement and Administration of Justice reported that more than seventy percent of police departments still required high school diplomas and fewer than two dozen required college credits. The Commission recommended specific post-secondary educational requirements for police-men. It recommended that all personnel with general enforcement powers have baccalaureate degrees. This was to be a long-range objective for police officers but was to be made short-range for supervisors and administrators, and immediate for chiefs. Police departments were advised to take immediate steps to establish minimum requirements of a baccalaureate degree for all supervisory and executive positions.\textsuperscript{19}

Encouragement to send police officers to school was provided in 1968 with the passage of the Omnibus Crime Control and Safe Streets Act. The Law Enforcement
Assistance Administration was created within the Department of Justice. This agency included the Office of Academic Assistance which had the purpose of administering the Law Enforcement Education Program. This program provided financial aid to students enrolled in colleges and universities. Prior to this, police education programs were still few. Scattered communities across the country and the state of California might have been enthusiastic about higher education for policemen but they were not typical. For most officers, economics was a problem too. Many officers had second jobs and were not willing to give them up in order to pursue expensive and time-consuming educational programs. They also worked rotating shifts which made education even more difficult. But, with the advent of the Law Enforcement Education Program, college education became available for the first time to officers throughout the country.

From 1960 to 1967, the number of college programs for police had increased from about 100 to 234. By 1969, college police programs had grown to 409. By 1970, 890 colleges had applied for and received Law Enforcement Education funds. By 1974, about 95,000 persons in 1,036 institutions had participated in these assisted programs.

Belief in the value of higher education for police is revealed in the literature. Concepts as to what the value of education may be vary according to the person
reporting them. Some view the value of education as enabling professionals to keep up-to-date on new methods and procedures, changes in the law, and administration of the law. Arthur Pell believes training is important to insure competence in job performance and to prepare for promotions and supervisory positions. Pell believes men do not stay trained and what they do retain is often made obsolete by technology and research. Continuous training of police must take place. Chamberlin wrote that to reach higher ranks, advanced specialized training is required. Duties of police become more demanding and it takes more training and education to perform them. In most cases, salary levels would be raised accordingly. Chamberlin shows the belief that income would be raised to correspond to higher educational levels.

Recognition of need for recruit training, refresher training, and specialized and supervisory training has come from several sources. Several based their beliefs on immediate benefits to the police officer (such as salary increases, promotions, or better job assignments) or benefits to the department (such as higher job performance, less discipline problems, fewer complaints against the department, higher image and prestige, and better administration). John Sullivan discussed several advantages of training. Among these were: Training imparts knowledge and ability to perform better work; enables law enforcement
procedures to become more standardized and uniform; develops high morale and enthusiasm; shows concern for safety and welfare of officers; and develops loyalty, fidelity, and longevity in police service. These benefits are important to police administrators and officers.

From reading the literature, it might be assumed that people in police work expect quick and simple results from education. That would not be accurate, however. N.F. Iannone viewed many benefits deriving from effective training programs but stated they would neither be immediate nor easily measured. He observed that precise measurement of results was difficult because of the many abstract reactions brought about by training.

Most of the benefits cited thus far are pertinent to job application. Educators might be more interested in other studies that confront matters more abstract than direct job application. Some studies have shown, for instance, that college-oriented police are less authoritarian than non-college oriented police and less authoritarian than other students who were not police, and that completion of the college degree results in lessening of authoritarian attitudes. George Berkeley believes the educated policeman is more likely to be democratic. Gammage thinks a great benefit from college education is that it trains police to think. Denny Pace wrote that for the police officer, "given the exposure to college life, he may not
only develop his latent intellectual abilities but also his judgment and discretion. Guller claims the amount of education is important, stating there is a relationship between amount of exposure to college education and positive cognitive changes. He suggests those who have been exposed to college are less dogmatic than those whose college has just begun. Police officers who were college seniors were less inclined to punitive attitudes and were more open-minded than were freshmen police officers. Witte, an adult educator, observed in a 1968 study that a police district staffed with college graduates showed a higher rate of morale, less time off, greater response to calls, and fewer complaints by citizens when compared with a district of non-college police. Donald Santarelli supported the findings of Witte in his report of a 1972 study of 1,915 New York City police officers, which showed that officers with at least one year of college achieved better job performance records than those with no college education, and that officers with degrees recorded even higher quality of performance. Twenty-four percent of non-college graduates had civilian complaints lodged against them while only eight percent of college graduates had such complaints.

The benefits cited above seem to be the result of education within university settings rather than in training academies. Several writers have acknowledged this.
Becker asserted training at the four-year college developed broader and less parochial knowledge by combining the study of law enforcement with the more traditional disciplines of sociology, political science, and psychology. He believed the junior college was less generalized and stressed the "how to" concept, was more rigid in its presentation, and was less adaptable to related disciplines. Becker believed the police academy was the most rigid of all. Most police academies reflected philosophy of only their own agency. Instructors were selected from their own ranks and the teaching philosophy was, "It was good enough for me when I was a policeman and it's good enough for you."\textsuperscript{35} Dewey Pace believed the academically oriented training program had many desirable features.\textsuperscript{36} George Berkeley believed the logical institution to assume the key role in educating police was the junior college.\textsuperscript{37} A.C. Germann, concerned with education of management and executive officers, said police executives should take established college and university programs in management techniques.\textsuperscript{38}

While many writers have stressed training away from the police agencies, it should be realized that these agencies are not about to abolish their own training programs. Recruit training will continue in importance for new officers and will be conducted at academies operated by municipal departments or state agencies. Roll call training, specialized training, technical training,
supervisory and command training will also continue to be conducted in departments of large cities. It is in addition to these that educational programs outside the agencies are needed. Germann asserts that broad management and administrative programs for executives can usually be provided only in colleges and universities. Gammage agrees adequate training cannot be found in the police agency itself and cites several advantages of college and university training for all police officers and not just executives. Since police work is a human relations job, college life offers the best of laboratories wherein a student can work with, learn from, and learn about people. Gammage says hope for the future rests primarily upon increased emphasis on college and university professional education.

As to whether there will be increased emphasis depends on several factors. One of these is the current status of graduates of police programs. Gammage says several studies indicate college graduates are more likely to become supervisors or administrators than are non-graduates. In Columbus, Ohio, also, it has been noted that graduates of the law enforcement program at Columbus Technical Institute achieve high scores on promotional examinations and are indeed frequently promoted to higher ranks. This does not mean that the education is solely responsible for such high scores or promotions. Attending school requires a certain amount of ability to read and express
one's self, to work under pressures of time and study, to solve problems, and to think. It also requires motivation and ambition. These same qualities might be responsible for high scores on promotional examinations. It is possible the education had little to do with the results. Then, again, perhaps the education helped to develop study habits, instill knowledge, create confidence, enhance problem solving and thinking abilities, and encourage creativity. Perhaps, too, the coursework prepared the students for answering questions frequently asked on promotional examinations. At any rate, these speculations are for other research studies, not this one. The point here is that there seem to be observable phenomena among graduates of educational programs which are observed less among non-graduates.

Several writers stress that police departments must place a high premium on college education. Leonard believes there is a trend toward requirement of a university degree for job entry. He mentions several departments have established minimum education requirements of two years of college work in police service, and some departments even require a bachelor's degree in a police major. Berkeley encourages two-year college requirement for recruits and B.A. degree requirement for command positions. These writers believe some college education, whether in a two-year or four-year school, is essential to improving the police force. The point of most interest to educators is
that most of these writers stress the necessity and value
of placing police education into civilian institutions, out-
side police agencies. Several writers have noted the dif-
ficulty of raising educational requirements from high
school diploma to college degree level. Some of these
writers are opposed to education standards being raised for
police; others support the effort but refer to many dif-
ficulties in doing so. Thomas Frost believes that police
departments should see that their members receive instruc-
tion at commencement of employment and at frequent in-
tervals during their careers, but claims college education
is not essential except for certain specialized positions.
If a large number of college graduates were in the depart-
ment, they would be doing routine duty and become demor-
alized because they were not allowed to handle more demand-
ing jobs. They would also have only slight chance of
promotion. According to Frost, these men would then be of
little value to the department. Jobs that can be performed
by non-college graduates offer little challenge to college
graduates.45 Berkeley, who favors police education, cites
a San Francisco study that showed 7.8 percent of the police
had college degrees but almost half of these were still
patrolmen. He believes they would have benefitted more by
using the time to cram for civil service promotional
exams.46 Paul Chevigny is quoted as saying academic train-
ing for patrolmen is largely irrelevant because college
education is unnecessary for patrol purposes. 47 Fred Gambino reports many other objections to higher education for police. Among these are: minority recruitment will become more difficult; there will be some friction between more and less educated officers; education is not a substitute for practical experience; college educated police will expect special treatment, or they will become bored and frustrated. 48

One obstacle to police education, according to Clift, is that civil service procedures may block promotion and even prevent entry into the police field. He calls civil service procedures the greatest barrier to the utilization of the university or college pre-service police training. 49 Other restrictions could be physical, such as height, age, weight, and vision requirements. The police program graduate then is faced with the possibility of no job prospects even after having completed a course of study. For officers already in service, old restrictions may block interesting assignments, promotions, and pay increases. Sterling reported college graduates aspired to higher ranks at a greater and faster rate than non-college police, and claims the opportunity structure may not be great enough to satisfy them. 50

Another obstacle is the negative feeling of some old line administrators. Niederhoffer claims old line police who lack formal education feel envy and hostility. 51 Dennis
Brown refers to traditional political resistance to educating police because there is a belief that the more professional police become, then the less politically controllable they are.\textsuperscript{52} Chevigny maintains that police work tends to create an authoritarian outlook and this tendency is reinforced by practices in the precinct.\textsuperscript{53} Thus, the authoritarian aspects of police work will smother any liberal tendencies instilled by education. Edward Gould minimizes the importance of education for police and claims law enforcement has pushed for degrees when they were not really needed.\textsuperscript{54}

Still another problem may be that some programs are accused of maintaining low level quality. Berkeley cites a Massachusetts study that found most police programs were substandard, and he concluded that police education remains generally in a primitive state of development.\textsuperscript{55} Another negative outlook on education for police is stated by Curran who writes that the almost child-like reliance some communities have placed on college training as the cure for their law enforcement problems is absurd.\textsuperscript{56}

Not all writers reporting the negative side of police education oppose it, however. Fred Gambino, for instance, concludes that evidence is in favor of college education for police but this education should not be expected to solve all problems.\textsuperscript{57} Robert Jagiello has examined Paul Chevigny's arguments against education and disputes them.
Jagiello urges more police education to keep pace with general level of education in the population and feels this is critical for development of the police as a viable democratic institution.\textsuperscript{58} Dennis Brown calls for more college involvement in police education despite political resistance.\textsuperscript{59} Egon Bittner believes that if menial tasks are removed from police work, recruitment and retention of highly educated police would not be difficult. Bittner recognizes the opposition to education of police and suspects the education level is held at its low point because those who set standards do not wish to be educationally outranked by subordinates.\textsuperscript{60}

Despite the criticism, there is an increase in the number of educational programs for police. Numbers of police, at pre-service and in-service levels, enrolled in these programs are also increasing. Many persons in law enforcement and those about to enter the field are taking academic coursework at institutions of higher learning. There has been an increased concern for improving and enlarging existing educational programs.\textsuperscript{61}

No claims can be made that all these programs in two-year and four-year schools will necessarily better the police. In fact, this researcher has some sympathy for the old-line officers who may feel threatened by younger officers with higher education. Perhaps some of these old line officers recognize that they were "born too soon", and
may have missed out on something in life. They may even regret this. It should be remembered that officers with less education are older men who came on the scene years before educational importance was stressed. They may now feel that life is passing them by, and this writer believes that, too, is a concern of adult education. Some study should be made of, and perhaps programs developed for, the older less educated police officer. But this concern is not within the scope of this study. This is merely a suggestion for further research and development. This writer also feels sympathy for the young better educated police officers who will face the boring routine of police work and have to cope with harassment from some of the old line officers. They may also expect some difficulty in performing the traditional police role. The police officer is a unique person: he has authority, being a keeper of the laws, but is also subject to the people's wishes, being a public servant. He receives much criticism and hostility because of his enforcing responsibilities and because he is regarded as a servant. This is also reflected in the resentment shown by members of groups who are trying to improve their social position but view the "system" as opposing them. They blame the police officer for their difficulties because he symbolizes the law and the "establishment" as they view it. So the policeman is in for a difficult time from college students who may view him as a
harasser, from minority groups who may see him as an oppressor, and from the public in general who may resent his having authority over them.

Claims that education could offset all problems of police would be both unreasonable and unrealistic. But, perhaps education could assist the police in coping with these problems, and, in the long run, help bring about some changes in conditions that caused these manifestations. This writer agrees with Bittner that a degree does not make better police but different kinds of police. Educated police will have to learn policing from the old line officers, but they will operate at a level commensurate with the gravity of the problems they meet.63

This section has presented a brief history of law enforcement education, some reasons for its growth, arguments for education being provided more effectively away from police agencies, some disagreements with and criticisms of the trend toward education, and a reaffirmation of the worth of education for police. The number of programs is increasing yearly and continues to attract many students. Attitudes of these students are important to educators. Assessing these attitudes is the purpose of this study.

The next section will describe the history and growth of fire science education in this country.
History of Fire Education

Man probably learned the benefits of fire by accident. Lightning set fire to some material and man learned how to keep the fire going by adding more fuel. Fire gave man the ability to heat dwellings, cook food, and protect himself from enemies. But it was also capable of destroying man, and so, he had to learn how to control it. Since fire was of great benefit, it was often regarded as a god, or, at least, a gift from a god. Early Greek legend, for instance, credits the god Prometheus with taking fire from heaven and presenting it to man. But, Prometheus could become offended and send fire to destroy humans, too. Effects of hostile fire, then, must have been known to ancient humans, but attempts to control or fight fire are not that ancient.

The first historical records of human attempts to protect against hostile fire appear in accounts of the early Roman Empire. The Romans organized fire watches, but early attempts were not successful. The first successful fire watch service and hence the first fire department dates to 24 B. C. under the reign of Augustus Caesar. John Maher traces the origin of the fire service to this early period. In Rome, the wealthy Crassas amassed a fortune by having his own fire brigade. He would buy a house that was on fire and then have his men put the blaze out. They stood around without lifting a finger to fight
the fire until Crassas gave the word, which meant after the exchange of home ownership took place.65

The first organized fire brigade was established by an insurance company in 1681 to protect the houses of its policy holders. Other companies organized on the same plan. These fire brigades would help only those householders insured with their companies. For identification, a small metal plate was fastened to the front of the house.66

These brigades hired by insurance companies were the first semblance of a paid fire department. Their main duties were salvage and they were to respond to alarms and remove as much property from the endangered building as possible. The markers affixed to buildings (which carried over into the new world where they are now considered valuable antiques) would prevent rival fire brigades from "salvaging" the insured property of the companies, under the guise of error or confusion.

In the new world, fire watches were established following several disastrous fires. Plymouth in 1623 and Jamestown in 1608 had been nearly destroyed. Bush and McLaughlin inform us that a public fire organization was founded in New Amsterdam in 1648. Its function was primarily fire prevention, not extinguishment, but it is usually recognized as the first modern fire department.67

Maher claims Boston adopted the first fire watch in 1654, which consisted of a man in a high tower who would ring
bells to warn citizens of any fire he observed. Boston soon had a problem. The fire bells became confused with church bells.

New Amsterdam used roving patrols equipped with wooden rattles. These extra large noisemakers, similar to what are now used at parties, served the patrol better than heavy bells. 68

The English practice of fire brigades established by insurance companies spread to the colonies, and so did the firemarks attached to buildings in prominent places. In 1679, Boston established a fire fighting unit paid from city funds, which was the only paid fire department in the colonies for a great many years. Volunteer companies performed the salvage work. After seeing this, Benjamin Franklin organized volunteer fire companies to perform both firefighting and salvage work in 1736 in Philadelphia. Franklin is credited with being the originator of the volunteer fire department. 69 Original volunteer companies included such notable persons as George Washington, Benjamin Franklin, Paul Revere, and John Hancock.

Volunteer fire services in large cities engaged in fierce competition to arrive at the fire scene first. This rush to be first and lack of discipline led to fighting between companies at the scene while the fire raged. Jealousy and rivalry between the companies, culminating in fights among each other instead of against the fires,
eventually brought the downfall of the volunteers. Cincinnati became discouraged by severe losses incurred while volunteers fought among themselves at fires and initiated its first paid fire department in 1853. New York formed the Metropolitan Fire Service in 1865, ending its volunteer fire department. Boston reorganized in 1859 with full-time paid firefighters. The trend was toward paid fire departments. By the mid-1800's, fire department operations were becoming government functions.

Fire service education started as in-service training. Later, this was expanded to include formal education. In simple line organizations, supervisors carried out training activities. In large departments, a training division often gave instruction. Recruit or basic training improved over the years, and large cities operated training academies. By the 1960's, basic training given in the better municipal fire departments far exceeded that normally possessed by deputy chiefs a generation before. In addition, an increasing number of cities developed advanced in-service training courses. Charles Walsh asserted that personnel can be used much more effectively at fires if they have been trained to use apparatus and equipment skillfully, to carry out orders promptly, and to coordinate their activities with other units. He believed teamwork was more effective than mere numbers and that good training contributed to this. This is similar to some of the arguments
advocated for police education discussed in the previous section, namely that education promotes efficiency.

Much training is provided by fire agencies. Fire service administrators know what their men must do in fighting blazes and can prepare them for climbing buildings, laying hoses, wielding axes and poles, just as police administrators can instruct their men in shooting pistols, writing tickets, and using codebooks. But, the firefighting field has more demands made on it today than in the past and, just as with the police field, requires some outside aid. Much of this assistance is expected to come from higher education provided by colleges and universities.

William L. Miles believes that the firefighting occupation requires education and training to enter. One benefit of this education might be increased pay, since society tends to compensate professionals according to amount of education and training they receive in preparing for their profession.74

In 1958, the International Fire Administration Institute was chartered by the State of New York for promoting study of fire administration and related subjects. The Institute conducted research on subjects to be covered, made material and courses available to college level educational institutions, and worked with them in course development. The Institute developed a twelve-month curriculum
at the college level. In 1966, the Institute worked at developing a curriculum for community and junior colleges to grant an associate degree.  

As with police education, fire education seemed to relate well to the community or junior college setting. Similarly to police education, fire education in two-year schools received its greatest impetus in California. In 1966, Bent wrote an article concerning fire training programs in California and stated:

"Demands for additional educational preparation for men wishing to enter the field of firefighting and for firemen seeking advancement have stimulated an increasing number of junior colleges to offer courses in fire science. In the early 1960's, only four junior colleges offered fire science courses, compared with 46 in the 1966 spring semester. Of the 46 junior colleges, 25 have established fire science programs leading to an associate degree."

Management courses for high ranking personnel have been held at college campuses. The first national fire department management school was held at Southern Methodist University in 1965. The program was developed by Dallas College and the Adult Education Division of Southern Methodist, and was open to fire chiefs and their administrative assistants around the country. The International Association of Fire Chiefs, in cooperation with the International Fire Administration Institute, scheduled a series of seminar workshops on management in the 1960's. Faculty included university professors, consultants, and
chief executive officers. Persons who attended wanted more of these seminars. These have since been developed on an annual basis and include a wide range of management subjects, such as leadership and motivation, human relations, and labor-management relations. Colleges and universities have cooperated with fire service agencies by providing campus facilities and professional personnel for the seminars.78

College level training in fire department administration is available in many parts of the country and is becoming a prerequisite for promotion. Some departments count attendance at an accredited school or course toward duty hours; others pay all or part of the tuition, books, and fees for students who complete courses with passing grades.79 In Phoenix, under a cooperative policy of the city administration, the fire department, and a local university, at least half the chiefs have been selected from men completing a specified degree course at the university. In California, a substantial number of all fire officers hold degrees from colleges or universities offering special courses for fire department employees. New York City pays fifty percent of the tuition of fire department members taking courses at city operated Queens College. These courses are in fire protection. Although no direct credit appeared to be given in promotional examinations, it is becoming increasingly difficult for
firefighters without advanced training to compete against better informed colleagues. John Maher wrote that many fire departments have initiated the policy of requiring an applicant for promotion to have a certain number of credits in the Fire Science curriculum before being eligible for promotion to the next position.

Support for a plan requiring higher educational requirements for promotions comes from Favreau who refers to the recommendations made by the President's Commission on Law Enforcement and Administration of Justice. The recommendation was that all personnel with general enforcement powers have baccalaureate degrees, and that departments immediately start to establish this requirement for supervisory and executive positions. Favreau believes the fire service should do no less.

Other writers do not demand such lofty standards but still feel the need for raising educational requirements, especially for supervisory personnel. Demands made on supervisors and chiefs are growing, and there is a trend to require that a chief have at least two years of college education. Bush and McLaughlin, writing in 1970, claimed that within a few years in some cities no one would be appointed as fire chief unless he had a full college or university degree.

The fire service is in the midst of transition which has resulted in research and knowledge explosions, according
to Favreau. The two strands of working and training that are traditionally intertwined for the career of a fire fighter are being joined by a third strand - education. Favreau claims the difference between education and training is what makes this education so valuable to the lifelong process. Education emphasizes creative interaction and acquisition of a broad knowledge base. Education creates an atmosphere for critical thinking, listening, and speaking. Education asks "how" and "why". Training is the application of this knowledge and only asks "how". Favreau considers this distinction meaningful. Further, he says development occurs when an individual who has been trained and educated continues to grow intellectually as he moves toward vocational and social competence. Favreau sees the value of education as being a thing apart from training or experience, but together the three work continuously for development or self-realization of the person.

Charles Ross, a battalion chief in the Cleveland Fire Department and instructor at Cuyahoga Community College in Ohio, expresses similar thoughts:

"Operational efficiency of a fire department rests upon a triple base of education, training, and experience. To gain expertise by experience alone at best is a haphazard achievement. An educated fire fighter without experience, on the other hand, is as useful as a wise and willing surgeon who has never handled a scalpel. Therefore, the performance of personnel must be guided towards the accomplishment of organization goals by
Ross claimed that the fire service has long been lacking in education. He also pointed out the value of education in leading to promotion, stating that many students from Cuyahoga Community College have been promoted since the program began in 1965. This writer can make the same point for the Fire Science program graduates of Columbus Technical Institute in Ohio. Promotion advantages are similar to those reported for law enforcement graduates in the previous section, but note the qualifications concerning these promotion arguments on pages 17-20.

There has been some criticism of education for fire fighters and some reluctance to use this education. Maher reports that relatively few departments have any higher education requirements. Most do not even recognize the academic credits in promotional examinations. The philosophy of appointment to a supervisor’s position is to study hard, pass the examination, become appointed, and be thrust into the practice with little insight into the duties of that position. Maher vows this is not being realistic and thinks these officers would be much more efficient were they adequately trained.86 Tarkovaski says reluctance to give credit on promotional exams for college credits is still found today. He believes programs in fire service should be for fully trained fire fighters, claiming it is a
weakness to enroll new recruits in college programs. His views were not shared by other writers, however. Diezel, reporting on a Virginia school, claims it is worthwhile to enroll new probationary fire fighters in the community college fire science program. Oberg believes college level programs must be revised to accommodate pre-employment students. Fire department recruiters will be drawing manpower from college campuses because firefighting is highly specialized and requires intelligence, mechanical skill, and knowledge of chemistry, physics, and hydraulics. College students should be directed to fire service programs but most such programs are for employed firefighters. Oberg sees this as defeating the purpose of recruiting college-educated young persons into the fire service. He writes, "A high priority project for the fire service must be the development of a post-high school curriculum specifically designed for future firefighters and scheduled as part of the school's regular day program." Oberg finds it encouraging that some schools have begun to present full day-time fire service programs with appeal for post-high school students. The future of fire service programs in colleges rests in their development of prospective employees for fire departments. Some potential obstacles to this practice might be found in civil service procedures, age, height, weight, and other requirements, which were discussed earlier on page 20.
While Oberg favors rapidly growing pre-service educational programs, others see this as inappropriate. They claim persons should be employed and receive basic training and have some experience on the job before going on to academic education. This is the same kind of division found in the literature on police education. Most programs originally set out to educate those already employed in the fields but then expanded to reach those not yet employed. This is true of the Law Enforcement and Fire Science programs at Columbus Technical Institute in Ohio. Originally, all students in these programs were employed in the fields before enrolling in courses. But as of 1978, half the students are now pre-service.

Fire departments are increasingly offering incentives for their members to take courses. O'Keefe, in describing the Massachusetts programs, reports that many cities have salary incentive programs for fire students. The state civil service system even grants credit on promotional exams for earned college credit, and many students have been promoted. O'Keefe even foresees future firefighters allowed to attend a four-year state college tuition free, while working only twenty-four hours a week in their departments and drawing full salary. An incentive pay program for education went into effect in 1974 for the Upland, California, Fire Department. In this program, firefighters can receive an additional five to ten percent of
their current base pay for completing a specified number of units of fire science courses. These courses are combined with a prescribed number of years of fire service to determine the exact percentage. The units can be obtained through general college courses, fire science seminars, approved special courses and seminars, and special projects. The educational courses in the program have been integrated into existing programs at Chaffey College in Alta Loma, California.

Incentives are becoming real. Some departments offer credit on promotion, others offer salary incentives as shown above, and some provide a combination. Tuition reimbursement is frequently found, in some instances as a flat sum and in others on a sliding scale, according to the grade. While these incentives involving money seem desirable, Maher believes they are missing the point. He believes that, since the community benefits from having a highly competent professional fire department, it should not accept lower levels of performance from some. A certain level of education should be required and the ultimate goal must be professionalization. He believes that participation in education should be mandatory. Promotion points and salary increases should also be given, but the important point is to create a highly competent and skilled fire department. He regrets college attendance is not required and the number of departments stipulating credits
or degrees for promotion are still a minority but envisions a professional certification for firefighters in the near future.\textsuperscript{94}

This section has shown that growth is constantly occurring in the number of programs for public service employees in the police and fire sectors. Fire fighting programs are not as frequent nor are participants as numerous as in law enforcement. This is explained, at least in part, by the facts that 1) fire fighting does not contain as many members as does law enforcement; and 2) there are no funds such as the Law Enforcement Education Program to finance education for firefighters (see page twelve for a brief explanation of the impact these funds had on police education). Still, many firefighters and pre-fire service persons are taking coursework at colleges and universities. This shows that fire science education is becoming increasingly valued as important in the fire service, and that a proper setting for this education is the academic environment of university or junior college (four-year and two-year schools).

The next section refers to the Columbus Technical Institute and the involvement of that Institute with Law Enforcement and Fire Science Education. The conceptual framework follows.
Involvement of Columbus Technical Institute

Columbus Technical Institute is a two-year, post-high school facility which grants associate degrees. According to Verner's classification scheme, the Institute would qualify as a Type Two institution, for which adult education is an extension of the primary function. This is because the Institute's primary function involves education for a population segment other than adults. The school's purpose is to prepare technologists, that is, train persons to assume job roles in the occupational structure.

The Columbus Area Technician School was created by the Columbus, Ohio Board of Education in 1963 to meet the needs of business and industry for trained technicians. The school was located in the basement of Columbus Central High School. In 1965, the Columbus Board of Education purchased Aquinas High School, which was being phased out as a parochial school, and moved the Technician School to that site. In 1967, the school came under the jurisdiction of the Ohio Board of Regents and was chartered as the Columbus Technical Institute. The Institute has shown steady growth since and today is the largest two-year technical college in Ohio. By 1977, the campus had expanded to include four classroom buildings other than Aquinas, an administration building, and a library. More construction is underway at this time (1978). In 1963, the Technician School enrolled 67 students in three
technologies; by 1977, the Technical Institute had over 6,000 students in more than twenty technologies. In addition, continuing education and special classes, both credit and non-credit, were being offered. The Institute had also begun to offer courses at satellite campuses and was seeking a site to begin construction of a second campus.

The Law Enforcement Technology had its beginning at Columbus Technical Institute in 1969, at the request of law enforcement agencies. For the first two years, this program was conducted at night on a part-time basis for in-service police. In 1971, day classes were added to the schedule, and pre-service students began taking courses. Enrollment in this program was prompted by federal support as the Institute had been granted Law Enforcement Education money for grants to officers in public police departments. Graduates of this program receive the degree of Associate in Applied Business in Law Enforcement Technology.

The Fire Science Technology was brought to the Institute in 1969 by fire-fighting departments. Because Central Ohio firefighters generally had a work schedule of 24-hours on duty and 48-hours off, they could not attend classes scheduled on a regular academic basis. Their days off would not be the same in consecutive weeks. To accommodate this work schedule, the Institute offered each fire science course two consecutive nights. For example, a
class given on Monday was repeated on Tuesday, and the fire fighters could attend either night. This procedure eliminated conflicts between work schedules and class schedules. In 1976, day classes were added to the schedule. Pre-service students began attending classes in fire science in 1972. Graduates of this program receive the degree of Associate in Applied Science in Fire Science Technology.

This writer is currently employed as a Behavioral Sciences and Law Enforcement instructor at Columbus Technical Institute. He has been involved with the origination of the Law Enforcement program and has been part of the instructional staff working with both police and fire fighters. As such, he has been favorably impressed by the dedication and ability of the in-service police and fire fighters. These have been adult students, with the usual adult responsibilities of job, home, and family. Enrollment in courses at Columbus Technical Institute is voluntary with them, and many have not been in school for years, aside from academy and other in-service schools. This writer is deeply concerned about the education of these students and has become interested in the attitudes about education they hold. This study is an attempt to measure those attitudes. The study compares attitudes toward education of police students and fire students enrolled at Columbus Technical Institute with attitudes of students other than police or
fire fighters, and with attitudes of other police and fire fighters not enrolled in course-work at any institution.

Currently, it is unknown if attitudes toward education of police and fire students are more favorable than those of police and fire non-students. It is assumed that participants in educational programs should have more favorable attitudes than non-participants, since attitudes are often defined as predispositions to act. Yet, people do not always behave according to their beliefs. Fishbein asserts that measures of attitudes are not likely to be related to behavior in any consistent fashion. This study will attempt to show whether actions and attitudes are indeed related in the instance of police and fire participants in educational programs at Columbus Technical Institute. Knowledge of these attitudes should be useful for recruiting purposes, curriculum development, and program evaluation. It is important to be aware of these attitudes if Columbus Technical Institute is to be successful in recruiting and in teaching. It is worthwhile to determine whether instructional efforts are having any impact on attitudes. Hackel had noted that police with higher education saw professional training as being more important than those without it. The current study may be of assistance to Columbus Technical Institute in the aspects of evaluation and expansion of existing programs. Charters said that the future of a profession is difficult to predict
and the nature of society in which it will be practiced is uncertain. The need for a continuing education program to be relevant under such conditions implies continuous study and revision of curriculum. While Charters referred mainly to physicians, lawyers, and clergy, the idea can possibly be extended to police and fire professions. The goal is to keep continuing education relevant.

Research into the attitudinal area may assist in improving fire and police programs at Columbus Technical Institute. Several objectives exist for this study.

- The study will add to the body of knowledge about attitudes and education.
- The study will assist Columbus Technical Institute in evaluation of effects of programs.
- The study will aid future recruiting.
- The study will be of use in course planning and curriculum revision.
- The study will provide additional knowledge concerning motivation of adults to participate in higher education coursework.
- The study will assist in providing knowledge of attitudes of working adults toward higher education programs.
- The study will contribute to sociological and psychological knowledge of adult learners, as compared with adults who are not currently enrolled in educational coursework and with younger learners.
- The study will assist administrators, coordinators, and teachers of adult learners to better understand the attitudes of these learners and take them into account when preparing, administering, or teaching courses for them.

- The study will help training officers of police and fire departments plan their programs from basic recruit training through advanced continuing education, by providing them with empirical data concerning the attitudes of their personnel.

All of the above can be benefits from this study. This study should be of interest to researchers engaged in attitudinal studies, law enforcement education, fire science education, continuing education for the professions, or adult education in general.

**Research Questions and Hypotheses**

For the purposes of this study, the following research questions have been posed.

1. What are the attitudes toward higher education of in-service police enrolled in coursework? Specifically, this refers to those enrolled in the Law Enforcement Technology at Columbus Technical Institute.

2. What are the attitudes toward higher education of in-service fire fighters enrolled in coursework? Specifically, this refers to those enrolled in the Fire Science Technology at Columbus Technical Institute.
3. How do attitudes of the above police and fire students compare with attitudes toward higher education of students other than law enforcement or fire science? Specifically, this refers to students enrolled in coursework at Columbus Technical Institute but not in Law Enforcement or Fire Science.

4. How do attitudes of the police and fire students compare with attitudes toward higher education of police and fire fighters not enrolled in coursework. Specifically, this refers to a sample of police officers and fire fighters not currently taking any higher education courses.

The following null hypotheses are posed.

1. There is no difference between attitudes toward higher education of police students and those of students other than police at Columbus Technical Institute.

2. There is no difference between attitudes toward higher education of fire students and those of students other than fire at Columbus Technical Institute.

3. There is no difference between attitudes toward higher education of police students and police who are not students.

4. There is no difference between attitudes toward higher education of fire students and fire fighters who are not students.

The methodology of the study is presented in the next chapter.
FOOTNOTES


2. Idem.


5. Idem.


15. Ibid., p. 132.


28. Alexander B. Smith, Bernard Locke, and Abe Fenster, "Authoritarianism in Policemen Who Are College


34. Donald E. Santarelli, Op. Cit., p. 76.


39. Ibid., pp. 45-46.


41. Ibid., p. 112.

42. Idem.

43. Ibid., p. 45.


66. Idem.


69. Loren S. Bush and James McLaughlin, Idem.


84. Donald Favreau, *Idem*.


90. *Idem*.


96. Columbus Technical Institute, Self-Study Report, Columbus, Ohio, Columbus Technical Institute, 1975, pp. ii-iv.


Milton Rokeach also states an attitude is a relatively enduring organization of beliefs around an object or situation predisposing one to respond in some preferential manner. Milton Rokeach, Beliefs, Attitudes, and Values, San Francisco, Jossey-Bass, 1970, p. 112.


CHAPTER II
THE METHOD

This chapter presents the method of study. The first section states the assumptions on which the study is based. This is followed by a discussion of the original questionnaire and pretest. Finally, a section on the revised questionnaire and testing is presented.

Assumptions

The first assumption made in this study is that attitudes toward education can be measured to a degree, and that this can be done using a Likert-scale questionnaire. Allport cautioned that scales should be regarded as rough approximations of the way in which attitudes actually exist. Humans have contradictory attitudes and they practice deception and rationalization.¹ Despite this caution, it is generally believed that questionnaires can and do measure attitudes.

The second assumption is that attitudes reveal predispositions to act. Attitudes may be different for professionals who are students as compared to those who are not students, but it is not known in which direction these
differences lie. Police and fire personnel who are students should be closer in attitudes to other Columbus Technical Institute students than they are to other professionals who are not students. But, what people say and what they do are not always identical. LaPere was an early researcher who realized verbal reactions may not be the same as physical actions. Behavior occurs in a specific situation and in interaction with other people and even with non-human objects. It cannot be claimed that reports or expressions on questionnaires accurately reflect what the respondents would do. They indicate what the respondents would do. It is assumed that, in the situation in which the subjects respond, these are the best approximations of their attitudes which are available.

Original Questionnaire

A questionnaire of 130 items was developed to measure attitudes toward education. The original questionnaire was prepared, using items derived from the reviewed literature. This literature included books printed for police and fire-fighters, journals published for them, along with adult education books and journals. Other questions were obtained from discussions with police, fire fighters, and educators. These questions were used with a five-point Likert-type scale, to be answered "Strongly Agree, Agree, Undecided, Disagree, or Strongly Disagree." These answers were
weighted one to five, with the highest number being the most positive and the lowest number being the least positive. For the entire questionnaire, a high score indicated a more favorable attitude toward education than a low score. The original instrument appears in Appendix A.

Asch gives much support to Likert type scales. He claims they do discriminate between groups and are sufficient to permit comparisons of different groups. Validity evidence is obscure, however. Asch points out that, for most scales, evidence of validity is not present, nor is it clear what validity criteria could be.

Limitations of the method include the usual ones applied to questionnaire data: No zero point, weak assumptions that intervals are equidistant between scale numbers, the assumption that questions mean the same to all persons, or that a particular number response means the same to all, and difficulty in validity. Miller warned that, for some respondents, the "uncertain" middle category can be very seductive; one can either eliminate it entirely as a category or suggest in the instructions that it be used only as a last resort. Yet, Miller does concede the "uncertain" middle category has value.

The instrument was given to four classes of Behavioral Science students at Columbus Technical Institute as a pilot test. These students represented all the technologies at the Institute, except Law Enforcement and Fire Science.
Since all students are required to take Behavioral Science courses, this was the most simple and direct route to testing a cross section of students.

Results were analyzed using the "Internal Consistency Item Analysis Routine" developed by P. T. Cleaver at The Ohio State University. This test is specifically designed for an internal consistency item analysis of a Likert-type attitude scale. The values used in the analysis include for the entire scale, a split-half correlation and a corrected split-half correlation, and for each item, a scale value difference, a critical ratio for the scale value difference, a maximum possible scale value difference, and a scale value difference ratio. This program also computed high means, low means, and total means for each item, plus high standard deviations, low standard deviations, and total standard deviations for each item. Formulas used are reproduced below. Formulas and explanations are taken from Dr. Cleaver's document.

Three means are produced for each item. The sample is divided into low and high halves based on total scores. The low and high half means are computed using the division based on total scores. The total mean is the mean for that item for the entire sample.

\[ \bar{X} = \frac{\sum X}{N} \]
Standard deviations are computed for each item for the low-half, high-half, and total sample. The halves are based on the division by total scores.

$$s = \sqrt{\frac{N S^2 - (\sum X)^2}{N^2}}$$

The scale value difference (SVD) is computed for each item. It is the difference between the low-half mean and the high-half mean for an item when the division is based on total scores. It is considered a measure of internal consistency; the higher the SVD the more consistent the item is with other items in the scale.

$$\text{SVD} = X_{hi} - X_{lo}$$

The critical ratio is an inferential statistic computed for the SVD. The C. R. tests the null hypothesis that the SVD is zero in the population from which the sample was drawn.

$$\text{C. R.} = \frac{\text{SVD}}{\sqrt{\frac{s^2_{lo}}{N_{lo}} + \frac{s^2_{hi}}{N_{hi}}}}$$

The maximum possible scale value difference (MPSVd) is the difference between the low half and the high half mean for an item when the division is made on the basis of responses to that item. It is interpreted as a measure of the discriminating power of the item when it is considered by itself rather than as part of the scale.
\[ \text{MPSVD} = \bar{x}_{hi} - \bar{x}_{lo} \]

The scale value difference ratio (SVDR) is the ratio of the SVD to the MPSVD and is interpreted as the percent of the maximum discriminating power of the item achieved when the item is combined with other items in the scale.

\[ \frac{\text{SVD}}{\text{MPSVD}} \]

The split-half correlation is a measure of the overall internal consistency of the scale. For each respondent, the odd-numbered items are summed and the sum is defined as X; the even-numbered items are summed and defined as Y. The split-half is a product-moment correlation of X and Y for the total sample.

\[ \text{RSPLIT} = \sqrt{\frac{N\xi XY - (\xi X)(\xi Y)}{(N\xi X^2 - (\xi X)^2)(N\xi Y^2 - (\xi Y)^2)}} \]

The corrected split-half correlation is computed by applying the Spearman-Brown prophecy formula to the split-half correlation. In computing the raw split-half the total scale is divided into two subscales (even items and odd items) with \( k/2 \) items. The corrected split-half is an estimate of the correlation of scales with \( k \) items.

\[ \text{RCORR} = \frac{2 \text{RSPLIT}}{1 + \text{RSPLIT}} \]
Revised Questionnaire

The C.R. between the low half and high half means for the items pointed to those items that appeared to significantly reveal differences. The 100 most significant items, \( p < 0.01 \), were chosen for the revised questionnaire.

A page of demographic information was attached to the revised form. Age, length of employment, geographic area where raised, size of locale, and education background were information sought. It can be assumed most police and fire fighters have completed high school since that is a prerequisite for employment, and that all have completed basic training within their departments because that is a prerequisite to being placed on duty. But there may be a number of subjects who have more than these minimum education requirements. Hackel found a surprisingly large number of college trained police in his study.\(^6\) These were not college graduates but were persons with some education at college level. Since the randomly selected control group of police and fire non-students will be taken from this same population, it may be expected that some of them will also have had some higher education. This does not decrease their value as a comparison group, because such educational experiences will have occurred before employment with the police or fire departments.

The revised test of 100 items was then ready to be administered. This test is reproduced in Appendix B. It
was decided to include fifty persons in each group. Selection of the five sample groups was made in the following manner. A random selection of students enrolled in Behavioral Science courses at Columbus Technical Institute was chosen to compose the category "Students Other Than Police or Fire". Police persons enrolled in the Law Enforcement technology comprised the category "Police Students", and fire fighters enrolled in the Fire Science technology made up the "Fire Students" group. Enrollment in these programs of in-service people numbered fifty-five for fire fighters and sixty for police. Pre-service students were omitted. No sampling was used because of the small number in each technology. The researcher simply contacted the police and fire classes on two consecutive evenings and administered the instruments to all those present. Students not present in classes that week were not tested. Sufficient numbers were tested for this study. For the last two groups, outside assistance was needed. Training officers with the Columbus, Ohio, Police Department and Fire Department graciously cooperated with this research. These officers agreed to select members of their departments and administer the tests to them, on a time schedule that would not interfere with regular on-going or special training. The police and fire persons were supposedly selected at random. However, it is just possible that the training officers took the first fifty department members they encountered.
There was no control over that. Still, their cooperation was appreciated. Within two weeks, the two samples "Police Non-Students" and "Fire Non-Students" had been tested. For all five categories, the following numbers were tested:
- Police Students - 51;
- Fire Students - 50;
- Students Other Than Police or Fire - 57;
- Police Non-Students - 55;
- Fire Non-Students - 52.

These five categories were identified "PS" for Police Students; "FS" for Fire Students; "S" for Students Other Than Police or Fire; "PNS" for Police Non-Students; and "FNS" for Fire Non-Students. All the categories were then set a uniform number of fifty. This meant randomly selecting test instruments from four categories until the number was reached. The "FS" category was already at that number. Making the numbers uniform was more appropriate for the type of analysis that was to follow.

Before analysis of the revised test, the 100 items were arranged into ten different scales, each reflecting a different dimension of attitudes toward education. Scale A, Supervisor-Leadership Improvement, contained twelve items related to improvement of the supervisory role through education. Scale B, Supervisors Views Toward Education, contained six items referring to views held by supervisors concerning education. Scale C, External Job Rewards, contained eight items related to matters of salary and promotion, while Scale D, Internal Job Rewards, contained eleven
items on matters such as turnover and discipline problem reduction. Scale E, Job Improvement, contained nine items related to personal improvement which would better job performance; and Scale F, Social Improvement, contained nine items pertaining to improvement that would better social life. Scale G, Improving Relations, consisted of nine items directed at improvement of relations with other segments of society. Scale H, Societal Benefits, contained fourteen items pertaining to benefits to society of education. Scale I, Educative Environment, contained fourteen items pertaining to views of educational environment as held by the respondents, and Scale J, Teacher-Figure, consisted of eight items referring to impressions of the teacher. These scales are reproduced and defined in Appendix C.

Analysis of variance using the F-test was performed on each of the ten scales and using the five groups, "PS", "FS", "S", "PNS", and "FNS". Formulas for the F-test are shown below.7

\[
S_t = \sum X^2 - \frac{(\sum X)^2}{N}
\]

\[
S_b = \frac{(\sum X_1)^2}{N_1} + \frac{(\sum X_2)^2}{N_2} + \frac{(\sum X_3)^2}{N_3} + \frac{(\sum X_4)^2}{N_4} + \frac{(\sum X_5)^2}{N_5} + \frac{(\sum X_t)^2}{N_t}
\]

Within Sum of Squares

\[
S_w = S_t - S_b
\]

Between Degrees of Freedom (Number of Groups less one)

\[
K - 1
\]
Within Degrees of Freedom $N - K$

Total Degrees of Freedom $(K - 1) + (N - K)$

Between Mean Square $M_b = \frac{S_b}{K - 1}$

Within Mean Square $M_w = \frac{S_w}{N - K}$

$F$ Ratio $\frac{M_b}{M_w}$

Should the $F$ Ratio not reveal differences in the groups, then that would complete the statistical analysis. Should the scales prove of significance, meaning the null hypotheses were rejected, then the next step is to find where the differences occurred. The Tukey test was selected for use in further analysis. Since there were five sample groups on each scale, ten comparisons must be made:

$$
\bar{x}_1 - \bar{x}_2; \bar{x}_1 - \bar{x}_3; \bar{x}_1 - \bar{x}_4; \bar{x}_1 - \bar{x}_5; \\
\bar{x}_2 - \bar{x}_3; \bar{x}_2 - \bar{x}_4; \bar{x}_2 - \bar{x}_5; \\
\bar{x}_3 - \bar{x}_4; \bar{x}_3 - \bar{x}_5; \\
\bar{x}_4 - \bar{x}_5.
$$

For the Tukey test, all ten comparisons must be calculated and then divided by $\sqrt{\frac{M_w}{N}}$. Then, the Studentized Range Distribution with proper degrees of freedom must be used to find the level of significance. Finally, all ten differences divided by $\sqrt{\frac{M_w}{N}}$ are compared with the percentile point in the Studentized Range Distribution. Any
difference must be greater than that percentile point in order to be significant. A second and quicker way is to multiply the value of the percentile point by $\sqrt{M_w/N}$ and compare this with each of the ten differences. The second procedure is quicker because it can easily be seen if the difference is larger than the product just obtained. For more information on this procedure, see Glass and Stanley, *Statistical Methods in Education and Psychology*.\(^{10}\)

This chapter has presented the method of study. The next chapter depicts the results of the method, using the five sample groups on the ten scales.
FOOTNOTES


5. P. T. Cleaver, Internal Consistency Item Analysis Routine c6.01.02E1, February 27, 1968, Document A, Columbus, Ohio, The Ohio State University Data Center, February 27, 1968.


9. Ibid., pp. 530, 532.

10. Ibid.
CHAPTER III

RESULTS

This chapter presents analyses of the data derived from the instruments. The first analysis was conducted on the five sample categories for each of the ten scales, using the $F$ test, analysis of variance. All were found significant. The next analysis was the Tukey test to determine where the significant differences occurred.

**Supervisor-Leadership Improvement Scale**

Table 1 shows the means, standard deviations, and ranges of scores for the sample groups on Scale A. The maximum possible score was sixty.

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>45.22</td>
<td>4.48</td>
<td>28-60</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>46.72</td>
<td>4.11</td>
<td>38-60</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>41.52</td>
<td>5.26</td>
<td>32-59</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td>38.70</td>
<td>7.94</td>
<td>20-58</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td>38.20</td>
<td>7.16</td>
<td>12-47</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>42.07</strong></td>
<td><strong>6.95</strong></td>
<td><strong>12-60</strong></td>
</tr>
</tbody>
</table>
Analysis using the F test showed significance as is shown in Table 2.

**TABLE 2**

**ANALYSIS OF VARIANCE SUMMARY TABLE COMPARING SAMPLE GROUPS MEAN SCORES ON SUPERVISOR-LEADERSHIP IMPROVEMENT SCALE**

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4</td>
<td>727.25</td>
<td>19.50*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>245</td>
<td>37.30</td>
<td></td>
</tr>
</tbody>
</table>

*p < .01.

Analysis of Scale A with the Tukey test revealed the differences occurred between the following group means. These differences are shown in Table 3.

"PS" score greater than "S" (.05 level);
"PS" score greater than "PNS" (.01 level);
"PS" score greater than "FNS" (.01 level);
"FS" score greater than "S" (.01 level);
"FS" score greater than "PNS" (.01 level);
"FS" score greater than "FNS" (.01 level).
TABLE 3
MEAN COMPARISON MATRIX ON SUPERVISOR-LEADERSHIP IMPROVEMENT SCALE SCORES FOR EACH GROUP

<table>
<thead>
<tr>
<th></th>
<th>&quot;PS&quot;</th>
<th>&quot;FS&quot;</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;FNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>-1.50</td>
<td>3.70*</td>
<td>6.52**</td>
<td>7.02**</td>
<td>&quot;PS&quot;</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>5.20**</td>
<td>8.02**</td>
<td>8.52**</td>
<td>3.32</td>
<td>&quot;S&quot;</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>2.82</td>
<td>.50</td>
<td>&quot;PNS&quot;</td>
<td>&quot;FNS&quot;</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05 level
** p < .01 level

Supervisors Views Toward Education Scale

Table 4 shows the means, standard deviations, and ranges of scores for the sample groups on Scale B. The maximum possible score was thirty.

TABLE 4
MEAN, STANDARD DEVIATION, AND RANGE OF SCORES OF SAMPLE GROUPS ON SUPERVISORS VIEWS TOWARD EDUCATION SCALE

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>21.54</td>
<td>3.68</td>
<td>9-29</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>21.94</td>
<td>3.21</td>
<td>12-30</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>19.44</td>
<td>3.56</td>
<td>12-29</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td>21.00</td>
<td>3.33</td>
<td>12-28</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td>21.78</td>
<td>2.46</td>
<td>16-26</td>
</tr>
<tr>
<td>Total</td>
<td>21.14</td>
<td>3.48</td>
<td>9-30</td>
</tr>
</tbody>
</table>

Analysis using the F test showed significance. This is revealed in Table 5.
### TABLE 5
ANALYSIS OF VARIANCE SUMMARY TABLE COMPARING SAMPLE GROUPS MEAN SCORES ON SUPERVISORS VIEWS TOWARD EDUCATION SCALE

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4</td>
<td>51.50</td>
<td>4.43*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>245</td>
<td>11.60</td>
<td></td>
</tr>
</tbody>
</table>

* p < .01.

Analysis of Scale B with the Tukey test showed the differences occurred between the following group means. These are shown in Table 6.

"PS" score greater than "S" (.05 level);
"FS" score greater than "S" (.01 level);
"FNS" score greater than "S" (.01 level).

### TABLE 6
MEAN COMPARISON MATRIX ON SUPERVISORS VIEWS TOWARD EDUCATION SCALE SCORES FOR EACH GROUP

<table>
<thead>
<tr>
<th></th>
<th>&quot;PS&quot;</th>
<th>&quot;FS&quot;</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;FNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>-.40</td>
<td>2.10*</td>
<td>.54</td>
<td>-.24</td>
<td>&quot;PS&quot;</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>2.50**</td>
<td>.94</td>
<td>.16</td>
<td>-1.56</td>
<td>&quot;FS&quot;</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td></td>
<td>-.56</td>
<td>-2.34**</td>
<td>.78</td>
<td>&quot;S&quot;</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&quot;PNS&quot;</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&quot;FNS&quot;</td>
</tr>
</tbody>
</table>

* p < .05 level
** p < .01 level
External Job Rewards Scale

Table 7 shows the means, standard deviations, and ranges of scores for Scale C. The maximum possible score was forty.

TABLE 7
MEAN, STANDARD DEVIATION, AND RANGE OF SCORES OF SAMPLE GROUPS ON EXTERNAL JOB REWARDS SCALE

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>30.98</td>
<td>3.62</td>
<td>24-39</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>31.40</td>
<td>4.28</td>
<td>23-40</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>28.50</td>
<td>3.86</td>
<td>22-39</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td>25.68</td>
<td>5.52</td>
<td>15-39</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td>24.18</td>
<td>4.78</td>
<td>12-36</td>
</tr>
<tr>
<td>Total</td>
<td>28.14</td>
<td>5.30</td>
<td>12-40</td>
</tr>
</tbody>
</table>

Analysis using the F test showed significance. This is depicted in Table 8.

TABLE 8
ANALYSIS OF VARIANCE SUMMARY TABLE COMPARING SAMPLE GROUPS MEAN SCORES ON EXTERNAL JOB REWARDS SCALE

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4</td>
<td>507.00</td>
<td>24.85*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>245</td>
<td>20.36</td>
<td></td>
</tr>
</tbody>
</table>

* p < .01.
Analysis of Scale C with the Tukey test revealed the
differences occurred between the following group means.
These are shown in Table 9.

"PS" score greater than "S" (.05 level);
"PS" score greater than "PNS" (.01 level);
"PS" score greater than "FNS" (.01 level);
"FS" score greater than "S" (.05 level);
"FS" score greater than "PNS" (.01 level);
"FS" score greater than "FNS" (.01 level);
"S" score greater than "PNS" (.05 level);
"S" score greater than "FNS" (.01 level).

TABLE 9
MEAN COMPARISON MATRIX ON EXTERNAL JOB REWARDS SCALE
SCORES FOR EACH GROUP

<table>
<thead>
<tr>
<th></th>
<th>&quot;PS&quot;</th>
<th>&quot;FS&quot;</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;FNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>-0.42</td>
<td>2.48*</td>
<td>5.30**</td>
<td>6.80**</td>
<td>&quot;PS&quot;</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>2.90*</td>
<td>5.72**</td>
<td>7.22**</td>
<td>4.32**</td>
<td>&quot;FS&quot;</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>2.82*</td>
<td>5.72**</td>
<td>7.22**</td>
<td>4.32**</td>
<td>&quot;S&quot;</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td>1.50</td>
<td>1.50</td>
<td>1.50</td>
<td>1.50</td>
<td>&quot;PNS&quot;</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td>1.50</td>
<td>1.50</td>
<td>1.50</td>
<td>1.50</td>
<td>&quot;FNS&quot;</td>
</tr>
</tbody>
</table>

* p < .05 level
** p < .01 level

Internal Job Rewards Scale

Table 10 shows the mean scores, standard deviations,
and ranges for Scale D. The maximum possible score was
fifty-five.
TABLE 10
MEAN, STANDARD DEVIATION, AND RANGE OF SCORES OF SAMPLE GROUPS ON INTERNAL JOB REWARDS SCALE

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>38.96</td>
<td>4.40</td>
<td>22-49</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>41.24</td>
<td>4.58</td>
<td>32-55</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>37.32</td>
<td>5.25</td>
<td>27-52</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td>35.62</td>
<td>5.85</td>
<td>21-53</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td>35.48</td>
<td>5.60</td>
<td>17-44</td>
</tr>
<tr>
<td>Total</td>
<td>37.72</td>
<td>5.60</td>
<td>17-55</td>
</tr>
</tbody>
</table>

Analysis using the F test showed significance. This is revealed in Table 11.

TABLE 11
ANALYSIS OF VARIANCE SUMMARY TABLE COMPARING SAMPLE GROUPS MEAN SCORES ON INTERNAL JOB REWARDS SCALE

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4</td>
<td>293.50</td>
<td>10.76*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>245</td>
<td>27.26</td>
<td></td>
</tr>
</tbody>
</table>

* p < .01.

Analysis of Scale D with the Tukey test showed significant differences occurred among the following mean scores. These are shown in Table 12.
"PS" score greater than "PNS" (.05 level);
"PS" score greater than "FNS" (.01 level);
"FS" score greater than "S" (.01 level);
"FS" score greater than "PNS" (.01 level);
"FS" score greater than "FNS" (.01 level).

**TABLE 12**

MEAN COMPARISON MATRIX ON INTERNAL JOB REWARDS SCALE
SCORES FOR EACH GROUP

<table>
<thead>
<tr>
<th></th>
<th>&quot;PS&quot;</th>
<th>&quot;FS&quot;</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;FNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;PS&quot;</td>
<td>-2.28</td>
<td>1.64</td>
<td>3.34*</td>
<td>3.48**</td>
<td></td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>3.92**</td>
<td>5.62**</td>
<td>1.70</td>
<td>5.76**</td>
<td></td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td></td>
<td></td>
<td></td>
<td>1.84</td>
<td>.14</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&quot;PS&quot;</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&quot;FS&quot;</td>
</tr>
</tbody>
</table>

* p < .05 level
** p < .01 level

**Job Improvement Scale**

Table 13 shows means, standard deviations, and range of scores for Scale E. The maximum possible score was forty-five.
TABLE 13
MEAN, STANDARD DEVIATION, AND RANGE OF SCORES OF SAMPLE GROUPS ON JOB IMPROVEMENT SCALE

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>35.06</td>
<td>3.96</td>
<td>18-42</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>35.98</td>
<td>3.34</td>
<td>30-45</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>32.84</td>
<td>4.24</td>
<td>23-45</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td>30.36</td>
<td>5.55</td>
<td>19-45</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td>30.70</td>
<td>6.66</td>
<td>9-41</td>
</tr>
<tr>
<td>Total</td>
<td>32.98</td>
<td>5.37</td>
<td>9-45</td>
</tr>
</tbody>
</table>

Analysis using the F test showed significance. This is depicted in Table 14.

TABLE 14
ANALYSIS OF VARIANCE SUMMARY TABLE COMPARING SAMPLE GROUPS MEAN SCORES ON JOB IMPROVEMENT SCALE

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between</td>
<td>4</td>
<td>317.25</td>
<td>12.97*</td>
</tr>
<tr>
<td>Groups</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within</td>
<td>245</td>
<td>24.46</td>
<td></td>
</tr>
<tr>
<td>Groups</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .01.

Analysis of Scale E with the Tukey test showed the differences occurred between the following group means. These are shown in Table 15.
"PS" score greater than "PNS" (.01 level);
"PS" score greater than "FNS" (.01 level);
"FS" score greater than "S" (.05 level);
"FS" score greater than "PNS" (.01 level);
"FS" score greater than "FNS" (.01 level).

**TABLE 15**
MEAN COMPARISON MATRIX ON JOB IMPROVEMENT SCALE SCORES FOR EACH GROUP

<table>
<thead>
<tr>
<th></th>
<th>&quot;PS&quot;</th>
<th>&quot;FS&quot;</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;FNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>-0.92</td>
<td>2.22</td>
<td>4.70**</td>
<td>4.36**</td>
<td>&quot;PS&quot;</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>3.14*</td>
<td>5.62**</td>
<td>2.48</td>
<td>5.28**</td>
<td>&quot;FS&quot;</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td></td>
<td>2.48</td>
<td></td>
<td>2.14</td>
<td>&quot;S&quot;</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td></td>
<td></td>
<td></td>
<td>-.34</td>
<td>&quot;PNS&quot;</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&quot;FNS&quot;</td>
</tr>
</tbody>
</table>

* p < .05 level
** p < .01 level

**Social Improvement Scale**

Table 16 shows the mean scores, standard deviations, and ranges for Scale F. The maximum possible score was forty-five.
TABLE 16
MEAN, STANDARD DEVIATION, AND RANGE OF SCORES OF SAMPLE GROUPS ON SOCIAL IMPROVEMENT SCALE

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>35.04</td>
<td>4.26</td>
<td>22-44</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>36.02</td>
<td>3.57</td>
<td>28-45</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>32.24</td>
<td>4.67</td>
<td>22-44</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td>30.74</td>
<td>5.73</td>
<td>17-45</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td>30.66</td>
<td>5.97</td>
<td>12-39</td>
</tr>
<tr>
<td>Total</td>
<td>32.94</td>
<td>5.40</td>
<td>12-45</td>
</tr>
</tbody>
</table>

Analysis using the F test showed significance. This is depicted in Table 17.

TABLE 17
ANALYSIS OF VARIANCE SUMMARY TABLE COMPARING SAMPLE GROUPS MEAN SCORES ON SOCIAL IMPROVEMENT SCALE

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4</td>
<td>305.25</td>
<td>12.34*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>245</td>
<td>24.73</td>
<td></td>
</tr>
</tbody>
</table>

* p < .01.

Analysis of Scale F with the Tukey test showed significant differences between the following means. These are shown in Table 18.
"PS" score greater than "S" (.05 level);
"PS" score greater than "PNS" (.01 level);
"PS" score greater than "FNS" (.01 level);
"FS" score greater than "S" (.01 level);
"FS" score greater than "PNS" (.01 level);
"FS" score greater than "FNS" (.01 level).

TABLE 18

MEAN COMPARISON MATRIX ON SOCIAL IMPROVEMENT SCALE SCORES FOR EACH GROUP

<table>
<thead>
<tr>
<th></th>
<th>&quot;PS&quot;</th>
<th>&quot;FS&quot;</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;FNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>- .98</td>
<td>2.80*</td>
<td>4.30**</td>
<td>4.38**</td>
<td>&quot;PS&quot;</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>3.78**</td>
<td>5.28**</td>
<td>5.36**</td>
<td>1.58</td>
<td>&quot;FS&quot;</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>1.50</td>
<td>1.58</td>
<td>1.08</td>
<td>&quot;S&quot;</td>
<td>&quot;S&quot;</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td>.08</td>
<td>&quot;PNS&quot;</td>
<td>&quot;PNS&quot;</td>
<td>&quot;PNS&quot;</td>
<td>&quot;PNS&quot;</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td></td>
<td></td>
<td></td>
<td>&quot;FNS&quot;</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05 level
** p < .01 level

Improving Relations Scale

Table 19 shows the mean scores, standard deviations, and range of scores for the sample groups on Scale G. The maximum possible score was forty-five.
TABLE 19
MEAN, STANDARD DEVIATION, AND RANGE OF SCORES OF SAMPLE GROUPS ON IMPROVING RELATIONS SCALE

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>33.26</td>
<td>4.29</td>
<td>18-43</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>35.62</td>
<td>3.84</td>
<td>27-45</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>29.76</td>
<td>6.12</td>
<td>18-44</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td>27.86</td>
<td>7.10</td>
<td>14-45</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td>30.70</td>
<td>5.76</td>
<td>9-38</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>31.44</strong></td>
<td><strong>6.18</strong></td>
<td><strong>9-45</strong></td>
</tr>
</tbody>
</table>

Analysis using the F test showed significance. This is revealed in Table 20.

TABLE 20
ANALYSIS OF VARIANCE SUMMARY TABLE COMPARING SAMPLE GROUPS MEAN SCORES ON IMPROVING RELATIONS SCALE

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4</td>
<td>462.00</td>
<td>14.67*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>245</td>
<td>31.49</td>
<td></td>
</tr>
</tbody>
</table>

* p < .01.

Analysis of Scale G using the Tukey test showed significant differences between the following group means. These are shown in Table 21.

"PS" score greater than "S" (.05 level);
"PS" score greater than "PNS" (.01 level);
"FS" score greater than "S" (.01 level);
"FS" score greater than "PNS" (.01 level);
"FS" score greater than "FNS" (.01 level).

**TABLE 21**

MEAN COMPARISON MATRIX ON IMPROVING RELATIONS SCALE SCORES FOR EACH GROUP

<table>
<thead>
<tr>
<th></th>
<th>&quot;FS&quot;</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;FNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>-2.36</td>
<td>3.50*</td>
<td>5.40**</td>
<td>2.56</td>
</tr>
<tr>
<td></td>
<td>5.86**</td>
<td>7.76**</td>
<td>4.92**</td>
<td>&quot;FS&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.90</td>
<td>- .94</td>
<td>&quot;S&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>-2.84</td>
<td>&quot;PNS&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>&quot;FNS&quot;</td>
</tr>
</tbody>
</table>

* p < .05 level
** p < .01 level

**Societal Benefits Scale**

Table 22 shows the mean scores, standard deviations, and range of scores for Scale H. The maximum possible score was seventy.

**TABLE 22**

MEAN, STANDARD DEVIATION, AND RANGE OF SCORES OF SAMPLE GROUPS ON SOCIETAL BENEFITS SCALE

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>51.26</td>
<td>6.52</td>
<td>32-68</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>53.54</td>
<td>5.60</td>
<td>43-70</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>47.88</td>
<td>7.45</td>
<td>34-70</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td>43.92</td>
<td>9.28</td>
<td>27-69</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td>45.64</td>
<td>7.82</td>
<td>14-57</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>48.44</strong></td>
<td><strong>8.28</strong></td>
<td><strong>14-70</strong></td>
</tr>
</tbody>
</table>
Analysis using the F test showed significance. This is shown in Table 23.

**TABLE 23**

ANALYSIS OF VARIANCE SUMMARY TABLE COMPARING SAMPLE GROUPS MEAN SCORES ON SOCIETAL BENEFITS SCALE

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4</td>
<td>781.50</td>
<td>13.84*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>245</td>
<td>56.48</td>
<td></td>
</tr>
</tbody>
</table>

* p < .01

Analysis of Scale H with the Tukey test showed significant differences between the following group means. These are shown in Table 24.

"PS" score greater than "PNS" (.01 level);
"PS" score greater than "FNS" (.01 level);
"FS" score greater than "S" (.01 level);
"FS" score greater than "PNS" (.01 level);
"FS" score greater than "FNS" (.01 level).

**TABLE 24**

MEAN COMPARISON MATRIX ON SOCIETAL BENEFITS SCALE SCORES FOR EACH GROUP

<table>
<thead>
<tr>
<th>&quot;PS&quot;</th>
<th>&quot;PS&quot;</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;FNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2.28</td>
<td>3.38</td>
<td>7.34**</td>
<td>5.62**</td>
<td>&quot;PS&quot;</td>
</tr>
<tr>
<td>5.66**</td>
<td>9.62**</td>
<td>3.96</td>
<td>7.90**</td>
<td>&quot;PS&quot;</td>
</tr>
<tr>
<td>3.96</td>
<td>9.62**</td>
<td>2.24</td>
<td>-1.72</td>
<td>&quot;S&quot;</td>
</tr>
<tr>
<td>3.96</td>
<td>5.66**</td>
<td>3.96</td>
<td>2.24</td>
<td>&quot;PNS&quot;</td>
</tr>
<tr>
<td>3.96</td>
<td>5.66**</td>
<td>3.96</td>
<td>2.24</td>
<td>&quot;FNS&quot;</td>
</tr>
</tbody>
</table>

** p < .01 level
Educative Environment Scale

Table 25 shows the mean scores, standard deviations, and range of scores for Scale I. The maximum possible score was seventy.

**TABLE 25**

MEAN, STANDARD DEVIATION, AND RANGE OF SCORES OF SAMPLE GROUPS ON EDUCATIVE ENVIRONMENT SCALE

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>50.88</td>
<td>5.79</td>
<td>41-61</td>
</tr>
<tr>
<td>&quot;PS&quot;</td>
<td>53.00</td>
<td>5.39</td>
<td>37-70</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>48.16</td>
<td>7.50</td>
<td>25-67</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td>47.30</td>
<td>7.36</td>
<td>33-69</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td>47.96</td>
<td>5.29</td>
<td>29-56</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>49.46</td>
<td>6.70</td>
<td>25-70</td>
</tr>
</tbody>
</table>

Analysis using the F test showed significance. This is depicted in Table 26.

**TABLE 26**

ANALYSIS OF VARIANCE SUMMARY TABLE COMPARING SAMPLE GROUPS MEAN SCORES ON EDUCATIVE ENVIRONMENT SCALE

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4</td>
<td>199.25</td>
<td>4.85*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>245</td>
<td>41.04</td>
<td></td>
</tr>
</tbody>
</table>

* p < .01
Analysis of Scale I with the Tukey test showed significant differences between the following group means. These are shown in Table 27.

"PS" score greater than "PNS" (.05 level);
"FS" score greater than "S" (.01 level);
"FS" score greater than "FNS" (.01 level);
"FS" score greater than "FNS" (.01 level).

**TABLE 27**

MEAN COMPARISON MATRIX ON EDUCATIVE ENVIRONMENT SCALE SCORES FOR EACH GROUP

<table>
<thead>
<tr>
<th></th>
<th>&quot;PS&quot;</th>
<th>&quot;FS&quot;</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;FNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>-2.12</td>
<td>2.72</td>
<td>3.58*</td>
<td>2.92</td>
<td></td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>4.84**</td>
<td>5.70**</td>
<td>.86</td>
<td>5.04**</td>
<td>&quot;FS&quot;</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>.20</td>
<td>-.66</td>
<td>&quot;PNS&quot;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td></td>
<td></td>
<td>&quot;FNS&quot;</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < .05 level
** p < .01 level

**Teacher-Figure Scale**

Table 28 shows means, standard deviations, and range of scores for Scale J. The maximum possible score was forty.
### TABLE 28
MEAN, STANDARD DEVIATION, AND RANGE OF SCORES OF SAMPLE GROUPS ON TEACHER-Figure Scale

<table>
<thead>
<tr>
<th>Sample Group</th>
<th>Mean Score</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;PS&quot;</td>
<td>29.56</td>
<td>3.05</td>
<td>20-38</td>
</tr>
<tr>
<td>&quot;FS&quot;</td>
<td>30.82</td>
<td>3.16</td>
<td>24-40</td>
</tr>
<tr>
<td>&quot;S&quot;</td>
<td>28.42</td>
<td>4.15</td>
<td>19-39</td>
</tr>
<tr>
<td>&quot;PNS&quot;</td>
<td>27.64</td>
<td>4.52</td>
<td>17-39</td>
</tr>
<tr>
<td>&quot;FNS&quot;</td>
<td>29.26</td>
<td>4.08</td>
<td>11-34</td>
</tr>
<tr>
<td>Total</td>
<td>29.14</td>
<td>3.98</td>
<td>11-40</td>
</tr>
</tbody>
</table>

Analysis using the F test showed significance. This is shown in Table 29.

### TABLE 29
ANALYSIS OF VARIANCE SUMMARY TABLE COMPARING SAMPLE GROUPS MEAN SCORES ON TEACHER-Figure Scale

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>4</td>
<td>72.00</td>
<td>4.79*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>245</td>
<td>15.03</td>
<td></td>
</tr>
</tbody>
</table>

* p < .01

Analysis of Scale J with the Tukey test showed significant differences between the following group means. These are shown in Table 30.
"FS" score greater than "S" (.05 level);
"FS" score greater than "PNS" (.01 level).

TABLE 30
MEAN COMPARISON MATRIX ON TEACHER-Figure SCALE SCORES FOR EACH GROUP

<table>
<thead>
<tr>
<th></th>
<th>&quot;PS&quot;</th>
<th>&quot;FS&quot;</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;FNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-1.26</td>
<td>1.14</td>
<td>1.92</td>
<td>.30</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.40*</td>
<td>3.18**</td>
<td>.78</td>
<td>- .84</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-1.62</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05 level  
** p < .01 level

Summary of Test Results

Eight of the ten scales revealed police students and fire students attained greater scores than police non-students or fire non-students. Scales A, C, D, E, F, G, H, and I differentiated among these sample groups. Scales B and J did not show significant differences. Police students and fire students scored significantly higher than students other than police or fire on five scales - A, B, C, F, and G. Only fire students scored higher than other students on the remaining scales - D, E, H, I, and J.

The first null hypothesis stated there is no difference between attitudes toward higher education of police students and those of other students, that is, students not enrolled in police or fire programs at Columbus Technical
Institute. This is rejected by the data for Scales A, B, C, F, and G. The $H_0$ is not rejected for Scales D, E, H, I, and J.

The second null hypothesis stated there is no difference between attitudes toward higher education of fire students and those of other students, that is, students not enrolled in police or fire programs at Columbus Technical Institute. This is rejected by the data for all the scales.

Both the third and fourth null hypotheses are rejected for eight scales, as there are differences between scores of police students and police non-students, and between scores of fire students and fire non-students. Differences were found to exist for Scales A, C, D, E, F, G, H, and I.

Both "PS" and "FS" achieved higher average scores than the total average for all sample groups. The "S" group was near average for total, while "PNS" and "FNS" were almost always below average. Percent of maximum possible score generally averaged seventy, as shown in Table 31. Average "PS" and "FS" scores ranged between 71 and 80 percent of maximum possible for the scales. These scores were statistically greater than scores of "S", "PSN", or "FNS". Table 32 presents the average scores per item for each scale. While item scores of "PS" and "FS" may not appear higher than scores of "S", "PNS", or "FNS",
### TABLE 31

Mean Score and Percent of Maximum Possible Score for Sample Groups by Scales

<table>
<thead>
<tr>
<th>Scale</th>
<th>Total</th>
<th>&quot;PS&quot;</th>
<th>&quot;FS&quot;</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;FNS&quot;</th>
<th>Maximum Possible</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\bar{x}$</td>
<td>$\bar{x}$</td>
<td>$\bar{x}$</td>
<td>$\bar{x}$</td>
<td>$\bar{x}$</td>
<td>$\bar{x}$</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>42.07</td>
<td>70.12</td>
<td>45.55</td>
<td>75.92</td>
<td>46.72</td>
<td>69.20</td>
<td>38.70 64.50</td>
</tr>
<tr>
<td>B</td>
<td>21.14</td>
<td>70.46</td>
<td>21.54</td>
<td>71.80</td>
<td>21.94</td>
<td>73.13</td>
<td>19.44 64.80</td>
</tr>
<tr>
<td>C</td>
<td>28.14</td>
<td>70.35</td>
<td>30.98</td>
<td>77.45</td>
<td>31.40</td>
<td>78.50</td>
<td>28.50 64.20</td>
</tr>
<tr>
<td>D</td>
<td>37.72</td>
<td>68.58</td>
<td>38.96</td>
<td>70.84</td>
<td>41.24</td>
<td>74.98</td>
<td>37.32 64.76</td>
</tr>
<tr>
<td>E</td>
<td>32.98</td>
<td>73.28</td>
<td>35.06</td>
<td>77.91</td>
<td>35.98</td>
<td>79.96</td>
<td>32.84 72.98</td>
</tr>
<tr>
<td>F</td>
<td>32.94</td>
<td>73.20</td>
<td>35.04</td>
<td>77.86</td>
<td>36.02</td>
<td>80.04</td>
<td>32.24 71.64</td>
</tr>
<tr>
<td>G</td>
<td>31.44</td>
<td>69.86</td>
<td>33.26</td>
<td>73.91</td>
<td>35.62</td>
<td>79.16</td>
<td>29.76 66.13</td>
</tr>
<tr>
<td>H</td>
<td>48.44</td>
<td>69.20</td>
<td>51.26</td>
<td>73.22</td>
<td>53.54</td>
<td>76.48</td>
<td>47.88 68.40</td>
</tr>
<tr>
<td>I</td>
<td>49.46</td>
<td>70.66</td>
<td>50.88</td>
<td>72.68</td>
<td>53.00</td>
<td>75.71</td>
<td>48.16 68.80</td>
</tr>
<tr>
<td>J</td>
<td>29.14</td>
<td>72.85</td>
<td>29.56</td>
<td>73.90</td>
<td>30.82</td>
<td>77.05</td>
<td>28.42 71.05</td>
</tr>
</tbody>
</table>

A - Supervisor-Leadership Improvement Scale (12 Items)
B - Supervisors Views Toward Education Scale (6 Items)
C - External Job Rewards Scale (8 Items)
D - Internal Job Rewards Scale (11 Items)
E - Job Improvement Scale (9 Items)
F - Social Improvement Scale (9 Items)
G - Improving Relations Scale (9 Items)
H - Societal Benefits Scale (14 Items)
I - Educative Environment Scale (14 Items)
J - Teacher-Figure Scale (8 Items)
TABLE 32
MEAN SCORE AND AVERAGE SCORE PER ITEM FOR SAMPLE GROUPS BY SCALES

<table>
<thead>
<tr>
<th>Scale</th>
<th>Total per X item</th>
<th>&quot;PS&quot; per X item</th>
<th>&quot;FS&quot; per X item</th>
<th>&quot;S&quot; per X item</th>
<th>&quot;PNS&quot; per X item</th>
<th>&quot;FNS&quot; per X item</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>42.07 3.50</td>
<td>45.55 3.80</td>
<td>46.72 3.89</td>
<td>41.52 3.46</td>
<td>38.70 3.22</td>
<td>38.20 3.18</td>
</tr>
<tr>
<td>C</td>
<td>28.14 3.52</td>
<td>30.98 3.87</td>
<td>31.40 3.92</td>
<td>28.50 3.56</td>
<td>25.68 3.21</td>
<td>24.18 3.02</td>
</tr>
<tr>
<td>D</td>
<td>37.72 3.42</td>
<td>38.96 3.54</td>
<td>41.24 3.75</td>
<td>37.32 3.39</td>
<td>35.62 3.24</td>
<td>35.48 3.22</td>
</tr>
<tr>
<td>E</td>
<td>32.98 3.66</td>
<td>35.06 3.90</td>
<td>35.98 4.00</td>
<td>32.84 3.64</td>
<td>30.36 3.37</td>
<td>30.70 3.41</td>
</tr>
<tr>
<td>F</td>
<td>32.94 3.66</td>
<td>35.04 3.89</td>
<td>36.02 4.00</td>
<td>32.24 3.58</td>
<td>30.74 3.42</td>
<td>30.66 3.40</td>
</tr>
<tr>
<td>G</td>
<td>31.44 3.49</td>
<td>33.26 3.70</td>
<td>35.62 3.96</td>
<td>29.76 3.30</td>
<td>27.86 3.10</td>
<td>30.70 3.41</td>
</tr>
<tr>
<td>H</td>
<td>48.44 3.46</td>
<td>51.26 3.66</td>
<td>53.54 3.82</td>
<td>47.88 3.42</td>
<td>43.92 3.14</td>
<td>45.64 3.26</td>
</tr>
<tr>
<td>I</td>
<td>49.46 3.53</td>
<td>50.88 3.63</td>
<td>53.00 3.78</td>
<td>48.16 3.44</td>
<td>47.30 3.38</td>
<td>47.96 3.42</td>
</tr>
<tr>
<td>J</td>
<td>29.14 3.64</td>
<td>29.56 3.70</td>
<td>30.82 3.85</td>
<td>28.42 3.55</td>
<td>27.64 3.46</td>
<td>29.26 3.66</td>
</tr>
</tbody>
</table>

A - Supervisor-Leadership Improvement Scale (12 items)
B - Supervisors Views Toward Education Scale (6 items)
C - External Job Rewards Scale (8 items)
D - Internal Job Rewards Scale (11 items)
E - Job Improvement Scale (9 items)
F - Social Improvement Scale (9 items)
G - Improving Relations Scale (9 items)
H - Societal Benefits Scale (14 items)
I - Educative Environment Scale (14 items)
J - Teacher-Figure Scale (8 items)
the scale scores did test significantly greater on most scales.

**Personal Data**

Table 33 shows the sample groups by age group, mean age, and range of age. The age for "S" is the lowest (22.44 years) while the age for "FNS" is the highest (37.88 years). Mean age for "PS" is 30.94 years. For "FS" the age is 31.96 years, and for "PNS" the age is 30.50 years. Ages have varied considerably in different studies concerning police. Hackel found a mean age of 36.07 years in his study.¹ Robinson found a median age of 28.1 years,² and Schaeffer found a median age of 37.0 years.³

It is understood why "S" ages are lower than other sample groups. The police and fire professions set minimum ages for job entry of 21 years. The Columbus Technical Institute has no minimum age requirement. It is not known why "FNS" has such a high age.

Table 34 shows the study population by years employed, mean years, and range of years employed. The category "S" contained 31 respondents who were not employed at all. For the other categories, all were employed. Mean years of service for "PS" was 6.64 years; and for "FS" the mean was 7.08 years. The mean for "PNS" was 6.04 years, and the mean for "FNS" was 12.94 years. Since "S" had such a low number employed, the mean was very low - 1.26 years. Even
TABLE 33
SAMPLE GROUPS BY AGE GROUP (NUMBER AND PERCENT), MEAN AGE, AND RANGE OF AGE

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Total</th>
<th>&quot;PS&quot;&lt;sup&gt;a&lt;/sup&gt;</th>
<th>&quot;PS&quot;</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;PNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
<tr>
<td>Less than 21</td>
<td>29 11.65</td>
<td>- 44.00</td>
<td>- 44.00</td>
<td>29 58.00</td>
<td>- 44.00</td>
<td>- 44.00</td>
</tr>
<tr>
<td>21-25</td>
<td>41 16.47</td>
<td>5 10.20</td>
<td>6 12.00</td>
<td>9 18.00</td>
<td>18 36.00</td>
<td>3 6.00</td>
</tr>
<tr>
<td>26-30</td>
<td>68 27.31</td>
<td>19 38.78</td>
<td>15 30.00</td>
<td>9 18.00</td>
<td>16 32.00</td>
<td>9 18.00</td>
</tr>
<tr>
<td>31-35</td>
<td>51 20.49</td>
<td>20 40.82</td>
<td>16 32.00</td>
<td>1 2.00</td>
<td>6 12.00</td>
<td>8 16.00</td>
</tr>
<tr>
<td>36-40</td>
<td>23 9.24</td>
<td>3 6.12</td>
<td>9 18.00</td>
<td>1 2.00</td>
<td>1 2.00</td>
<td>9 18.00</td>
</tr>
<tr>
<td>41-45</td>
<td>17 6.82</td>
<td>1 2.04</td>
<td>2 4.00</td>
<td>- 44.00</td>
<td>4 8.00</td>
<td>10 20.00</td>
</tr>
<tr>
<td>46-50</td>
<td>16 6.42</td>
<td>1 2.04</td>
<td>2 4.00</td>
<td>1 2.00</td>
<td>2 4.00</td>
<td>10 20.00</td>
</tr>
<tr>
<td>51-55</td>
<td>4 1.60</td>
<td>- 44.00</td>
<td>- 44.00</td>
<td>- 44.00</td>
<td>3 6.00</td>
<td>1 2.00</td>
</tr>
<tr>
<td>Total</td>
<td>249 100.00</td>
<td>49 100.00</td>
<td>50 100.00</td>
<td>50 100.00</td>
<td>50 100.00</td>
<td>50 100.00</td>
</tr>
<tr>
<td>Mean Age</td>
<td>30.74</td>
<td>30.94</td>
<td>31.96</td>
<td>22.44</td>
<td>30.50</td>
<td>37.88</td>
</tr>
</tbody>
</table>

<sup>a</sup> One "PS" did not reveal age.
### TABLE 34

**SAMPLE GROUPS BY YEARS EMPLOYED (NUMBER AND PERCENT), MEAN YEARS, AND RANGE OF YEARS EMPLOYED**

<table>
<thead>
<tr>
<th>Years Employed</th>
<th>Total</th>
<th>&quot;PS&quot;&lt;sup&gt;a&lt;/sup&gt;</th>
<th>&quot;PS&quot;</th>
<th>&quot;S&quot;&lt;sup&gt;b&lt;/sup&gt;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;FNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>None</td>
<td>31</td>
<td>12.55</td>
<td>--</td>
<td>-----</td>
<td>31</td>
<td>62.00</td>
</tr>
<tr>
<td>1-5</td>
<td>111</td>
<td>44.94</td>
<td>16</td>
<td>34.04</td>
<td>27</td>
<td>54.00</td>
</tr>
<tr>
<td></td>
<td>45</td>
<td>18.22</td>
<td>24</td>
<td>51.07</td>
<td>11</td>
<td>22.00</td>
</tr>
<tr>
<td></td>
<td>28</td>
<td>11.34</td>
<td>6</td>
<td>12.76</td>
<td>8</td>
<td>16.00</td>
</tr>
<tr>
<td>11-15</td>
<td>15</td>
<td>6.07</td>
<td>--</td>
<td>-----</td>
<td>2</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>6.88</td>
<td>1</td>
<td>2.13</td>
<td>2</td>
<td>4.00</td>
</tr>
<tr>
<td>16-20</td>
<td>17</td>
<td>6.88</td>
<td>1</td>
<td>2.13</td>
<td>2</td>
<td>4.00</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>6.07</td>
<td>--</td>
<td>-----</td>
<td>4</td>
<td>8.00</td>
</tr>
<tr>
<td>21-25</td>
<td>17</td>
<td>6.88</td>
<td>1</td>
<td>2.13</td>
<td>4</td>
<td>8.00</td>
</tr>
<tr>
<td></td>
<td>247</td>
<td>100.00</td>
<td>47</td>
<td>100.00</td>
<td>50</td>
<td>100.00</td>
</tr>
<tr>
<td>Mean Years</td>
<td>6.79</td>
<td>6.641</td>
<td>7.08</td>
<td>1.261</td>
<td>6.04</td>
<td>12.94</td>
</tr>
<tr>
<td>Range</td>
<td>0-25</td>
<td>1-22</td>
<td>1-25</td>
<td>0-13</td>
<td>1-25</td>
<td>2-25</td>
</tr>
</tbody>
</table>

<sup>a</sup> - Three "PS" did not reveal years employed.

<sup>b</sup> - When the 31 "S" who were not employed were excluded, the figures became Total - 19; Mean Years - 3.32; and Range 1-13.
for only those "S" respondents who were employed, the mean is still low - 3.32 years. Since "S" has such a low age mean, it is understandable why the average work years is also low. Since "FNS" has such a high age mean, it is also understandable why the average years employed is high for this group. As with age, varying years of service have been found in police studies. Hackel found police had a mean length of service of 10.7 years.\(^4\) Robinson found a median length of 3.43 years,\(^5\) and Schaeffer found a median length of service of 10.6 years.\(^6\)

Table 35 shows the sample groups by area where raised. The majority of all respondents came from Franklin County, Ohio. Of the remainder, the majority came from other Ohio counties. The rest had been raised in states other than Ohio. It appears that "PNS" and "FNS" are more likely to have been raised in Franklin County than the other sample groups. The "S" group was more likely to have come from another county or another state.

Table 36 shows the sample groups by size of locality where raised. More respondents were raised in a large city than in any other type setting. Next most frequent size locality was small town, followed by mid-size city. Farm or rural area was the origin for the fewest respondents. The differences in percentages between "FS" and "PS" compared with "PNS" and "FNS" are interesting.
### TABLE 35
SAMPLE GROUPS BY AREA WHERE RAISED (NUMBER AND PERCENT)

<table>
<thead>
<tr>
<th>Area Where Raised</th>
<th>Total</th>
<th>&quot;PS&quot;</th>
<th>&quot;FS&quot;</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;&lt;sup&gt;a&lt;/sup&gt;</th>
<th>&quot;FNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Franklin County</td>
<td>150</td>
<td>60.24</td>
<td>29</td>
<td>58.00</td>
<td>30</td>
<td>60.00</td>
</tr>
<tr>
<td>Another Ohio County</td>
<td>62</td>
<td>24.90</td>
<td>12</td>
<td>24.00</td>
<td>14</td>
<td>28.00</td>
</tr>
<tr>
<td>Another State</td>
<td>37</td>
<td>14.86</td>
<td>9</td>
<td>18.00</td>
<td>6</td>
<td>12.00</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>249</strong></td>
<td>100.00</td>
<td><strong>50</strong></td>
<td>100.00</td>
<td><strong>50</strong></td>
<td>100.00</td>
</tr>
</tbody>
</table>

<sup>a</sup> - One "PNS" did not reveal area where raised.
### TABLE 36
SAMPLE GROUPS BY SIZE OF LOCALITY WHERE RAISED (NUMBER AND PERCENT)

<table>
<thead>
<tr>
<th>Size of Locality</th>
<th>Total</th>
<th>&quot;PS&quot;</th>
<th>&quot;FS&quot;^a</th>
<th>&quot;S&quot;</th>
<th>&quot;PNS&quot;</th>
<th>&quot;FNS&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Farm or Rural</td>
<td>30</td>
<td>12.04</td>
<td>7</td>
<td>14.00</td>
<td>3</td>
<td>6.12</td>
</tr>
<tr>
<td>Small Town</td>
<td>55</td>
<td>22.09</td>
<td>13</td>
<td>26.00</td>
<td>14</td>
<td>28.58</td>
</tr>
<tr>
<td>Mid-Size City</td>
<td>51</td>
<td>20.48</td>
<td>11</td>
<td>22.00</td>
<td>9</td>
<td>18.36</td>
</tr>
<tr>
<td>Large City</td>
<td>113</td>
<td>45.39</td>
<td>19</td>
<td>38.00</td>
<td>23</td>
<td>46.94</td>
</tr>
<tr>
<td>Total</td>
<td>249</td>
<td>100.00</td>
<td>50</td>
<td>100.00</td>
<td>49</td>
<td>100.00</td>
</tr>
</tbody>
</table>

a - One "FS" did not reveal size of locality where raised.
Table 37 shows the sample groups by years of education. The samples contained a few persons who did not finish high school. For police or fire personnel, this generally means older members of the departments. A large number (134 or 53.8 percent) of the study population reported education beyond high school. Even for the "PNS" and "FNS", this was true, as twenty-four in each of these samples had some education beyond high school. This amounted to 48 percent of these samples. In his police sample, Hackel found 26 percent had some college work. Aside from "PNS" and "FNS", however, education of the sample groups was under reported. Everyone of the "S", "FS", and "PS" could have reported some post high school education.

It is difficult to explain why differences occur in personal data from one study to another. They exist. This may be perplexing to some, but this writer does not consider the differences between studies meaningful. This section on data was for descriptive purposes, rather than for analytic purposes. The next chapter presents the meaning of results and interpretations, and poses some questions for future research.
### TABLE 37

**SAMPLE GROUPS BY YEARS OF EDUCATION (NUMBER AND PERCENT)**

<table>
<thead>
<tr>
<th>Years of Education</th>
<th>Total</th>
<th>&quot;PS&quot;&lt;sup&gt;a&lt;/sup&gt;</th>
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<sup>a</sup> One "PS" did not reveal years of education.


CHAPTER IV
INTERPRETATION

This chapter presents the interpretation of the results reported in Chapter III. Applications are made to police and fire education, in attempts to meet the objectives of the study set forth in Chapter I. Extension is then made to adult education in general. Finally, recommendations for future research are made.

Supervisory Skills

Scores on Scales A and B (Supervisor-Leadership Improvement and Supervisors Views Toward Education) for police and fire students are higher than for non-students. This indicates these students believe education aids them in improving skills as supervisors, and that education improves the performance of their own supervisors. This result can be useful to schools such as Columbus Technical Institute in recruiting additional students. Police and fire fighters are likely to be attracted to a proposal of possible improvement in ability to handle supervisory type problems that occur on the job. Curriculum should reflect this. The Columbus Technical Institute offers several
courses with the objective of developing leadership skills. These include Supervision of Public Service Personnel; Fire Fighting Command; Police Administration; Fire Administration; Personnel Training; and Trends and Planning. Several graduates of the police and fire programs have been promoted to supervisory positions. They can be useful in recruiting other students from these occupations. Their presence also offers the Institute an entry point into the departments in central Ohio. The promoted officers provide the best evidence that the education program at Columbus Technical Institute is practical to officers hoping for advancement. These police and fire supervisors can encourage other officers to register for courses. The Institute could enhance recruiting possibilities by using results from this instrument and by securing the assistance of already promoted graduates.

Students other than police and fire believe education is useful for skill improvement in supervision. This information can be useful to the Institute in recruiting students for other technologies. The potential for advancement and improvement of skills as a recruiting technique should be stressed.

There was no difference between police and fire students when compared with police and fire non-students on perceived values of supervisors' views toward education.
Whether students or not, employees in these professions share the same perception of their supervisors' views toward education. They are probably accurate. This means the Institute has to convince the supervisors as well as patrol and fire fighter ranks on the value of education. The Institute could attempt this through use of its own graduates who have been promoted. People are more likely to listen to colleagues than to outsiders with an obvious vested interest in education. Therefore, police and fire supervisors are more likely to listen to other police and fire supervisors than to representatives of the Institute. Supervisors should be convinced of the merits of education before personnel in their commands can be expected to accept education as a valuable means of improving leadership ability.

**Job Rewards**

Scores on Scales C and D (External Job Rewards and Internal Job Rewards) showed police and fire students believed education had job rewards. If this could be stressed in recruiting non-students in these occupations, it might have some impact. Rewards were both external and internal. It is advised that recruiting emphasize external rewards, because tangible items are more easily discussed and accepted than non-tangible ones. Salary and promotion possibilities are more readily communicated than loyalty
and discipline issues. Part of the tangibles are visible through the advancement of graduates. Cooperation of these graduates would be practical in attracting other students from police and fire ranks. The Columbus Technical Institute could use this approach in other technical areas as well. It is believed that stressing tangibles would be valuable for recruiting young students, because the basic needs of these young persons have not yet been satisfied. Maslow has shown that until basic needs are met, people cannot concern themselves with higher level needs.\(^1\) Showing potential students that education can help satisfy basic needs and obtain tangible items is a useful recruiting device. Coursework should reflect this by preparing students to obtain the tangibles. This requires curriculum reflect attainment, and that teaching be geared to it. The Institute does attempt to prepare students for jobs and seems to fulfill this condition.

**Job and Social Improvements**

Scores on Scales E and F (Job Improvement and Social Improvement) showed police and fire students believe they obtain job and social improvement through education, while non-students do not accept this as readily. Beliefs in job improvement could be useful in recruiting, curriculum planning, and teaching. The best approach is through the promoted graduates of the programs. With their
cooperation, the belief in job improvement through education could be circulated among other supervisors and through the ranks. Coupled with supervisory skill improvement, the job improvement information might even encourage some of these supervisors to enroll in courses. The curricula of police and fire programs emphasize job skills. Teaching reflects this emphasis, and several ex-police and ex-fire officers instruct many of the technical courses. These same instructors hold degrees from institutions of higher education.

Social improvement is a subjective area and is difficult to assess, although some studies cited previously have discussed this (see Chapter I). The fact remains police and fire students believed education resulted in social improvement while police and fire non-students did not rate education high in this regard. It is not recommended this be used in recruiting. It is better to accept this as a latent function of education rather than a manifest one. This researcher believes in the value of education for social improvement but still believes it should be minimized in recruiting efforts. Non-enrolled persons are not about to appreciate intangible arguments for education. Police and fire occupations are of an authoritarian, uniformed, disciplined, para-military type. Persons in these occupations may scoff at arguments of social improvement value. This writer believes it is
better to allow social improvement to gradually develop once the non-students become students.

**Improving Relations and Societal Benefits**

Scale G (Improving Relations) revealed effect of education on improving relations is viewed as very significant. Improvement in relations with other segments of society is seen as quite important. It is perceived that better educated police will have higher quality contacts with different segments of society, and this should improve relations with these segments. This researcher believes, however, that education alone is insufficient for improving relations. It has been reported that extensive contact is the most important determinant of public image police. Slight contact usually results in a negative image. It is suggested that a combination of extensive contact and education is useful in improving relations. Since police departments are concerned with public relations and community relations, this information could be useful to them in planning their programs. The Columbus Technical Institute could stress to police and fire supervisors how education can be useful in public relations and community relations programs. Curriculum should include courses designed to reach these goals. Columbus Technical Institute provides technical courses for police and fire students in public relations. Police students take a course in
police-community relations. All students, including police and fire, must complete requirements in Behavioral Science and Communications Skills courses, which tend to improve their own social skills in ability to understand themselves and other people, to communicate with others, and to interact with others.

Scale H (Societal Benefits) showed the belief that education of police and fire students brings benefits to the society of which they are part. People whose jobs bring them into contact with an educated public must be able to communicate with that public, and education becomes a "must" for this purpose. Police and fire fighters exert control over the lives of others. In American society, police and fire agencies have taken over much of the protective function formerly held by the family. These agencies exert control without benefit of kinship. According to Kennedy and Kennedy, this is likely to produce resentment toward them. Persons in police and fire fighting jobs must be able to exercise their social control role without incurring resentment. Relations improvement and societal benefits are important for reducing conflict.

Police and fire students believe society benefits from having educated professionals. This researcher shares that belief. It is not recommended this be used for recruiting. It should be used in curriculum planning and teaching. Courses such as public relations,
police-community relations, and family crisis intervention are believed to have beneficial results for both police and the public. Societal benefits might provide a useful argument for safety directors and other administrative officials, and might even win their endorsement of the programs. Societal benefits is not seen as a useful recruiting device, however.

**Educative Environment and Teacher-Figure**

Scale I (Educative Environment) showed police and fire students view the educative environment in a more positive way than non-students viewed it. Scale J (Teacher-Figure) scores showed views of the teacher-figure are similar, regardless of enrollment or non-enrollment in school. Adults out of school for some time, as most of these police and fire non-students have been with an average age in the 30's, often have unpleasant memories of school. They carry images of past school experiences which may be negative. They might have been treated with disrespect and could have acquired the perception they were not smart enough to handle academic work. This causes them to be apprehensive about returning to school. Enrolled police and fire students have a more favorable attitude toward the educative environment because of their recent experience with it. This can certainly be useful in recruiting. Supervisors and patrol and fire fighter ranks can be effective in
communicating that adult learning is not the same as childhood learning. This would require cooperation and planning between school representatives, police and fire supervisors, and line patrol/fire fighter ranks.

Physical facilities should be attractive, parking lots should be adequate, and support services should be provided. These support services include such items as cafeteria, library, and media services.

Classes should be geared to adult levels and this is done at Columbus Technical Institute. Word of the adult outlook and physical dimension of the learning environment needs to be communicated among the ranks for recruitment purposes. Admissions personnel who travel to high schools for youth recruitment communicate this message. Campus tours are conducted for high school students. These visits and tours could also be arranged for in-service police and fire prospective students.

View of the teacher-figure has no usefulness for recruiting. The similarity between students' scores and non-students' scores on this scale may be viewed as either: 1) Students, including police and fire, lack a positive image of teachers; 2) Students and non-students alike have a neutral image of teachers; or 3) Non-students have a more favorable image of teachers than was thought. This writer prefers to accept the third option. A study conducted at the Columbus Technical Institute found that students have
a favorable image of their teachers. Perhaps non-students also have a positive impression of teachers.

Summary

Overall, "PS" and "FS" achieved higher scores than the total average for all sample groups, as was shown in Table 31. For each item on the ten scales, "PS" and "FS" averaged a higher score than the total average for all sample groups, as was shown in Table 32. Specifically, "PS" and "FS" averaged scores per item closer to favorable category than did the "S", "PNS", and "FNS". Scores for "PS" and "FS" were over halfway between the middle category "Undecided" and the more favorable category. For all but two items, the favorable category was "Agree" (see Appendix B). "PS" and "FS" averaged a score closer to four on the item per scale than did the other categories. Scores for "PNS" and "FNS" averaged close to three, the "Undecided" category. Scores for "S" were generally between the "PS"-"FS" and the "PNS"-"FNS" groups.

Several applications of the test results have been suggested for recruiting, curriculum planning, and instruction of police and fire students. It is recommended the Columbus Technical Institute stress material benefits, using the leadership-improvement test results, and utilizing the already promoted officers who graduated from police or fire programs. These persons could assist in
recruiting other in-service students. They could also acquire the cooperation of other supervisors. It is recommended the practical benefits be emphasized. Potential external rewards of education are more attractive to police and fire fighters than possible internal rewards. Arguments in favor of job skills improvement would encourage some supervisors to send their personnel to institutions of higher education. Improvement of job skills and of leadership skills might even entice some supervisors to attend classes, particularly those courses specifically dealing with supervision. These approaches seem practical and should be fruitful in recruiting.

Social skills improvement is not seen as a useful recruitment item because it is intangible. While it appears as a valuable by-product of education, it should not be emphasized in recruiting. Also, societal benefits should not be stressed in recruiting police or fire students. Societal benefits and improving relations might have value when addressing safety directors or other government officials, but they would have little impact in direct recruitment.

Apprehension about returning to classes could be lessened by having police and fire fighters already enrolled in school discuss the different type environment, instruction, and interaction that occurs at higher education
institutions. Peer support could do much to lessen anxieties and thus increase possibilities of return to school of the non-student.

This section has endeavored to apply the test results and satisfy the objectives discussed earlier. The outlined strategy was planned to assist Columbus Technical Institute in recruitment and instruction of police and fire students, although part of this strategy can be applied to other technology areas. The key to the strategy is the utilization of graduated supervisors and lesser ranks in the recruitment process. This would call for careful coordination of the efforts, much direct personal contact, and regular verbal and written contacts between school officials and the police/fire officials. The supervisors serve as examples of the material benefits of education. They are more likely to be effective in communicating with other supervisors and lesser ranks than are school officials. They can impart knowledge of the benefits of education to the individual. These benefits should be of the tangible, objective, or external type, rather than the intangible, subjective, or internal type. The latter will accrue in time, once the potential students enroll, but they are not seen as viable recruiting arguments. The lesser ranks can do much to ease fears of these prospects about returning to school after many years away from it. Possible negative views of education could be reduced by the peer support and
by campus visits. It is advocated that a joint venture between the police and fire professions and the Columbus Technical Institute be initiated for the purpose of attracting additional students in these programs.

Applications for Adult Educators

Suggestions for recruiting police and fire students using the resources of police and fire agencies in cooperation with those of the Columbus Technical Institute may be expanded to include other colleges and other categories of adults. Ralph Spence believes that, in the future, the total educational task will require the full resources of all institutions and agencies. The strategy proposed here was an attempt to bring about the involvement of several agencies in the educational process. Spence, who believes the education of adults will be central in the next years, claims action in the community is the payoff, and the purpose of education is to improve the actions of community members. Police and fire students believe they are improved by education. This should mean actions are also improved. There is no reason curriculum planning, recruiting, or teaching of adults in other specialties could not be influenced by the same strategies set forth here. Joint ventures that stress material benefits of education should be fruitful to other adult educators who interact with members of different occupational groups.
This writer does not mean to imply the intangible benefits should be ignored in planning or teaching. Intangibles can be acquired only after the adults become students. Then, they must have adequate tangible benefits before they can be impressed by intangibles. They have to be secure in the physical comforts before they become concerned with other level needs. After this security is obtained, then appreciation of intrinsic values of education can be developed in adults. As an instructor, this writer has often been impressed by adult learners who told him, after the course ended, that they enjoyed his sociology or marriage class and got more from it this time than when they had taken a similar course ten or fifteen years earlier. Often, personal growth and movement toward self-fulfillment was part of what they obtained. On the first effort, job preparation had been their main goal. Intangibles seem to be more important and appreciated by adults - after their basic needs have been satisfied.

Institutions of higher education should encourage students to return throughout their lives. Columbus Technical Institute should encourage police and fire students to constantly return for whatever courses they wish. Other adult educators in different school settings working with adult students in whatever occupations can follow the same process. It is recommended, for planning and teaching, that emphasis on life-long education be considered.
Other occupations are not as strictly structured as police or fire but still the same basics apply to almost all adults. Lyle Knowles has written that the police student is a goal-oriented problem solver who wants to know how to get from here to there; he wants to learn through problem-solving activities that allow information gathering, organization, and solution discovery in a meaningful fashion. This is similar to all adult learners, according to adult educators. For instance, Gibb writes: Learning must be problem-centered; learning must be experience-centered; experience must be meaningful to the learner; the learner must be free to look at the experience; the goals must be set and the search organized by the learner; the learner must have feedback about progress toward goals.

Lyle Knowles wrote that police like a structured approach because of their training and work experience. They would not respond too favorably to an open, unstructured, non-directive course. This is not in keeping with the flexible approach used by most adult educators. Malcolm Knowles has written that the educative environment practices a democratic philosophy. It allows freedom of expression and availability of information; it has participation in decision making; it has respect for personality; and it has mutuality of responsibility in defining goals, planning and conducting activities, and evaluation. Obviously, Knowles and Knowles are not similar.
This writer feels free to comment, based on his experience teaching police and fire students. L. Knowles is accurate in stating police prefer structure and authority because they are accustomed to it, but that does not mean it is the correct approach in educating them. Most do respond to an open, less strictly structured course after they become accustomed to it. No instructor has an unstructured course. All provide some direction. If they did not, police and fire fighters would make their own direction - away from the class. Some direction and structure is needed for curriculum planning and teaching of police and fire fighters.

M. Knowles is correct in much of his philosophy. Police and fire students appreciate being regarded as adults and respond favorably to adult education practices such as group discussion, sharing responsibility in teaching, participation in decision making, freedom of expression, and mutual evaluation. Adults, including police and fire students, cannot be treated as children. This is important for any curriculum planner or instructor of adults to keep in mind. Pine and Horne wrote that learning is facilitated in an atmosphere which encourages people to be active, in which difference is good and desirable, which tolerates ambiguity, in which people are encouraged to trust in themselves, in which people feel
they are respected, in which people feel they are accepted.\textsuperscript{12}

Adults themselves are useful in planning activities. This has been advocated by adult educators. Dutton says client involvement is needed because adults learn best when they have strong desire to learn, have clear goals, put forth effort to learn, and receive satisfaction from what they learn.\textsuperscript{13} At Columbus Technical Institute, police and fire representatives sit on the advisory committees of their technologies. They helped plan the original curriculum and take part in revisions of that curriculum. This is common at Columbus Technical Institute and is a practice found in all technological specialties. Curriculum planners should include representatives of the work group for which they are planning programs in establishment and revision of these programs.

Once the program is established, conditions for optimum learning should be examined. Physical facilities for adults, rather than children, are essential. Following attainment of these, other conditions become paramount.

M. Knowles has described what he terms "superior conditions of learning and principles of teaching."\textsuperscript{14} These conditions are: The learners feel a need to learn; the learning environment is characterized by physical comfort, mutual trust and respect, mutual helpfulness, freedom of expression, and acceptance of differences; the learners
perceive the goals of a learning experience to be their goals; the learners accept a share of the responsibility for planning and operating a learning experience, and therefore have a feeling of commitment toward it; the learners participate actively in the learning process; the learning process is related to and makes use of the experience of the learners; the learners have a sense of progress toward their goals. Knowles then lists sixteen principles of teaching which help bring about these conditions. Harry Miller states six conditions for learning: The student must be adequately motivated to change behavior; the student must be aware of the inadequacy of his present behavior; the student must have a clear picture of the behavior which he is required to adopt; the student must have opportunities to practice the appropriate behavior; the student must get reinforcement of the correct behavior; and the student must have available a sequence of appropriate materials. Conditions advocated by these two men can be made applicable to adult programs. They are not peculiar to any one program.

Summary

Certain themes occur throughout the writings of adult educators. These generally include reference to the stability of adult perceptions, the fact that adults are independent and do not wish to be guided or lead, adults
have rich and varied experiences that can be used in the classrooms, adults are highly motivated, and adult interest is mainly centered in problem solving. These should be kept in mind for any adult educator working with any group of adults. This researcher has worked with police and fire fighters and found much of his learning concerning adult education concepts and principles was applicable to these professions. It is assumed that other occupational groups of adults have much the same basic psychological and sociological makeup, and so many of the findings of adult education are applicable to them also.

For planning a program, obtain the services of representatives of the occupational group for the advisory committee. Do not limit the committee to these persons only but include them with other representatives of the community. Their experience is useful for program planning and recruiting students. It is recommended that some of the conditions of learning set forth by Gibb, Miller, Dutton, Pine and Horne, and others be used in the teaching process. Have clear goals but involve the learners in them. Involve the students. Allow much of the work to be problem centered. Give the students experience in problem solving activities and decision making opportunities. Depending on the course, this may involve group discussion, field trips, reports, agency visits, role playing, and
other techniques of instruction. Provide for different views to be expressed. Relate the course to the experiences of the learners. Keep the students informed on their progress. Feedback is important for everyone. Include students in the evaluation procedure of the course, of the instructor, and of themselves. Show respect of and acceptance of the adult students.

**Recommendations for Future Research**

Knowledge is never complete and research is never finished. This study is concluded, but it has added only a small amount to the body of knowledge. Other studies need to be conducted. The text of this study raised some questions. These provide some suggestions for future research. Other possibilities occur while reviewing the data. Some potential research is posed in this section.

A study to determine if education really contributes to higher scores on promotional examinations is in order. Are high scores the results of education, or are they just one more indicator of the same qualities that attracted the persons to education in the first place? This would require in-depth gathering of personal background data on both police students and fire students, and on police and fire non-students, and then comparing these data with performance on promotional examinations.
A study relating personal data to attitudes toward higher education is recommended. This would involve collecting a greater amount of data than was gathered for this study, but such a project might be practical. The study could attempt to identify those factors that influence or are related to attitudes and behavior. Such a study could reveal the impact of personal factors on 1) attitudes held by respondents, and 2) behavior of these respondents as they choose to return or not to college level coursework.

A follow-up study concerning effectiveness of leaders before and after education is in order. This would have to be a longitudinal study. Criteria regarding effective skills would have to be established for measurement. Some items from the scales used in this study could provide a beginning. Educated leaders could be compared with a control group of non-educated leaders.

A follow-up study of job improvement after education is suggested. This is a before and after type study. Some items from the scales could provide a beginning. Other criteria could be developed. Control group of non-educated police and fire fighters could be studied for comparison.

A follow-up of improving relations with other segments of society is recommended. How much impact does education really have on improving relations? A before and after study could be useful for this purpose. A
control group of non-educated officers could furnish valuable data for comparison. This may be more sociological than educational in scope.

A study assessing the value of internal job rewards is suggested. This may be combined with assessing social skills. Are police and fire fighters content a year after their education? Are they satisfied? Do they still feel education has intrinsic rewards? Has dissatisfaction set in? This is a longitudinal approach and may be conducted on a before and after basis. This appears to be more of a social psychological topic than an educational one.

A survey of supervisors to really determine their views of education is in order. This involves use of an attitude questionnaire. If the attitudes are favorable, then perhaps a program can be developed to attract supervisors and their subordinates to school. If the attitudes prove unfavorable, then perhaps attitude change programs can be created. This study seems oriented to social psychology.

A follow-up study to assess whether actions were improved as a result of education is suggested. Were attitudes really translated into action? Did society benefit because of this? This could require sample and control group, using education as an independent variable. A before and after study might be fruitful.
A study to determine need for educational programs for the less educated older police and fire fighters is suggested. If needs exist, what types of programs could be established for these older persons? How could they be motivated to return to school? This involves some survey work, needs assessment, and program planning.

A study comparing M. Knowles or Miller's "Conditions of Learning" with conditions actually existing at a facility such as Columbus Technical Institute should be fruitful. This could include use of the items on the Educative Environment Scale used in this study.

A study to determine cause for similarity in teacher-figure image between students and non-students is suggested. This would require some background data gathering and some attitude survey.

Finally, if a cooperative program is arranged between Columbus Technical Institute staff and personnel of police and fire departments for recruiting, a follow-up should be initiated for evaluation of that program. Is it effective in recruiting? Is the program mutually satisfying to all groups involved? Does it facilitate the education process? Did relations improve between the Institute and the departments? Did attitudes of supervisors and subordinates improve toward education? This would entail a series of interviews with supervisors, line ranks, school staff, and recruits. It would also involve questionnaire data
gathering, and analysis of empirical data. Some participant observation could also be included. Of all the proposed studies set forth, this last one appeals most to this researcher. Some day, perhaps, he will be able to conduct this investigation.
FOOTNOTES


6. Ralph Spence, "Education for Our Third Century: Are We Ready?" *Adult Leadership* 25 (9), May, 1977, p. 258.

7. Ibid., p. 260.


APPENDIX A

ORIGINAL QUESTIONNAIRE

The original scale was coded from one to five for each response, with the highest code being given "SA" on all items except the following: 16, 19, 21, 27, 41, 63, 76, 82, and 84. For these items, "SD" was given the highest value of five. From this scale, the internal consistency test revealed 100 significant items. These 100 items were placed on the revised instrument given the "PS", "FS", "S", "PNS", and "FNS" categories used in this study. The thirty items deleted from the revised instrument were: 1, 10, 18, 19, 21, 23, 27, 28, 29, 38, 39, 42, 43, 53, 58, 63, 68, 75, 76, 82, 83, 84, 87, 93, 97, 98, 105, 109, 120, and 128. They were dropped because the critical ratio values that were derived for them during the analysis were too low to be considered significant. Tables 38 and 39 show the critical ratio values for each item. The tables also reveal the correlation values for the original instrument. The results are shown in two tables because the analysis used only 65 items per computer run.
DIRECTIONS

DO NOT SIGN YOUR NAME TO THIS QUESTIONNAIRE.
THIS IS A QUESTIONNAIRE DESIGNED TO MEASURE YOUR ATTITUDES TOWARD HIGHER EDUCATION. BY HIGHER EDUCATION IS MEANT POST-HIGH SCHOOL EDUCATION IN A FORMAL SETTING WITH INSTRUCTORS AND COURSEWORK. IT DOES NOT MEAN RECRUIT TRAINING OR ON-THE-JOB TRAINING IN A WORK SETTING. THERE ARE NO RIGHT OR WRONG ANSWERS. THE RIGHT ANSWER FOR YOU IS HOW YOU FEEL ABOUT EACH STATEMENT. YOU HAVE A CHOICE OF FIVE RESPONSES FOR EACH ITEM. CHOOSE ONE OF THE FIVE. THE CHOICES ARE "STRONGLY AGREE" WHICH WILL BE INITIALLED "SA" ON THE QUESTIONNAIRE, "AGREE" WHICH WILL BE LABELED "A", "UNDECIDED" WHICH WILL BE LABELED "U", "DISAGREE" WHICH WILL BE SHOWN AS "D", AND "STRONGLY DISAGREE" WHICH WILL BE IDENTIFIED AS "SD". PLACE AN "X" MARK IN THE APPROPRIATE COLUMN FOR EACH ITEM, THUS INDICATING YOUR ATTITUDES ABOUT THE STATEMENT. THEN, COMPLETE THE BACKGROUND DATA ON THE LAST PAGE. YOUR COOPERATION AND HONEST ANSWERS ARE APPRECIATED. THANK YOU.
1. Education of supervisors will help them develop leadership.

2. The educative environment has respect for individual personality.

3. Higher education will develop my leadership abilities.

4. The educative environment allows participation in decision-making.

5. I believe I will be a better functioning social person because of higher education than I would be otherwise.

6. The educative environment has mutuality of responsibility in defining goals, planning and coordinating activities, and evaluation.

7. Education will help my social life.

8. Education of supervisors will help them maintain discipline.

9. Education of supervisors will help them in guiding and supervising.

10. Higher education will result in higher salary for me, immediately.

11. Higher education will improve race and minority relations.

12. My employers feel that they have a responsibility to see that their workers are educated.

13. I believe I will be better able to get along with people because of higher education than I would be otherwise.

14. Education will help raise my job to the level of profession.
15. **There is freedom of expression in education.**

16. **My supervisors are envious and hostile to educated workers.**

17. **Education identifies occupational problem areas.**

18. **My education will increase public support and approval of my job.**

19. **I believe educated people are not needed in my job area.**

20. **Education helps me apply my new knowledge immediately.**

21. **The teacher plays the part of authority figure.**

22. **Continuing education will help me become aware of job changes that have recently occurred.**

23. **Education helps prevent and fight fires.**

24. **Higher education can improve press relations.**

25. **The teacher plays the part of encourager.**

26. **I believe I will be a better all-around person because of higher education than I would be otherwise.**

27. **My supervisors would discourage continuing education.**

28. **Anyone employed in my job area should be required to have the four-year college degree.**

29. **Education should be continued on a life-long basis.**

30. **Higher education can improve community relations.
31. Education will help my relationships with co-workers.

32. The teacher's objective is to help people grow in their ability to learn.

33. Higher education can improve police relations with motorists.

34. The educative environment practices a democratic philosophy.

35. Salary rates in a job should be based on extent of education (the higher the education means the higher the pay).

36. Education contains a spirit of joint inquiry between teacher and student.

37. Education will assist me in promotion tests.

38. Higher education can help firemen prevent fires.

39. Tuition should be reimbursed for coursework taken.

40. Education helps develop flexibility.

41. My supervisors resent the educated employee.

42. Higher education can assist policemen in handling traffic problems.

43. I would like to serve on school faculty committees or administrative committees.

44. The teacher plays the part of consultant.

45. Higher education can increase status and prestige of my job specialty.
46. Education helps me become a self-directing person.
47. Education helps discover persons with hidden talents and abilities.
48. Higher education can improve public relations.
49. Education will help me learn about and understand other people.
50. Education will help my performance on the job.
51. Education will help me perform better after I get promoted.
52. I believe my employers have a responsibility to see that the workers in their agency are educated.
53. It will be necessary for me to be enrolled in higher education at frequent intervals during my career.
54. Education of supervisors will help them keep high morale.
55. Education results in a reduction of discipline problems on the job.
56. Education can improve relations between police and young people.
57. Rewards, such as salary increases, should be given for coursework.
58. My friends approve of my getting educated.
59. Continuing education will help refresh my memory on things I have forgotten.
60. Education reduces turnover on the job.
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<tbody>
<tr>
<td>61.</td>
<td>The educative environment allows freedom of expression and availability of information.</td>
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<tr>
<td>62.</td>
<td>The teacher's objective is to help people grow toward mature selves.</td>
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<td>63.</td>
<td>Education overtrains for my type of work.</td>
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<tr>
<td>64.</td>
<td>Higher education will result in my getting promoted.</td>
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<td>65.</td>
<td>Education of supervisors will help them in organizing.</td>
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<tr>
<td>66.</td>
<td>Supervisors in my job should be required to have the two-year associate degree.</td>
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<tr>
<td>67.</td>
<td>I believe my employers are responsible to encourage, promote, and pay for continuous education for their workers.</td>
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<td>68.</td>
<td>Students should have some decision-making powers in the school setting.</td>
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<tr>
<td>69.</td>
<td>Higher education can help policemen in combatting crimes.</td>
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<td>70.</td>
<td>Higher education can improve police relations with parolees and probationers.</td>
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<tr>
<td>71.</td>
<td>Higher education uses a wide variety of teaching methods for instruction.</td>
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<tr>
<td>72.</td>
<td>Education develops concern for safety and welfare of others.</td>
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<td>73.</td>
<td>Higher education can assist in cooperative working with other departments and agencies.</td>
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<td>74.</td>
<td>Education helps detect weaknesses in students.</td>
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</table>
75. Students should serve on school faculty committees and administrative committees.

76. The teacher plays the part of disciplinarian.

77. Education of supervisors will help them in motivating men.

78. Education of supervisors will help them in planning policies and programs.

79. Education develops loyalty to the job.

80. Education develops a concern for well-being of others.

81. Educated police and firemen are more likely to be democratic than authoritarian.

82. The teacher plays the part of judge.

83. Students should have some voice in planning courses and teaching methods.

84. My employers believe educated people are not needed in my job area.

85. Colleagues (co-workers) approve of fellow workers getting educated.

86. Education will enable me to know more about my job than I do now.

87. Education helps prevent crime and disorder.

88. Higher education will develop understanding of other groups.

89. Teachers listen to what students say.
90. Education of supervisors will help them control and co-ordinate.

91. Supervisors in my job area should be required to have the four-year college degree.

92. Education of supervisors will help them bring out the best efforts of others.

93. My employers would agree to encouraging, promoting, and paying for continuing education for workers.

94. Education helps resolve occupational problem areas.

95. The teacher plays the part of helper.

96. Uneducated police and firemen are more likely to be authoritarian than democratic.

97. I would like some decision-making power in education.

98. Anyone employed in my job should be required to have the two-year associate degree.

99. Higher education encourages full and free participation in the school setting.

100. Education of supervisors will help them in manning positions.

101. Education will help me communicate with others about my job.

102. Higher education provides a stimulating environment.

103. Higher education can help overcome language barriers between foreign and native groups.
104. Education imparts knowledge and ability to perform better work.

105. Education helps develop ability to think.

106. Education will help my relationships with superiors (supervisors).

107. The teacher plays the part of guide.

108. Education develops high morale and enthusiasm among students.

109. The teacher plays the part of transmitter of knowledge.

110. Higher education is definitely important for my job.

111. Education makes procedure more standardized and uniform in my job.

112. Education develops a concern for self-improvement.

113. The teacher plays the part of resource person.

114. Higher education will result in higher salary for me, eventually.

115. Education helps me develop a reservoir of experience.

116. Higher education can help firemen extinguish fires.

117. Education helps develop ability to solve problems.

118. Rewards, such as promotion points, should be given for coursework.

119. Higher education can help policemen in handling of crowds.
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<td>121</td>
<td>Education helps strengthen weaknesses.</td>
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<tr>
<td>122</td>
<td>Higher educated police and firemen are more democratic than uneducated police and firemen.</td>
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<tr>
<td>123</td>
<td>Higher education can improve relations between old and young people.</td>
</tr>
<tr>
<td>124</td>
<td>Superiors (supervisors) approve of their workers getting educated.</td>
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<tr>
<td>125</td>
<td>Higher education can improve police relations with courts.</td>
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<td>126</td>
<td>Education will help make changes in the job structure.</td>
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<td>Higher education will reduce tensions between groups in society.</td>
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<td>Education will help me develop basic values.</td>
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<td>Education of supervisors will help them in delegating authority.</td>
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<td>130</td>
<td>Education will help me in working with other people.</td>
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BACKGROUND DATA

1) Age____________  2) Technology________________________

3) Are you employed now? Yes___  No____
   If so, specify type of work________________________________
   If employed, what is the employing city_____________________

4) Where were you raised? Franklin County_____
   Another Ohio County_____
   Another State_____

5) Size of locality where raised: Farm or Rural____
   Small Town_____
   Mid-Size City_____
   Large City_____

6) Years of Formal Education: Less than high school____
   High School graduate____
   Less than one year post-high school____
   One year post-high school____
   Two years post-high school____
   Three years post-high school____
   Four years post-high school____
   College graduate_____

7) Are you on any form of subsidy or tuition reimbursement?
   Yes_____  No_____
   If yes, what is it?_________________________________________
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**TABLE 38**

CRITICAL RATIOS AND CORRELATION FOR ITEMS 1-65

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**RSPLIT .7756   RCORR .8736**

Degrees Freedom 120  CR = 2.62 to be significant at .01 level. See Herbert Arkin and Raymond R. Colton, Tables For Statisticians, N. Y., Barnes & Noble, 1950, "Table 12. Table of t," p. 116.
### TABLE 39
CRITICAL RATIOS AND CORRELATIONS FOR ITEMS 66-130

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**RSPLIT .8385  RCORR .9122**

Degrees Freedom 120

APPENDIX B

REVISED QUESTIONNAIRE

The revised questionnaire was given "PS", "FS", "S", "PNS", and "FNS". The only point of difference occurred in the Background Data request. "Background Data Sheet 1" was given to "PS", "FS", and "S". This form contained questions for persons enrolled in school. "Background Data Sheet 2" did not contain these questions and was given to "PNS" and "FNS". This instrument was coded one to five on each item, with the highest value of five going to "SA" on each item except 72 and 94. For these two items, "SD" was given the highest value.
Directions

Do not sign your name to this questionnaire. This is a questionnaire designed to measure your attitudes toward higher education. By higher education is meant post-high school education in a formal setting with instructors and coursework. It does not mean recruit training or on-the-job training in a work setting. There are no right or wrong answers. The right answer for you is how you feel about each statement. You have a choice of five responses for each item. They are:

- Strongly Agree = SA
- Agree = A
- Undecided = U
- Disagree = D
- Strongly Disagree = SD

Circle your response to each item. If you strongly agree with the statement, circle SA; if you agree, circle A; if you are undecided, circle U; if you disagree, circle D; if you strongly disagree, circle SD. When you have finished circling responses to all items, complete the background data on the last page. Your cooperation and honest answers are appreciated. Thank you.
1. Higher education can improve relations between old and young people.

2. Education of supervisors will help them in motivating men.

3. Education develops high morale and enthusiasm among students.

4. Education helps develop ability to solve problems.

5. Education will help my social life.

6. Education results in a reduction of discipline problems on the job.

7. Education helps me apply my new knowledge immediately.

8. Education contains a spirit of joint inquiry between teacher and student.

9. Educated police and firemen are more likely to be democratic than authoritarian.

10. Education develops a concern for well-being of others.

11. I believe I will be better able to get along with people because of higher education than I would be otherwise.

12. Higher education can increase status and prestige of my job specialty.

13. Superiors (supervisors) approve of their workers getting educated.

14. Higher education will develop my leadership abilities.

15. Education of supervisors will help them in guiding and supervising.

16. Higher education can improve police relations with motorists.
SA A U D SD 17. The educative environment has mutual-
ity of responsibility in defining
goals, planning and coordinating
activities, and evaluation.

SA A U D SD 18. There is freedom of expression in
education.

SA A U D SD 19. Education of supervisors will help
them maintain discipline.

SA A U D SD 20. The educative environment practices a
democratic philosophy.

SA A U D SD 21. The educative environment has respect
for individual personality.

SA A U D SD 22. The teacher's objective is to help
people grow in their ability to learn.

SA A U D SD 23. Education identifies occupational
problem areas.

SA A U D SD 24. Higher education can improve community
relations.

SA A U D SD 25. Teachers listen to what students say.

SA A U D SD 26. Higher education can help policemen
in combatting crimes.

SA A U D SD 27. Education develops loyalty to the job.

SA A U D SD 28. Higher education provides a stimulat-
ing environment.

SA A U D SD 29. The educative environment allows
freedom of expression and availabil-
ity of information.

SA A U D SD 30. Education helps me develop a reservoir
of experience.

SA A U D SD 31. I believe my employers are respon-
sible to encourage, promote, and pay
for continuous education for their
workers.

SA A U D SD 32. Education of supervisors will help
them keep high morale.
33. Higher education can help overcome language barriers between foreign and native groups.

34. Higher education can help policemen in handling of crowds.

35. Salary rates in a job should be based on extent of education (the higher the education means the higher the pay).

36. Higher education is definitely important for my job.

37. Higher education will develop understanding of other groups.

38. Supervisors in my job area should be required to have the four-year college degree.

39. Uneducated police and firemen are more likely to be authoritarian than democratic.

40. Higher education uses a wide variety of teaching methods for instruction.

41. Higher education can improve press relations.

42. Education will assist me in promotion tests.

43. Education develops concern for safety and welfare of others.

44. Rewards, such as promotion points, should be given for coursework.

45. Higher education encourages full and free participation in the school setting.

46. Rewards, such as salary increases, should be given for coursework.

47. Higher education will reduce tensions between groups in society.
Education of supervisors will help them bring out the best efforts of others.

I believe I will be a better all-around person because of higher education than I would be otherwise.

Education of supervisors will help them in organizing.

Education helps detect weaknesses in students.

Education will enable me to know more about my job than I do now.

Colleagues (co-workers) approve of fellow workers getting educated.

The teacher's objective is to help people grow toward mature selves.

Education of supervisors will help them control and co-ordinate.

Education helps resolve occupational problem areas.

Education helps strengthen weaknesses.

Education of supervisors will help them in delegating authority.

Education imparts knowledge and ability to perform better work.

Higher educated police and firemen are more democratic than uneducated police and firemen.

Higher education can help firemen extinguish fires.

I believe my employers have a responsibility to see that the workers in their agency are educated.

Supervisors in my job should be required to have the two-year associate degree.
SA A U D SD 64. The teacher plays the part of encourager.

SA A U D SD 65. Education will help my relationships with superiors (supervisors).

SA A U D SD 66. Higher education can improve police relations with parolees and probationers.

SA A U D SD 67. Higher education can improve police relations with courts.

SA A U D SD 68. The educative environment allows participation in decision-making.

SA A U D SD 69. Higher education can improve public relations.

SA A U D SD 70. Continuing education will help me become aware of job changes that have recently occurred.

SA A U D SD 71. Education will help me perform better after I get promoted.

SA A U D SD 72. My supervisors are envious and hostile to educated workers.

SA A U D SD 73. Education reduces turnover on the job.

SA A U D SD 74. Education develops a concern for self-improvement.

SA A U D SD 75. Higher education can assist in cooperative working with other departments and agencies.

SA A U D SD 76. Education helps discover persons with hidden talents and abilities.

SA A U D SD 77. The teacher plays the part of guide.

SA A U D SD 78. Education will help my relationships with co-workers.

SA A U D SD 79. Education will help me in working with other people.

SA A U D SD 80. Higher education will improve race and minority relations.
SA A U D SD 81. The teacher plays the part of resource person.

SA A U D SD 82. Higher education will result in higher salary for me, eventually.

SA A U D SD 83. The teacher plays the part of helper.

SA A U D SD 84. Education of supervisors will help them in planning policies and programs.

SA A U D SD 85. Education helps me become a self-directing person.

SA A U D SD 86. Education will help me communicate with others about my job.

SA A U D SD 87. Education of supervisors will help them in manning positions.

SA A U D SD 88. I believe I will be a better functioning social person because of higher education than I would be otherwise.

SA A U D SD 89. Education makes procedure more standardized and uniform in my job.

SA A U D SD 90. Education will help me learn about and understand other people.

SA A U D SD 91. Education can improve relations between police and young people.

SA A U D SD 92. The teacher plays the part of consultant.

SA A U D SD 93. Education will help make changes in the job structure.

SA A U D SD 94. My supervisors resent the educated employee.

SA A U D SD 95. Continuing education will help refresh my memory on things I have forgotten.

SA A U D SD 96. My employers feel that they have a responsibility to see that their workers are educated.
97. Education will help raise my job to the level of profession.

98. Higher education will result in my getting promoted.

99. Education helps develop flexibility.

100. Education will help my performance on the job.
BACKGROUND DATA SHEET 1

1) Age__________ 2) Technology__________________

3) Are you employed now? Yes_______ No_______
   If so, specify type of work____________________
   If employed, what is the employing city__________
   If employed, how many years have you held this job____

4) Where were you raised? Franklin County_____
   Another Ohio County_____
   Another State__________

5) Size of locality where raised: Farm or Rural_____
   Small Town__________
   Mid-Size City________
   Large City__________

6) Years of Formal Education: Less than high school_____
   High school graduate_____
   Less than one year post-high school_____
   One year post-high school_________
   Two years post-high school_________
   Three years post-high school________
   Four years post-high school_________
   College graduate________

7) Are you on any form of subsidy or tuition reimbursement?
   Yes_______ No_______
   If yes, what is it?________________________________
1) Age__________

2) Occupation: Police Fire (Circle One)

3) How many years have you been employed in present job?________

4) Where were you raised? Franklin County________
   Another Ohio County______
   Another State________

5) Size of locality where raised: Farm or Rural______
   Small Town________
   Mid-size City_______
   Large City________

6) Years of Formal Education: Less than high school______
   High school graduate______
   Less than one year post-high school______
   One year post-high school_____
   Two years post-high school_____
   Three years post-high school_____
   Four years post-high school_____
   College Graduate________
APPENDIX C

THE TEN SCALES

The ten scales are derived from the revised questionnaire. The statements used on each scale are shown. The number following the statement refers to the item number of that statement as it appeared on the questionnaire.

Each scale reflected a different dimension of attitudes toward education. Scale A, Supervisor-Leadership Improvement, contained twelve items related to improvement of the supervisory role through education. These items pertained to the value of education as a help to supervisors in performing their duties.

Scale B, Supervisors Views Toward Education, contained six items referring to views held by supervisors concerning education. These items attempted to measure the respondents beliefs about views held by supervisors regarding education.

Scale C, External Job Rewards, contained eight items related to matters of salary and promotion. These referred to beliefs that education would assist in status, salary, promotion, and professional boosts.
Scale D, Internal Job Rewards, contained eleven items on matters such as turnover and discipline problem reduction. These included reference to intangible areas of occupations like loyalty, peer approval, and cooperative working with other departments and agencies.

Scale E, Job Improvement, contained nine items related to personal improvement which would better job performance. These included references to working with people, application of knowledge, and communication.

Scale F, Social Improvement, contained nine items pertaining to improvement that would better social life. These items included references to improving social life, becoming a better functioning social person, and understanding other people.

Scale G, Improving Relations, consisted of nine items directed at improvement of relations with other segments of society. These included public relations, community relations, court relations, and race relations.

Scale H, Societal Benefits, contained fourteen items pertaining to benefits to society of education. These included developing a concern for well-being of others, becoming more democratic and flexible, and helping to combat crime and extinguish fires.

Scale I, Educative Environment, contained fourteen items pertaining to views of educational environment as held by the respondents. These included reference to
participation in decision-making, freedom of expression in the school setting, and practice of a democratic philosophy in the educative environment.

Scale J, Teacher-Figure, consisted of eight items referring to impressions of the teacher. These measured how the respondents perceived teachers: as guides, helpers, consultants, listeners.
SCALE A: SUPERVISOR-LEADERSHIP IMPROVEMENT

Education of supervisors will help them in motivating men. (2)

Education of supervisors will help them in guiding and supervising. (15)

Education of supervisors will help them maintain discipline. (19)

Education of supervisors will help them keep high morale. (32)

Supervisors in my job area should be required to have the four-year college degree. (38)

Education of supervisors will help them bring out the best efforts of others. (48)

Education of supervisors will help them in organizing. (50)

Education of supervisors will help them control and coordinate. (55)

Education of supervisors will help them in delegating authority. (58)

Supervisors in my job should be required to have the two-year associate degree. (63)

Education of supervisors will help them in planning policies and programs. (84)

Education of supervisors will help them in manning positions. (87)

SCALE B: SUPERVISORS VIEWS TOWARD EDUCATION

Superiors (supervisors) approve of their workers getting educated. (13)

I believe my employers are responsible to encourage, promote, and pay for continuous education for their workers. (31)

I believe my employers have a responsibility to see that the workers in their agency are educated. (62)
My supervisors are envious and hostile to educated workers. (72)

My supervisors resent the educated employee. (94)

My employers feel that they have a responsibility to see that their workers are educated. (96)

SCALE C: EXTERNAL JOB REWARDS

Higher education can increase status and prestige of my job specialty. (12)

Salary rates in a job should be based on extent of education (the higher the education means the higher the pay). (35)

Education will assist me in promotion tests. (42)

Rewards, such as promotion points, should be given for coursework. (44)

Rewards, such as salary increases, should be given for coursework. (46)

Higher education will result in higher salary for me, eventually. (82)

Education will help raise my job to the level of profession. (97)

Higher education will result in my getting promoted. (98)

SCALE D: INTERNAL JOB REWARDS

Education results in a reduction of discipline problems on the job. (6)

Education identifies occupational problem areas. (23)

Education develops loyalty to the job. (27)

Higher education is definitely important for my job. (36)

Colleagues (co-workers) approve of fellow workers getting educated. (53)

Education helps resolve occupational problem areas. (56)
Education imparts knowledge and ability to perform better work. (59)

Education reduces turnover on the job. (73)

Higher education can assist in cooperative working with other departments and agencies. (75)

Education makes procedure more standardized and uniform in my job. (89)

Education will help make changes in the job structure. (93)

**SCALE E: JOB IMPROVEMENT**

Education helps me apply my new knowledge immediately. (7)

Education will enable me to know more about my job than I do now. (52)

Education will help my relationships with superiors (supervisors). (65)

Continuing education will help me become aware of job changes that have recently occurred. (70)

Education will help me perform better after I get promoted. (71)

Education will help my relationships with co-workers. (78)

Education will help me in working with other people. (79)

Education will help me communicate with others about my job. (86)

Education will help my performance on the job. (100)

**SCALE F: SOCIAL IMPROVEMENT**

Education will help my social life. (5)

I believe I will be better able to get along with people because of higher education than I would be otherwise. (11)

Higher education will develop my leadership abilities. (14)

Education helps me develop a reservoir of experience. (30)
I believe I will be a better all-around person because of higher education than I would be otherwise. (49)

Education helps me become a self-directing person. (85)

I believe I will be a better functioning social person because of higher education than I would be otherwise. (88)

Education will help me learn about and understand other people. (90)

Continuing education will help refresh my memory on things I have forgotten. (95)

SCALE G: IMPROVING RELATIONS

Higher education can improve relations between old and young people. (1)

Higher education can improve police relations with motorists. (16)

Higher education can improve community relations. (24)

Higher education can improve press relations. (41)

Higher education can improve police relations with parolees and probationers. (66)

Higher education can improve police relations with courts. (67)

Higher education can improve public relations. (69)

Higher education will improve race and minority relations. (80)

Education can improve relations between police and young people. (91)

SCALE H: SOCIETAL BENEFITS

Education helps develop ability to solve problems. (4)

Educated police and firemen are more likely to be democratic than authoritarian. (9)

Education develops a concern for well-being of others. (10)
Higher education can help policemen in combatting crimes. (26)

Higher education can help overcome language barriers between foreign and native groups. (33)

Higher education can help policemen in handling of crowds. (34)

Higher education will develop understanding of other groups. (37)

Uneducated police and firemen are more likely to be authoritarian than democratic. (39)

Education develops concern for safety and welfare of others. (43)

Higher education will reduce tensions between groups in society. (47)

Higher educated police and firemen are more democratic than uneducated police and firemen. (60)

Higher education can help firemen extinguish fires. (61)

Education develops a concern for self-improvement. (74)

Education helps develop flexibility. (99)

SCALE I: EDUCATIVE ENVIRONMENT

Education develops high morale and enthusiasm among students. (3)

Education contains a spirit of joint inquiry between teacher and student. (8)

The educative environment has mutuality of responsibility in defining goals, planning and coordinating activities, and evaluation. (17)

There is freedom of expression in education. (18)

The educative environment practices a democratic philosophy. (20)

The educative environment has respect for individual personality. (21)
Higher education provides a stimulating environment. (28)

The educative environment allows freedom of expression and availability of information. (29)

Higher education uses a wide variety of teaching methods for instruction. (40)

Higher education encourages full and free participation in the school setting. (45)

Education helps detect weaknesses in students. (51)

Education helps strengthen weaknesses. (57)

The educative environment allows participation in decision-making. (68)

Education helps discover persons with hidden talents and abilities. (76)

**SCALE J: TEACHER-Figure**

The teacher's objective is to help people grow in their ability to learn. (22)

Teachers listen to what students say. (25)

The teacher's objective is to help people grow toward mature selves. (54)

The teacher plays the part of encourager. (64)

The teacher plays the part of guide. (77)

The teacher plays the part of resource person. (81)

The teacher plays the part of helper. (83)

The teacher plays the part of consultant. (92)
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