College Education and Police Officer Performance: A Critical Assessment

Fall 1982

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COLLEGE EDUCATION AND POLICE OFFICER PERFORMANCE: A CRITICAL ASSESSMENT

BY

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B.A., University of Central Florida, 1976

THESIS

Submitted in partial fulfillment of the requirements for the Master of Science degree in Industrial/Organizational Psychology in the Graduate Studies Program of the College of Arts and Sciences University of Central Florida Orlando, Florida

Fall Term 1982
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Special gratitude and appreciation goes to my wife and parents for the support they have provided throughout the years.
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INTRODUCTION

Selection and promotional requirements used by law enforcement agencies have traditionally been based upon a relatively broad and non-standard framework. Each jurisdiction has historically been responsible for establishing its own criteria for the selection and promotion of its personnel.

Since the passage of the Equal Opportunity Act of 1972, which amended the 1964 Civil Rights Act, however, all selection and promotional requirements used by law enforcement agencies were mandated to meet a criterion of "job relatedness," as outlined in the Uniform Guidelines on Employee Selection Procedures. This "job relatedness" most often takes the form of content valid examinations where a specific tie-in between each item of knowledge tested and one or more work related behaviors has been demonstrated.

In recent years there has been a growing emphasis on the selection and promotion of police officers with varying levels of college education. Although each individual must still satisfy all of the job related requirements for the position, frequently some level of college education has constituted a prerequisite to obtaining employment and promotion (Roberg, 1978). This requirement has generally
evoked a critical response on the part of those for whom it is intended. The argument has been based upon the lack of supporting evidence that a specific relationship exists between a required level of college education and the requirements of the job. It is therefore the intent of this study to evaluate the "job relatedness" of varying levels of college education in order to determine whether or not a significant relationship exists between education and job performance and therefore justifying its existence as a law enforcement prerequisite.

As early as 1931, in a report issued by the Wickersham Commission, the need for college educated personnel to fill the police ranks has been emphasized (Bohigan, 1979).

In recent years there has been a renewed emphasis on the value of a college education in the nation's state, county and municipal police agencies. More and more police departments have made some level of college education prerequisite to obtaining employment and promotion. It has been pointed out that the necessity of a college education is due simply to the fact that police officers will need to stay abreast of the increasing educational level of the general public (Folley, 1967; Germann, 1957; Saunders, 1970). Additionally, it has been asserted that, "the quality of police service will not significantly improve until higher educational requirements are established for all personnel" (Task Force Report, 1967).
This renewed emphasis on higher educational requirements for police officers originates primarily from two federal commission reports addressing the status of law enforcement in the United States. The first report issued in 1967 by the President's Commission on Law Enforcement and Administration of Justice Task Force laid the ground work for the current push toward higher educational requirements for law enforcement officers. The report stated: "The ultimate aim of all police departments should be that all personnel with enforcement powers have baccalaureate degrees." This decision, according to the commission, was based upon the fact that:

"The failure to establish high professional standards in police service has been a costly one, both for the police and for society," "Existing selection requirements and procedures for the majority of departments... do not screen out the unfit... and failure to raise the selection requirements will result in a poorer quality police service."

The second and more extensive of the two reports was issued in 1973 by the National Advisory Commission on Criminal Justice Standards and Goals. The report outlined a set of guidelines for implementing educational requirements for future police recruits. It called for:

1) Every police agency should require immediately, as a condition of employment, the completion of at least year of education (30 semester units) at an accredited college or university. Otherwise, qualified police applicants who do not satisfy this
condition, but who earned a high school diploma or its equivalent, should be employed under a contract requiring completion of educational requirement within 3 years of initial employment.

2) Every police agency should no later than 1975, require as a condition of initial employment the completion of at least 2 years of education (60 semester units) at an accredited college or university.

3) Every police agency should no later than 1978, require as a condition of initial employment the completion of at least 3 years of education (90 semester units) at an accredited college or university.

4) Every police agency should no later than 1982, require as a condition of initial employment the completion of at least 4 years of education (120 semester units or a baccalaureate degree) at an accredited college or university.

Other government agencies have made similar recommendations. The Advisory Commission on Intergovernmental Relations recommended that at the earliest practical time state law mandate that no person be appointed to a law enforcement position unless he is "the holder of a bachelor's degree from an accredited institution."

These recommendations have served as a catalyst from which numerous studies, purporting a variety of suggested criteria and implications have spawned, all advocating the need for higher level educational requirements within the police profession.

A review of this literature generally finds, "the college environment produces less authoritarian, more innovative and resourceful individuals capable of dealing with
problems more flexibly and with less need for supervision" (Locke, Smith and Walker, 1968). College educated officers have been found to take less sick time, receive higher evaluations from superiors and tend to have better response times in calls for service (Baehr, Frommel and Furlon, 1968; Saunders, 1978; Witte, 1969). College graduates have been found to have higher completion rates of basic training programs than non-college graduates and, once on the job, college graduates have been found to have been involved in fewer disciplinary cases than non-graduates (Sanderson, 1977).

According to Wilson (1968),

"When all other factors are equal the university trained man is better qualified for police service than one who has graduated only from high school. He has had broader experience with people and new situations; his adaptability has been tested; he has had the opportunity to meet students of many different nationalities, cultural backgrounds, and racial characteristics. His studies will have given him a new perspective on the problems and aspirations common to all men, and he will have learned to some degree to withhold judgment and to restrain his actions and impulses in favor of calm consideration and analysis."

In California, where many departments began requiring college education for entry several years ago, police chiefs have had an opportunity to compare the long term performance of college and non-college educated officers. One California chief after making such a comparison wrote: "All
my college educated officers perform with lowered turnover rates, less derision by youth, and fewer disciplinary problems" (Buracker, 1977). In a study that compared the attitudes of freshman and senior police college students, it was found that senior police students differed from their freshman counterparts in that they proved to be more open-minded, less inclined toward punitive social attitudes and generally had a better self concept (Guller, 1972).

Until recently, however, few studies have examined the effect of college education upon a specifically defined set of police performance standards. In reviewing studies of selection procedures for police officers, covering the diversity of procedures used by civil service and police agencies, Heckman, Groner, Dunnette and Johnson (1972), observed that researchers have given little attention to job performance measures, particularly failing to call attention to the multi-dimensional nature of police work. The most probable justification for this is due to the fact that so little agreement exists as to what parameters constitute effective police performance.

In a 1972 study by Chaiken and Cohen, many of the inherent weaknesses apparent in the earlier studies were controlled through the use of a longitudinal study in which performance data collected over a period of eleven years on 1,608 police officers were evaluated. A variety of objective
performance indices, including career advancement, disciplinary action, age, education, awards, injury, sick time, civilian complaints and the use of firearms was examined.

Education at the time of employment was found to be significantly related to career advancement and disciplinary action. Subjects with one or more years of college were more likely to be promoted to sargeant, lieutenant and captain than officers with no college education. Officers with some level of college education at the time of initial employment were significantly less likely to receive civilian complaints than their counterparts who had no college education at the time of initial employment. When later education, or education subsequent to entry was examined, an effect was again found in relation to career advancement and disciplinary action. Education obtained after employment was positively related to advancement and negatively related to disciplinary action. College graduates were found to have a lower frequency of times sick and injury disapprovals than their non-college counterparts. Examining the use of firearms, this study showed that no college graduate had his firearm removed for any reason.

Additionally, since officers holding college degrees were good performers but did show a relatively high turnover rate, the authors recommended that an effort be made to retain them on the force and aid them in continuing their
education.

The study concluded by stating that "of the strongest predictors of later performance, education was a significant factor."

In another empirically oriented study, Cascio (1977) found that based upon a relevant and reliable criterion measure rooted in observable and quantifiable performance criteria, chances of superior police officer performance increased proportionately with the level of education obtained.

In this study 14 job relevant criteria were used ranging from number of injuries and preventable accidents to number of awards and commendations. Across all 14 factors, it was demonstrated that "higher levels of formal education tend to be associated with fewer injuries, fewer injuries by assault and battery, fewer disciplinary actions from accidents, fewer preventable accidents, fewer sick times per year, fewer physical force allegations, and so forth.

The general findings of this study are summarized graphically in Figure 1.
<table>
<thead>
<tr>
<th>Education Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.A. or better</td>
<td>73%</td>
</tr>
<tr>
<td>A.A. or better</td>
<td>65%</td>
</tr>
<tr>
<td>1-2 years of college or better</td>
<td>58%</td>
</tr>
<tr>
<td>High School or G.E.D. or better</td>
<td>50%</td>
</tr>
</tbody>
</table>

Figure 1. Chances in 100 of superior performance as a police officer

Similiarly, Finnigan (1976) found when comparing the relationship of college education to police performance in Baltimore, Maryland that "police agents," (a special group of police officers, all possessing baccalaureate degrees), were "consistently rated higher than police officers on performance criteria outlined in the Baltimore Police Departments' performance evaluation instrument" (p. 62). Data from this study also indicated that the college educated "agents" receive promotions at a significantly higher rate than police officers.

The perceived link between college education and performance as a police officer as demonstrated in the aforementioned studies has created a recognized need to attract and retain college educated officers and to provide assistance to those either desiring to obtain a college degree or in pursuing an advanced degree.

This need was recognized by the American Bar
"College graduates should be encouraged to apply for employment with police agencies. Individuals aspiring to careers in police agencies and those currently employed as police officers should be encouraged to advance their education at the college level. Communities should support further educational achievement on the part of police personnel by adopting such devices as educational incentive pay plans, and by gradually instituting requirements for the completion of specified periods of college work as a prerequisite for initial appointment and promotion." (Hoover, 1975). Bittner (1970) further exemplifies this line or reasoning in the following manner: "What the recruitment of college graduates will accomplish... is to impel the occupation in the direction of becoming a social mechanism functioning at the level of complexity, sophistication, and responsibility commensurate with the quality of the problems it is meant to meet."

The concept of providing some type of reward or incentive plan has been implemented in nearly every major police agency throughout the country. Incentive programs implemented to date have been of four types:

1) A percentage salary increment, i.e., an "x" percent annual salary bonus for those officers who have completed an academic degree, or "x" amount of dollars for each credit of college work completed.

2) A seniority salary increment, i.e., those police recruits who have completed a certain amount of college are given an annual salary equivalent to "x" amount of years of service.

3) Shorter time in rank before qualifying for promotion, i.e., police officers with a baccalaureate degree or some other increment of college education are eligible to take promotion examinations in a shorter period of time than others.
4) Special preference given for particular types of assignments, such as special investigative units, all offered as an incentive for increased higher education.

Another significant contribution toward providing incentives to higher education among police officers has been the Law Enforcement Education Program of the Law Enforcement Assistance Administration (Hoover, 1975). Since its inception in 1967, the L.E.A.A. has taken an active role in providing support for the move toward higher education among police officers. In 1968, with the formation of the L.E.E.P., previously scarce to non-existent federal funds were made available to both in-service and pre-service police personnel for the purpose of obtaining a college education (Hoover, 1975). In 1968, only 234 educational institutions in the United States offered law enforcement degrees of any nature. By 1975, largely due to L.E.E.P. funds, that number had risen to more than 1,065 participating institutions (King, 1976). In 1976, more than 100,000 students received L.E.E.P. assistance. Of this number more than 60,000 were sworn police officers (King, 1976).

Informed critics remain unconvinced, however, that college educated, largely middle class men necessarily make better police officers. They are of the opinion that despite higher, more competitive salaries and attractive in-
centive programs, well educated individuals will not find police careers attractive, at least within police organizations as they are presently constituted (Lefkowitz, 1977).

This concern, echoed in the previously cited study by Chaiken and Cohen (1972), addressing the high turnover rate among college educated officers, lends support to the need to further evaluate, not only the effectiveness of more competitive salaries and attractive incentive programs aimed at attracting and retaining college graduates, but more importantly, to further assess the relationship between college education and police officer performance upon which the incentive programs have been founded.

It may be that some college education experience will be desirable or even necessary for all police officers in the United States regardless of whether any beneficial consequences of that experience can be documented. That, however, may raise the issue of "fair employment" considerations insofar as that selection standards may not be demonstratably "job related" (Lefkowitz, 1977).

The issue of job relatedness or relevancy has become the major issue over which the controversy regarding higher level educational requirements for police has developed. Due in part to the multi-dimensional nature of the job and its performance standards few studies have successfully incorporated the use of a relevant and reliable criterion
measure when addressing the effect college education on performance.

Nor has this effect been adequately addressed in terms of the time the education is obtained. Although Cohen and Chaiken (1972), did address the effect of past employment education in relation to a number of performance factors, no attempt was made to specifically quantify what amount of job obtained education was necessary to exhibit a significant performance effect. For example, are there significant performance differences between those officers who obtained most or all of their education while employed as police officers and those who were educated to similar levels prior to employment? Further consideration of this topic directly addresses the question of police experience. How much of the previously cited literature purporting the value of college education can be attributed directly to experience on the part of those evaluated?

Many of the previously cited studies extolling the virtues of college education do so on the basis of either subjective (Guller, 1972) or objective performance criteria (Cascio, 1977; Chaiken and Cohen, 1972). These criteria, forming the basis of support for higher educational requirements, are susceptible to criterion contamination from a number of factors, not the least of which being police experience.
Reflecting this concern, Hudzik (1978), in a study entitled College Education for Police: Problems in Measuring Component and Extraneous Variables, states:

"existing research findings cannot be accepted as conclusive evidence that a college education should be a prerequisite to law enforcement employment. The lack of sufficient research controls in projects measuring the effects of college education result in our being unable to conclude which effects are attributable to college education. Does attending college for a year qualify a person as college educated? Does a two year associate in arts degree qualify, or is the term reserved for those who have at a minimum completed the four year degree?"

The following study represents an attempt to reconcile the relationship between the level of college education and police officer performance as stated earlier, and also to consider the role of police experience in evaluating the educational impact.

Hypotheses

For the purpose of this study the following hypotheses were examined:

1) Level of Education

Police officers possessing higher levels of college education (i.e., bachelor's degree vs. one year of college) will receive significantly higher performance evaluation ratings when compared to officers with lower levels of college education.
2) Level of Experience

Police officers possessing higher levels of tenure on the job will receive significantly higher performance evaluation ratings than those officers with less job tenure.

3) Time of Education

Police officers acquiring more years of college education (i.e., 1 to 2 years) after employment as a police officer will receive significantly higher supervisory performance evaluation ratings than those officers who have acquired fewer years or no college education since their employment date.

4) Interaction Between Level of Current Education and Police Experience

It is predicted that current levels of college education may combine with varying levels of police experience to produce higher performance evaluation ratings for certain groups of police officers. For example, it may be found that the combined effects of having a high level of current college education, (Bachelors Degree) and ten years experience as a police officer will contribute to higher performance ratings than would the combination of lesser amounts of college education and ten years of police experience.
5) Interaction Between Level of College Education Obtained after Employment and Police Experience

It is predicted that larger amounts of college education obtained while employed as a police officer may combine with varying levels of police officer experience to produce higher performance evaluation ratings for certain groups of police officers. For example, it might be predicted that the combined effects of having a high level of employment obtained education and ten years experience as a police officer will contribute to higher performance ratings than would the combination of lesser amounts of employment obtained education and police experience.
METHOD

Subjects

The sample consisted of 124 police officers employed by a medium size police department in the Southeastern part of Florida. Appendix A provides a breakdown by ethnic group. There were 112 males and 12 females. The median age of this sample was 29.83 years. The median number of years of police experience was slightly less than 6 years. In Appendix B an education breakdown of sample members is provided. The sample was drawn from a total population of 192 police officers. The officers were assigned to Patrol, the Detective Bureau, or Special Operations. Personnel assigned to special administrative positions, along with Vice personnel and those on vacation or otherwise not available were not used as part of the study.

Dependent Factor Measure

In order to fully evaluate the hypotheses addressed in this study, each subject was instructed to complete a one page questionnaire regarding the following:
1. Current level of education
2. Amount of college education obtained following police academy and full time employment as a police officer
3. Tenure as a police officer or, police experience.

The actual questionnaire used in obtaining these data appears in Appendix C.

The dependent measure was derived from the use of supervisory performance ratings obtained by using a paired comparison rating form (see Appendix D). The performance rating was obtained from each subject's immediate supervisor. Two performance evaluation scores were obtained, each occurring two months apart. These ratings were then averaged in order to yield the dependent measure. In order to minimize criterion bias, rating supervisors were given a list of critical behaviors identified as important for successful performance in the police officer position in a recently completed job analysis study. By utilizing the objective performance indices illustrated below, each rating supervisor rank ordered squad personnel based upon individual squad member performance in relation to specific criteria relevant to the police officer position.

For example the rater was asked to evaluate how well each member of his or her squad performs when:

- Responding to routine calls for assistance
- Search and seizure procedures - i.e., locating, collecting and preserving evidence
- Discretion in patrol activities - e.g., considers circumstances in observed violations
- Gathering information and reporting - i.e., report writing
- Facilitating traffic flow
- Making arrests - e.g., explaining rights and reasons for law enforcement actions in detail to arrestee

By maximizing the use of objective criteria serving as the basis for rank ordering on the part of the superior, this approach would be expected to maximize the "job relatedness" of the dependent measure, while minimizing criterion bias, a frequent weakness in the studies described earlier.

By rank ordering squad members in terms of their effectiveness as a police officer, a percentile rank for each of the squad members was obtained. The percentile ranking of each individual squad member was based upon that particular individual's evaluation in relation to the performance of other squad members with whom that individual was directly compared. The resulting percentile rank for each squad member was then transformed to a normalized standard score. This was done in order to allow for the direct comparison of scores for each squad due to the fact that a normalized standard score represents the same relative position in any distribution regardless of the size of the sample being transformed. The transformation table used for this conversion appears in Appendix E.
Independent Factor Measure

The levels comprising the independent factor measures appear below. The levels within these factors, though chosen arbitrarily, provide for the satisfaction of two main criteria; first, that the levels be logically distinct and distant enough from one another in order that they do not overlap; and second, that each independent factor level contain enough observations in order to render it statistically accurate.

The level of current education comprised the independent factor when addressing the first hypothesis. Current education was evaluated based upon the following levels.

Current Education

1) High School or G.E.D.
2) 1 to 2 years of college
3) Associate Degree or above

Police experience or job tenure as a police officer made up the independent of main effects factor when addressing the second hypothesis. In order to accurately attribute effects due to police experience the following categories were used in the analysis.
Police Experience

1) 0 to 5 years
2) 5.1 to 10 years
3) Greater than 10 years

Amount of education attained while employed as a police officer or time of education will comprised the independent factor when addressing the third hypothesis. Past employment education was evaluated on the basis of the following levels:

Education Earned on the Job

1) None
2) Less than 1 year
3) 1 to 2 years

The interaction addressed in hypotheses 4 and 5, between level of education, police experience and time of education and police experience were measured using the same categories presented for the first three hypotheses.

Statistical Analysis

In investigating the relationship between level of education, time of education, level of experience and the
interaction effects of education and experience on the dependent measure, two 3 x 3 factorial design analysis of variance procedures were used.

In this analysis, the factors college education, the time the education was obtained and police officer experience represent the main effects factors at which the analysis was directed in the first three hypothesized conditions. The level of significance was $p = .05$.

Another condition addressed by this analysis was the determination of whether or not an interactive effect existed. This information allowed a comparison to be made as to whether significant differences existed for groups with varying combinations of police experience and college education. This information would facilitate a better understanding of the relationship between college education and police officer experience.

In evaluating the performance relationship between the levels of current college education attained and police experience (in years) (Hypotheses 1 and 2), a 3 x 3 factorial design analysis of variance procedure was used. Two main effects each with three levels were evaluated; the first factor addressed the current level of college education attained and the second factor addressed the amount of police experience a person possessed at the time of the study. (Table 1 provides a graphic depiction of this model.)
In determining the performance effects of police experience and the time when education is acquired (Hypotheses 2 and 3), another 3 x 3 factorial design analysis of variance procedure was employed. In this case the main effects involved the amount of education obtained while employed as a police officer with the second factor again addressing the amount of police experience possessed at the time of the study (see Table 2).
### Table 2. Analysis of Variance Model: College Education Earned on the Job by Police Experience.

<table>
<thead>
<tr>
<th>Police Experience</th>
<th>None</th>
<th>Less than 1 year</th>
<th>1-2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 5 years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1 - 10 years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 years and above</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The interaction effects between the factors of current college education and police experience (Hypothesis 4), and education obtained "on the job" and police experience (Hypothesis 5) were also evaluated in order to determine whether the factors of education or experience which make up hypotheses 1, 2, and 3 were statistically independent or whether the interaction between the factor of education and the factor of experience would result in a significant F value.
RESULTS

Prior to a description as to the results of this study a critical weakness regarding the performance measure must first be addressed. A Pearson Coefficient of Correlation statistic was computed in order to assess the reliability of the two performance measures obtained over time. This statistic, \( r = .3621 \) revealed that a large degree of variability existed between the first and second administrations of the performance evaluation instrument which ultimately comprised the dependent measure. Since the two measures were averaged in order to yield the dependent measure the effect of the variability between the two performance measures was lessened. Yet the unreliable nature of the dependent measure and its effect on the independent factor measures cannot be overlooked and must be considered when interpreting the following results.

The effects of college education, the time at which it is achieved and police experience are graphically summarized in the analysis of variance diagrams depicted in Tables 3 and 4.
The results of this study indicate that police performance is not a function of experience or education no matter whether a level of college education is obtained on the job or obtained prior to employment as a police officer.

The analysis of variance shown in Table 3 was performed in order to test the first two hypotheses. A main effects test for current level of education was the statistical test for hypothesis one. This hypothesis predicted that those officers with higher levels of college education would receive significantly higher performance evaluation ratings than those with lessor amounts of college education. Table 3 illustrates however, that the hypothesized condition was not supported since a significant difference between levels was not found (F,(2, 113) = .23, p > .05).

Hypothesis two predicted that police officers having more tenure would receive significantly higher performance evaluation ratings than officers with less job tenure. Tables 3 and 4 demonstrate that police experience was not related in a statistically significant fashion to receiving higher performance evaluation ratings. Nor was a significant interaction effect found for either of the factors, current education level or level of education obtained after employment.

Hypothesis three addressed the time that education was obtained in that police officers acquiring a greater level
of college education while employed as police officers would be expected to receive significantly higher supervisory performance evaluation ratings than those with lesser amounts or no "on the job" college education. It can be seen from Table 4, that this hypothesis was not supported (F (2, 104) = 1.97, p > .05). In other words, the time at which a police officer obtained his or her education, whether it be on the job through an educational incentive program sponsored by the department or whether it was obtained prior to employment did not matter in terms of performance ratings.

Hypothesis four addressed the interaction effect between current level of college education and police experience. Table 3 illustrates that there was not a significant interaction (F (4, 113) = .98, p > .05). Thus, it is apparent that performance evaluation ratings were not associated in a statistically significant fashion with varying combinations of current college education and experience as a police officer.

Hypothesis five also addressed an interaction effect. Here, the hypothesized relationship between post employment obtained college education and police experience was assessed. Table 4 illustrates that a significant effect due to interaction did not occur. In other words, those police officers who obtained varying levels of college education while employed along with varying levels of
experience did not receive performance evaluation ratings that were statistically significant or different enough to allow a causal relationship to be drawn between level of education, police experience and performance evaluation ratings.

While neither of the main effects factors contributed significantly to the performance scores received under the hypothesized conditions (Tables 3 and 4) a trend toward significance did emerge for the interaction effects (see Tables 5, 6 and Figures 2, 3). For both factors of education and experience, those persons possessing an associates degree or above in combination with ten or more years of job experience tended to be rated higher than those with either less education or less experience (see Figures 4, 5, and 6). However, this tendency did not reach statistical significance.
Table 3

3 x 3 Analysis of Variance for Current Level of College Education and Police Experience

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>ms</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main Effects</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Level of College Education</td>
<td>2</td>
<td>49.159</td>
<td>.232</td>
</tr>
<tr>
<td>Police Experience</td>
<td>2</td>
<td>187.910</td>
<td>.885</td>
</tr>
<tr>
<td>2-Way Interactions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A x B</td>
<td>4</td>
<td>207.240</td>
<td>.976</td>
</tr>
<tr>
<td>Explained</td>
<td>8</td>
<td>158.333</td>
<td>.746</td>
</tr>
<tr>
<td>Residual</td>
<td>113</td>
<td>212.350</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05
### Table 4

3 x 3 Analysis of Variance for Level of Education Obtained While Employed as a Police Officer and Police Experience

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>ms</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Main Effects</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of Education Obtained While Employed as a Police Officer</td>
<td>2</td>
<td>428.746</td>
<td>1.966</td>
</tr>
<tr>
<td>Police Experience</td>
<td>2</td>
<td>37.994</td>
<td>.174</td>
</tr>
<tr>
<td><strong>2-Way Interactions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A x B</td>
<td>4</td>
<td>116.006</td>
<td>.532</td>
</tr>
<tr>
<td>Explained</td>
<td>8</td>
<td>192.956</td>
<td>.885</td>
</tr>
<tr>
<td>Residual</td>
<td>104</td>
<td>218.046</td>
<td></td>
</tr>
</tbody>
</table>

* p < .05
<table>
<thead>
<tr>
<th>Police Experience</th>
<th>High School</th>
<th>1 - 2 years college</th>
<th>Associates Degree or above</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean*</td>
<td>S.D.</td>
<td>Mean*</td>
<td>S.D.</td>
</tr>
<tr>
<td>0-5 years</td>
<td>44.29</td>
<td>11.60</td>
<td>39.29</td>
<td>17.18</td>
</tr>
<tr>
<td></td>
<td>(12)</td>
<td></td>
<td>(17)</td>
<td></td>
</tr>
<tr>
<td>5.1-10 years</td>
<td>33.83</td>
<td>17.39</td>
<td>40.55</td>
<td>9.18</td>
</tr>
<tr>
<td></td>
<td>(3)</td>
<td></td>
<td>(19)</td>
<td></td>
</tr>
<tr>
<td>10 years and above</td>
<td>42.40</td>
<td>12.04</td>
<td>46.38</td>
<td>3.97</td>
</tr>
<tr>
<td></td>
<td>(10)</td>
<td></td>
<td>(8)</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>40.17</td>
<td>42.04</td>
<td>43.78</td>
<td></td>
</tr>
</tbody>
</table>

Table 5. Means and Standard Deviations of Performance Appraisal ratings for subjects by current level of college education and police experience.

* Numbers in parentheses indicate the number of persons within each cell group.
Figure 2. Interaction between current level of college education and police experience
Amount of College Education Attained While Employed as a Police Officer

<table>
<thead>
<tr>
<th></th>
<th>Mean*</th>
<th>S.D.</th>
<th>Mean*</th>
<th>S.D.</th>
<th>Mean*</th>
<th>S.D.</th>
<th>Mean*</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>None</td>
<td></td>
<td>Less than one year</td>
<td></td>
<td>1-2 years</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-5 years</td>
<td>36.17</td>
<td>12.15</td>
<td>44.97</td>
<td>12.27</td>
<td>45.05</td>
<td>10.61</td>
<td>442.06</td>
</tr>
<tr>
<td>(27)</td>
<td>(15)</td>
<td></td>
<td>(14)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Police Experience years</td>
<td>43.67</td>
<td>9.44</td>
<td>38.65</td>
<td>14.9</td>
<td>44.50</td>
<td>9.24</td>
<td>442.27</td>
</tr>
<tr>
<td>5.1-10 years</td>
<td>(3)</td>
<td></td>
<td>(10)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 years and above</td>
<td>42.25</td>
<td>11.14</td>
<td>42.92</td>
<td>10.78</td>
<td>45.30</td>
<td>6.63</td>
<td>443.49</td>
</tr>
<tr>
<td>(6)</td>
<td>(6)</td>
<td></td>
<td>(6)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>40.70</td>
<td></td>
<td>42.18</td>
<td></td>
<td>44.95</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 6. Means and Standard Deviations of Performance Appraisal ratings for subjects by amount of college education obtained while employed as a police officer and police experience.

* Numbers in parentheses indicate the number of persons within each cell group.
Figure 3. Interaction between the Amount of College Education obtained after Employment and Police Experience.
Figure 4. Mean Performance Appraisal ratings for subjects by current level of college education.
Figure 5. Mean Performance Appraisal ratings for subjects by level of college education attained while employed as a police officer.
Figure 6. Mean Performance Appraisal ratings for subjects by police experience
(Same for both levels of education)
DISCUSSION

The findings anticipated in this study on the basis of previous research were not supported by the statistical analysis. None of the five hypotheses predicted to elicit a statistically significant effect on the basis of level of college education, time of education, police experience or interaction between these factors was supported.

On the basis of these findings, a summary of this study shows that performance as a police officer is neither a function of the level of college education one possesses, the time at which that education is obtained or the number of years the person has been a police officer. Although this finding contradicts the findings of earlier studies, Bache, Frommel and Furlon (1968), Cascio (1977), Chaiken and Cohen (1972) and Witter (1976), the contradiction is believed to be due primarily to differences in experimental design.

Despite the absence of statistically significant results this experimenter maintains that the differences demonstrated in this study with respect to the findings of the aforementioned researchers show similar patterns. The
The earlier studies reported a significant effect for education (experience was not addressed), this study failed to demonstrate a significant effect but did show a trend toward significance for education, a difference, which this experimenter attributes again to the design of the study and possibly to characteristics of the organization from which the subjects were drawn. The design of this study differs from previous studies of a similar nature in that it addresses the issue of police education by objectively specifying different levels of education and evaluating the time at which that education is obtained, the level that is obtained and then the subsequent relationship to police performance. Secondly, the performance ratings utilized in this study were based upon behavioral criteria as identified from job analysis data as being important for effective performance. This was done in order to minimize the weaknesses characteristic of previous studies by attempting to accurately measure how well a police officer performs the bulk of his duties such as providing service to the public and maintaining law and order (Roberg, 1976). In utilizing the paired comparison rating format for obtaining performance ratings as well as providing relevant job analysis data as guidelines, it was believed that the rater would have been allowed the freedom to assess subordinates performance based upon the bulk of their duties. A major objective of this
study was to evaluate the relationship of higher education and police experience while employing sufficient research controls found to be lacking in earlier studies (Hudzik, 1976). In this way the justification of these variables as predictors of police officer performance can be more fully evaluated.

In light of the findings of this study there is evidence that indicates superior performance as a police officer cannot be totally attributed to a particular level of college education, time of education or length of time on the job. The evidence indicates that college education and police experience are not the sole contributors to higher performance evaluation ratings but that other factors may also be contributing. Chaiken and Cohen (1972) reported that of the strongest predictors of later performance, education was a significant factor. Significant, yet not independent in that Chaiken and Cohen also found disciplinary history, age, awards, injury, sick time, and civilian complaints to also be significant factors contributing to superior police officer performance.

Thus, the absence of a significant effect on the part of the factors measured are probably largely the result of the variability within the dependent measure. Other non measured factors, however, specific to the organization from which the subjects were obtained also contributed toward a
significant interaction. Additionally, these findings may be partially due to the attempt in this study to quantify at what level a performance effect is exhibited, on the basis of level of college education, time of education, police experience or the interaction of these factors, rather than simply evaluating the effect of college education versus non college education.

Interpretation of the fact that a trend toward significance emerged for each of the five hypothesized conditions lends support to the findings cited in earlier studies. Figures 4, 5, and 6 show that persons possessing the maximum levels of both experience and college education do tend to receive higher performance evaluation ratings. Although not statistically significant, these observations do lend some support to the hypothesized effect college education and police experience would have on performance evaluation ratings. This effect was the most apparent for the condition described by the third hypothesis. The trend toward significance thus being most apparent when greater levels of college education are obtained while employed as a police officer and when that tenure has been for 10 years or more.

In light of the variability which contributed to the unreliable nature of the dependent measure, no one accurate conclusion can be drawn from this study. This researcher believes however, that the design of this study warrants
further attention and should serve as a model for future research in this area. In relation to the previous research in this area a conscious attempt was made to conduct an objective and contamination free study. The attempt in this study was to specifically quantify all aspects of the criterion measure in order to decrease the possibility that any one aspect may be biased. As a result three distinct levels for each independent factor measure were specified. The fact that three levels of each factor were used probably contributed to the lack of a significant effect in that the comparison did not compare extreme levels as is done when comparing "high" versus "low" conditions. Rather this study compared levels evenly distributed across categories representative of "low", "medium" and "high" conditions, thus making it more difficult to achieve a significant effect.

An attempt was also made to minimize the error effects traditionally associated with performance evaluation ratings which served as the dependent measure within this study. This was to be done by using a paired comparison rating format in which the ratings were collected twice, each occurring two months apart and then averaged. The use of this procedure, however, proved statistically unreliable providing a correlation coefficient of $r = .3621$ and demonstrating an apparent unfamiliarity on the part of the raters with the
performance evaluation instrument utilized. Thus, as a result of the variability affecting the dependent measure no accurate assumptions can be made regarding the performance effects of college education and experience. Successful performance as police officer may be due to factors other than or in combination with college education and police experience, however, the effect of these factors or the identification of other factors contributing a significant difference remains an unanswered question.

The apparent difficulty experienced by the raters in this study with the performance evaluation measure is an area that deserves further exploration. The attempt to obtain a better, less subjective measure of performance succeeded only in yielding a high degree of unreliability across time. Thus, it is obvious that future research utilizing performance evaluation measures as the dependent variable should be done only after providing sufficient training on the use of the performance evaluation instrument. It would also be advantageous to provide training in the general area of performance evaluation in that typically the rating superior has little experience in recognizing the behavioral determinants of effective versus ineffective behavior on the part of the ratee.
Finally, in considering the results of this or any other study of this nature it is important that they not be considered as a foundation upon which future police organizational policy and personnel decisions are established. Prior to the establishment of any policy regarding this issue, the following should be carefully considered.

Regarding the current trend to require some level of college education as a prerequisite toward obtaining employment as a police officer, two questions should be addressed. First, in light of the findings of this study is there sufficient evidence to indicate that education alone can predict future success as a police officer? Or is education just one of many factors such as training academy scores, quality of on the job training, or factors unique to the particular organization such as organizational design, leadership styles of other factors that would have a performance effect? And, if education in combination with these other factors is responsible for successful performance to what degree is this performance a function of education versus a function or a result of the other factors which in many cases may be organizationally specific.

Secondly, in echoing the concerns of Hudzik (1978), at what level of college education does it begin to contribute to successful performance. In this study a trend toward
significance existed only for those with the educational level of an associates degree or higher in combination with 10 or more years of police experience.

It is the opinion of the experimenter that non-empirically based decisions regarding the institution of college educational prerequisites can only result in organizational and legal difficulties on the part of the organization employing such standards. It is thus, the recommendation of the researcher that prior to the establishment of such a policy the organization undertake a similar study in order to evaluate the organizationally specific effect of college education and police experience as well as, other contributing factors in order to determine which factors are most responsible for contributing to future success in the job of police officer for that particular organization.
## APPENDIX A

### ETHNIC COMPOSITION OF POLICE OFFICER SAMPLE

<table>
<thead>
<tr>
<th>Ethnic Group</th>
<th>Absolute Frequency</th>
<th>Relative Frequency (Percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caucasion</td>
<td>115</td>
<td>92.7</td>
</tr>
<tr>
<td>American Indian</td>
<td>1</td>
<td>.8</td>
</tr>
<tr>
<td>Black American</td>
<td>3</td>
<td>2.4</td>
</tr>
<tr>
<td>Spanish Surnamed</td>
<td>5</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>124</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>
APPENDIX B

EDUCATIONAL BREAKDOWN OF POLICE OFFICER SAMPLE

<table>
<thead>
<tr>
<th>Educational Level</th>
<th>Number of Persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School</td>
<td>25</td>
</tr>
<tr>
<td>1-2 Years of College</td>
<td>46</td>
</tr>
<tr>
<td>Associates</td>
<td>15</td>
</tr>
<tr>
<td>2-4 Years of College</td>
<td>17</td>
</tr>
<tr>
<td>Bachelors</td>
<td>15</td>
</tr>
<tr>
<td>1-2 Years of post graduate</td>
<td>3</td>
</tr>
<tr>
<td>Masters</td>
<td>3</td>
</tr>
</tbody>
</table>

Educational Level
APPENDIX C

BIOGRAPHICAL DATA QUESTIONNAIRE
Identification Number ______________

Please complete the information requested and check the applicable blanks.

ETHNIC BACKGROUND (check one)

1. Caucasian (white) ______
2. Oriental ______
3. American Indian ______
4. Black American ______
5. Spanish surnames (Hispanic) ______

LENGTH OF POLICE OFFICER EXPERIENCE (estimate)
Number of years _____ months____

A. How much education do you currently have? (check one)

1. High school degree or GED ______
2. 1 to 2 years of college ______
3. Associates Degree ______
4. 2 to 4 years of college ______
5. Bachelor's Degree ______
6. 1 to 2 years post graduate work ______
7. Master's Degree ______
8. Master's plus additional graduate work ______
9. Law or Doctoral Degree ______

B. How much of the above was earned after graduation from the Police Academy and beginning full time employment (estimate, check one)

1. None ______
2. Less than 1 year ______
3. 1 to 2 years ______
4. 3 to 4 years ______
5. 5 to 6 years ______
6. More than 6 years ______
APPENDIX D

PAIRED COMPARISON RATING FORM
RATING SERGEANT

On the following pages you will see pairs of names of officers whose performance you are familiar with. In considering each pair, please put a check ( ) next to the name of the officer who, in your opinion, is the better of the two. In making your decisions, consider how well each officer handles:

- Responding to routine calls for police assistance - e.g., malicious mischief, suspicious person, reckless driver.
- Search and seizure procedures - i.e., locating collecting, and preserving evidence.
- Discretion in patrol activities - e.g., considers circumstances in an observed violation.
- Gathering information and reporting - e.g., gathers and evaluates information required for oral and written reports and records. Forwards complete accurate and concise reports and records.
- Facilitates traffic flow - e.g., identifies pedestrian and vehicular irregularities.
- Interpersonal aspects of arrest procedures - e.g., explains reasons for law enforcement actions in detail to suspect.

Here are the officers whose performance you will be rating:
1. ____________________________________________
2. ____________________________________________
3. ____________________________________________
4. ____________________________________________
5. ____________________________________________
6. ____________________________________________
APPENDIX E

TRANSFORMATION TABLE
Computation of Normalized Standard Scores

The following steps illustrate the computation of normalized standard scores. The data are those used in the previous examples (Tables 10.1 and 10.2). Computational steps

1. For each raw score find the cumulative proportion (CP) using the procedures described in Table 10.1.

2. In the Table of Areas of the Normal Curve (see Appendix A), find the z score comparable to this CP. For scores above the median (CP > .500) use the column labeled "Area of the Larger Proportion"; for scores below the median (CP > .500) use the column labeled "Area of the Smaller Proportions." This gives the z score that cuts the distribution into the desired proportions. We shall refer to this value as z' to distinguish it from z scores computed by a linear transformation (as in Table 10.2). To obtain values of z' you may have to interpolate.

3. Again, we shall transform scores to another scale. And, again, we shall use one with a mean of 50 and a standard deviation of 10 points; that is Z' = 50 + 10z'.

The computational routing is tabulated as follows:

<table>
<thead>
<tr>
<th>X</th>
<th>CP</th>
<th>z'</th>
<th>Z'</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>.989</td>
<td>2.29</td>
<td>73</td>
</tr>
<tr>
<td>31</td>
<td>.958</td>
<td>1.73</td>
<td>67</td>
</tr>
<tr>
<td>30</td>
<td>.890</td>
<td>1.23</td>
<td>62</td>
</tr>
<tr>
<td>29</td>
<td>.780</td>
<td>0.77</td>
<td>58</td>
</tr>
<tr>
<td>28</td>
<td>.667</td>
<td>0.43</td>
<td>54</td>
</tr>
<tr>
<td>27</td>
<td>.537</td>
<td>0.09</td>
<td>51</td>
</tr>
<tr>
<td>26</td>
<td>.415</td>
<td>-0.21</td>
<td>48</td>
</tr>
<tr>
<td>25</td>
<td>.311</td>
<td>-0.49</td>
<td>49</td>
</tr>
<tr>
<td>24</td>
<td>.209</td>
<td>-0.81</td>
<td>42</td>
</tr>
<tr>
<td>23</td>
<td>.130</td>
<td>-1.13</td>
<td>39</td>
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<tr>
<td>22</td>
<td>.056</td>
<td>-1.59</td>
<td>36</td>
</tr>
<tr>
<td>21</td>
<td>.014</td>
<td>-2.20</td>
<td>28</td>
</tr>
<tr>
<td>20</td>
<td>.003</td>
<td>-2.75</td>
<td>22</td>
</tr>
</tbody>
</table>

Note: If the distribution is normal, normalized standard scores (z' or Z') will have the same value, within rounding errors, as the comparable linearly transformed standard scores (z or Z, respectively). If the distribution is not normal, the comparable values will differ. (Brown, 1976)
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