The influence of age and academic grade point average in a comparative decision making strategy of teacher selection

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The Ohio State University, 1988

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THE INFLUENCE OF AGE AND ACADEMIC GRADE POINT AVERAGE
IN A COMPARATIVE DECISION MAKING
STRATEGY OF TEACHER SELECTION

DISSERTATION

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

By

A. William Place

* * * * *

The Ohio State University

1988

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Dedication

The hard work and effort required of this endeavor has added much to this humble student's understanding of the old saying "no pain, no gain". Through out my life there have been many people whose personal and professional assistance have helped me grow and expand personally and professionally. This work is dedicated to all of those people in my life who most of the time do not get the thanks and recognition they deserve especially my wife, her family, my family, and our family.

The people this father-to-be wishes to single out are his parents, with out whose love and support an endeavor of this nature could not even have been attempted. Therefore, it is hoped that this work brings happiness and honor to my parents. The mother who has with her delightful laughter and seemingly indomitable spirit given strength to the whole family. The joy and moral fiber she gave our family enabled us all to become happy and successful. The father who has with his entire life taught me the meaning of the advice we received from his father "each day that you live in this world try to give
the world a little more than you take away". In the tough
times of this endeavor I was helped by thoughts of my
father's spirit, enthusiasm, drive, and intellectual
inspiration given me through antecedent discussions
ranging from the thoughts of Teilhard de Chardin to
impassioned and sometimes stormy discussions of Capitalism
versus other systems. With all of this in mind, I now
move on and will try to follow in my father's example of
making this world a better place one step at a time.
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Introduction

The purpose of this study is to expand existing knowledge about the screening stage of the teacher selection process. Several studies have revealed that chronological age of a teacher candidate, sex of a teacher candidate, and undergraduate grade point average (G.P.A.) of a teacher candidate influence the screening decisions made by public school principals. However, these findings are based on designs which required each administrator to evaluate only one hypothetical teacher candidate. In this study principals were asked to screen four hypothetical teacher candidates, a simulation closer to the actual selection situation in which most principals make screening decisions about teacher applicants.

Teacher selection research is important because in the field setting there will always be opportunities for teacher selection due to retirements, career changes, and promotions. Teacher selection is important both in maintaining present standards and in improving standards in the future. But a more important reason for careful teacher selection may be the possibility that society's
future generations will be only as capable as the teachers
selected to educate today's children. Christa McAuliffe
personalized this belief when she stated, "I touch the
future; I teach." (as quoted by Hohler, 1986, p. 155).

Teacher selection as an administrative task has been
given varying amounts of attention in the literature
depending on the prevailing attitudes toward the quality
of education in the nation at any particular point in
time. Presently, there are two reasons why teacher
selection is given attention. First, the general interest
in education has been rekindled by highly publicized
reports such as A Nation at Risk (1983) by the National
Commission on Excellence in Education and by the recent
Holmes Report (1986). Second, there is a current
prediction of need for more teachers in the near future
(National Center for Educational Statistics[NCES], 1985
p.79 and NCES 1984). According to Wise, Darling-Hammond,
Berry, Berliner, Haller, Praskac, and Schlechty (1987)
over a million new teachers will be needed in the next
decade.

The selection process has been described as including
recruitment, screening, hiring, placement, induction, and
evaluation of teachers (Wise, et al., 1987). This study
is designed to explore one critical aspect of the
selection process—the screening of applicants. This
single aspect, however, cannot be discussed in isolation from other aspects of the selection process because all of the elements in selection are interrelated—especially screening, hiring, and evaluation. Screening involves the initial review of the general suitability of applicants on the basis of paper credentials. Hiring involves subsequent steps, including the interview and the final recommendation to hire or not hire. Finally, evaluation involves a measure of job success or failure for those applicants hired.

In a broad sense, selection involves using some means of predicting the success or failure of prospective candidates in a given position. For a job which is very simple, one predictor may be sufficient for making a prediction of success or failure. However, for a job that is very complex, it may require a number of predictors combined in some way for making an overall prediction of success or failure.

One approach, the compensatory model, combines all predictors for each candidate. In the compensatory model, "applicants may have some characteristics that compensate for deficiencies" (Heneman, Schwab, Fossum, and Dyer 1986 p.325). When predictors are combined via the compensatory model, deficiencies may be overcome if enough positive characteristics exist.
Another approach that accommodates multiple predictors in sequence of their importance is the multiple hurdle or the multiple cutoff model. An unsatisfactory assessment on one predictor (e.g., a teacher with poor references) result in no further consideration for an applicant. The logic underlying the multiple hurdle approach is that some predictors are so important that, no matter what other strong qualities a candidate may have, a weakness in any vital qualities can not be overcome by strengths in other areas.

There are many possible combinations of the compensatory model and the multiple hurdle model. Quite common in education is a combination incorporating the multiple hurdle approach at the screening stage of the selection process and the compensatory approach at the final recommendation stage of the selection process. In fact, over 90 percent of administrators in the studies by Young and McMurray (1986) and Young and Voss (1986) reported using a resume screening step in the teacher selection process to delimit the applicant pool. This practice makes the screening stage vital to any ultimately successful candidate.

Research for a number of years was conducted as if the selection process were a single phenomenon. Factors found to influence decisions at one stage of the selection
process were discussed as if these factors were generalizable to other stages of the selection process. For example, it was thought that if chronological age of candidates were found to influence an interview decision, then chronological age of candidates would influence a screening decision. More recent research has indicated that factors influencing one aspect of the selection process, such as the interview, do not necessarily influence other aspects of the selection process (i.e., screening) (Gorman, Clover, and Doherty, 1978; Imanda and Hakel, 1977; Young and Pounder, 1985).

Because factors considered in one stage of the selection process may not be generalizable to other stages of the selection process, researchers began to study the stages of the selection process separately. One consistent finding of studies examining the screening stage as a separate process is that chronological age of candidates effects screening decisions made by school administrators. Older teacher candidates have been found to be evaluated systematically lower than younger teacher candidates at the screening stage of the selection process.

For example, Johnson (1976) reported that of 104 Ohio administrators replying to a survey, most administrators expressed a preference for 20 to 25 year old teachers.
Unfortunately, this finding fails to explain why the administrators preferred younger candidates over older candidates. Economic concerns could explain this preference or this preference could indicate the presence of a more complex problem.

The administrators' preference for younger teacher candidates was examined through a resume study by Young and Allison (1982). These investigators varied experience (none, three or eight years) to ascertain if the usual economic advantage of hiring younger, less experienced candidates could explain the preference for younger teacher candidates. In addition to teaching experience, the chronological age of teacher candidates as well as the administrative role of the evaluator (principal or superintendent evaluators) was varied in their study. However, they found only age to be a significant factor influencing screening decisions and suggested that certain characteristics which administrators attribute to youth (not economic concerns) may explain the administrators' preference for younger candidates.

The preference for younger candidates is acceptable from a legal standpoint only if the characteristics which cause youth to be preferred are job related. The legal term for this job related preference is a bona fide
occupational qualification (BFOQ). However, BFOQs have not been easily recognized by the courts, and age of a candidate is not a recognized BFOQ for teachers under 70 years of age. In fact, a recent study (Young and Place, 1988) reported that younger teachers were not found to have better job performance than older teachers, thereby supporting the concept that age should not be a BFOQ for teachers.

The conclusions of other studies indicate the administrators’ preference for younger candidates has persisted regardless of quantity of candidate information (Young and McMurray, 1986; Young and Voss, 1986) or the instructional level (K-6 vs 9-12) (Young and Schmidt, 1987). The conclusions of still other studies have indicated a disproportionate impact for older candidates in connection with other significant variables, for example, quality of candidate stimuli [2.68 vs. 3.5 undergraduate grade point average] (Young and Joseph, 1987; Young and McMurray, 1986), skill obsolescence (Young and Joseph, 1987), and gender of candidates (Young and Schmidt, 1987).
Problem

Recent studies have contributed greatly to the current knowledge about decision making in the teacher selection context and have a high degree of internal validity. One problem with this recent research is the external validity of the studies. Each of the antecedent teacher selection studies relied on the evaluation of a single candidate by a single administrator. A realistic selection situation in the field setting is much more likely to involve administrators screening several candidates for the purpose of delimiting the applicant pool. Therefore, decisions in the field setting may be based more on comparative data about candidates than on absolute qualities of candidates.

Given the previous results, the strongest hypothesis stems from the findings of the preference for younger teacher candidates (Johnson, 1976; Young and Allison, 1982; Young and Joseph, 1987; Young and McMurray, 1986; Young and Schmidt, 1987; Young and Voss, 1986). However, chronological age of teacher candidates should be considered in connection with other factors with which age has been found to interact. At least two factors found to interact with chronological age of teacher candidates are:
(1) quality of undergraduate grade point average of the teacher candidate (Young and McMurray, 1986; Young and Joseph, 1987); and (2) sex of the teacher candidate (Frasher, Frasher and Wims 1982; Young and Schmidt, 1987). However, previous research has not addressed these factors in a comparative decision making situation; therefore, specific a priori hypotheses are not proposed for this study.

The first null hypothesis tested in this study is that resume condition will not effect principals' evaluations of chemistry teachers when decisions are made in a comparative situation at the screening stage of the teacher selection process. Post-hoc tests for significant differences within levels of this condition may show an effect of chronological age of teacher candidate, of undergraduate G.P.A., or of an interaction of chronological age and undergraduate G.P.A. of teacher candidate. There are important implications for educational policy and practice if a bias against older candidates is confirmed in a comparative design (these will be discussed in more detail in subsequent sections; also see Young and Ryerson, 1986).

The second null hypothesis tested in this study is that female chemistry teachers will be evaluated the same as male chemistry teachers. The sex of teacher candidate
will be examined in a between subjects design. Legal and practical implications of a finding supporting the existence of sexual bias are very similar to the implications of a finding supporting the existence of age bias. A difference in how these data should be analyzed is based on the conflicting and smaller knowledge base indicating sex as a factor involved in the screening decisions made by educational administrators. All appropriate post-hoc analyses of possible pairwise means will be conducted provided main effects for resume condition (containing age of teacher candidates as well as undergraduate grade point average), for sex of teacher candidates, or for an interaction effect for sex of candidate and resume condition is detected.

High school principals evaluated hypothetical candidates on six criteria, using a four point Likert type scale for each criterion. The six criteria used to compute a composite score are: (1) curricular knowledge; (2) communication skills; (3) discipline ability; (4) classroom management; (5) growth potential; and (6) overall school contribution. The dependent variable used in this study is the composite evaluation score for each resume condition (Young and Allison, 1982; Young and Joseph, 1987; Young and McMurray, 1986; Young and Pounder 1985; Young and Schmidt, 1987; and Young and Voss, 1986).
The independent variables used in this study are sex of candidate (male name or female name) and resume condition in a repeated measures design (within subjects). Resume condition consists of a two by two factor variation with four resumes for each sex: (1) an old teacher candidate (49 years old) with a low undergraduate grade point average (2.69); (2) an old teacher candidate with a high grade point average (3.50); (3) a young teacher candidate (29 years old) with a low grade point average; and (4) a young teacher candidate with a high grade point average.

Order of resume condition was varied to control for recency, primacy, and contrast effects. This control will be achieved through a balanced design where each experimental condition follows and precedes all other experimental conditions (Keppel 1982, p.377).

**Definitions**

A short list of definitions will be presented here to aid the reader and to explain how some terms are used in this study.

Contrast effect - the effect that can be attributed to comparing an observation to the preceding observation.
Primacy effect - the effect that can be attributed to information which is received first or toward the beginning (first impression counts).

Recency effect - the effect that can be attributed to information which is received last or toward the end of the total amount asked to be evaluated (last impression).

Predictor - a factor which influences or is hypothesized to influence a dependent variable.

Validity - generally a measure of accuracy judged in different ways depending on the type of validity referred to in the particular usage.

External validity - is a general level of accuracy with which a studies findings reflect another situation.

Internal validity - the accuracy with which a study measures what it purports to measure.
Employee selection has attracted the interest of researchers from the private sector for several decades. Although the interest in selection has not lessened during the last 50 years, the direction of selection research has changed. Selection research has changed from a macroanalytic perspective to a microanalytic perspective.

Macroanalytic Research

Early selection researchers sought to improve the utility of employee selection by identifying predictors of job performance through the use of a predictive validity paradigm. The single predictor most often investigated was the selection interview. The units of analysis in these predictive validity paradigms were interview results and job performance measures. Correlational techniques were used to assess the covariation between the interview results and job performance measures.

Results from early macroanalytic research addressing employee selection were disappointing in many instances.
In fact, most selection studies failed to reveal any relationship between interview assessments and performance criteria. A typical example of these disappointing outcomes with respect to interview validity in general was reported by Corey (1933). To obtain reliable and valid assessment of criteria measures, Corey had 12 intimate friends rank eight undergraduate females on seven factors. Persons unfamiliar with the females were required to interview and assess the eight girls on the same seven factors. Results from interviews conducted by persons unfamiliar with the females failed to reveal agreement with the ratings provided by close friends of the females.

Similar outcomes from other studies which examined the interview led some investigators to suggest that the correlations between interview assessments and criteria measures were attenuated by the lack of reliability for selection interviews. For example, Wagner (1949) reviewed the existing selection research published through the 1940's. From these studies Wagner compiled a list of traits for interviewees assessed in a number of studies. The most frequent traits assessed were appearance of the candidates and over-all ability of the candidates.

Because these studies reviewed by Wagner predated classical psychometric theory, most investigators reported what has later been labeled as conspect reliability.
Conspect reliability involved the correlation of the ratings provided by different interviewers for the same candidates. With respect to the reliabilities reported for appearance and over-all ability of candidates the coefficients were .34 and .45, respectively (Wagner, 1949).

To increase the reliability of interviews some investigators relied on a mechanistic process involving check marks on structured interview forms. Wagner (1949) suggested that this system "would give the appearance of reliability" (p.33). However, the check mark system failed to yield the desired results because the categories for check marks were so nondescriptive that they yielded limited information about candidates.

Further pursuits of reliability resulted in the development of classical psychometric theory (Cronbach, 1970) and in the development of structured interview guides (Schwab and Heneman, 1969; and Carlson, Schwab, and Heneman, 1970). Reliability, as defined by classical psychometric theory, consisted of methods for computing coefficients of internal consistency, coefficients of stability, and coefficients of equivalence. Structured interview guides differed from earlier attempts to use the check system in that the questions of interviewers, as well as the responses of interviewees, were governed by
preestablished forms.

As a result of the development of classical reliability theory, as well as the development of structured interview guides, the reliability of the selection interview was increased. Although the increase in reliability of the selection interview was suggested by data, an increase in the validity of selection interviews as a predictor of job performance was not observed. Consequently, Wagner (1949) recommended that the selection interview be discontinued and that selection research be channeled in a different direction.

Few employers or researchers heeded the recommendations of Wagner. Most employers continued to use the selection interview as a predictor, and most investigators continued to conduct validity studies for the selection interview. This post-Wagner research was reviewed by Mayfield (1964).

Mayfield (1964) found that the increased reliability of the selection interview had not resulted in an increased validity of the selection interview. This finding was, however, not surprising given certain methodological aspects such as restriction of range and interviewee motivation. If a structured interview guide were used to select employees and if a structured interview guide were valid, then the validity coefficient
between interview performance and job performance would be attenuated due to a restriction in range for either the interview or the job performance measure. On the other hand, if the validity of a selection interview were assessed with current employees, then these employees either may not be motivated to perform well during the interview or may have learned the correct response to the interview guide only after being employed (Guion, 1965).

Because of the problems associated with the selection interview and with macroanalytic research, Mayfield (1964) suggested the ultimate goal of validity be postponed until the selection process was better understood. To better understand the selection process Mayfield recommended that effort be devoted to identifying the factors that influence selection decisions. This recommendation by Mayfield changed the direction of selection research from a macroanalytic perspective to a microanalytic perspective.

**Microanalytic Research**

Microanalytic studies differ from macroanalytic studies in several ways. First, microanalytic studies were conducted mostly in an experimental setting, while macroanalytic studies were conducted generally in a field
setting. Second, microanalytic studies were based in general on inferential statistical techniques, while macroanalytic studies involved descriptive correlational techniques.

The goal of microanalytic research is to provide an understanding of the selection process by breaking the selection process into smaller components for investigation. To accomplish this goal of understanding the selection process, several different research techniques were used. These techniques included simulation, video, and resume information.

Simulations were usually conducted in a laboratory setting. Individuals taking part in these simulations were assigned either the role of interviewer or the role of interviewee and were requested to play their respective part in a simulated employment interview. Specific factors hypothesized to influence the decisions of interviewers were manipulated either through subject selection procedures or through written information provided by scripts for the simulation. These studies were somewhat inefficient to conduct because it took a minimum of two persons (interviewer and interviewee) to produce one unit of observation for analysis.

The inefficiency of simulated interview research involving role playing of at least two persons resulted in
some investigators using video tapes to study the selection process. Video tapes were produced that captured the performance of interviewees taking part in the selection process. Contents of these tapes were manipulated to produce different experimental conditions, and these conditions were assessed by having participants assume the role of an interviewer, view the video tape, and evaluate the interviewee depicted on the tape. Because of the time involved in producing the video tape and because of the time required for showing the video tape to participants, some investigators used an even more efficient method to study the selection process.

The most efficient (with respect to time and effort) technique used by investigators to study the selection process has been labeled the resume technique. Resumes of hypothetical applicants were created by investigators and were evaluated by participants taking part in selection research. Specific characteristics of applicants were manipulated through the construction of resumes while specific characteristics of participants were manipulated through subject selection procedures.

As a result of using the different experimental techniques to study the selection process, several factors were identified that influenced decision making within the selection process. These results from microanalytic
studies were assumed to be generalizable to the selection process in general and to interviews specifically. These assumptions were challenged, however, from two perspectives: (1) participants; and (2) method bias.

Because most microanalytic selection research was conducted in laboratory settings and relied on undergraduate students as participants, the generalizability of results to experienced interviewers was questioned. To investigate this issue Hakel, Dobmeyer, and Dunnette (1970) varied the type of interviewer (student vs. professional interviewer). They had these persons evaluate hypothetical applicants that differed with respect to academic standing, work experience, and level of interest. Students were found to give job experience more weight than professional interviewers, while professional interviewers were found to give lower ratings than students to the lower academic levels. However, subsequent researchers investigating the student as a participant in selection research failed to produce any substantial differences between students and professional interviewers (Berstein, Hakel, and Harlan, 1975; Dipboye, Fromkin, and Wiback, 1975; and McGovern, Jones, and Morris, 1979).

The specific experimental methods used to assess the decisions made in the selection process were challenged.
Because interviews involve social interaction between interviewers and interviewees, several investigators suggested that the omission of this interaction in studies using either video tapes or resumes limited the generalizability of the obtained results to a specific method. To examine the issue of method specific results, decisions made on the basis of interview data were compared both to the decisions made on the bases of video data (Imada and Hakel, 1977) and to decisions made on the basis of resume data (Gorman, Clover, and Doherty, 1978). Results in both instances were different from decisions made on the basis of interview data. These findings suggest that researchers should generalize their results only to decisions in the employment setting that are based on like type of applicant stimuli. That is, decisions made on the basis of interview data should be generalizable only to the interview situation, while decisions made on the basis of resume data should be generalizable only to screening decisions.

Teacher Selection

As a topic of interest for research, the teacher selection process has failed to receive attention proportional to attention devoted to selection research in
the private sector. However, the limited research addressing the teacher selection process has evolved in a pattern similar to the pattern found in the private sector research. Initial teacher selection research was macroanalytic, while more recent teacher selection research is microanalytic.

**Macroanalytic Teacher Research.**

Similar to the industrial psychologists in the private sector, early teacher selection researchers sought to improve the utility of the selection process through the use of predictive validity paradigms (for a review of these studies see Schalock, 1979). Rather than focusing on the selection interview as had been done in the private sector, teacher selection researchers focused on the National Teachers Examination (NTE) as a predictor of performance. Correlational techniques were used to assess the correlation between test performance on the NTE and job performance of classroom teachers.

To assess the utility of the NTE for selecting teachers, several different criteria for teaching performance have been used. Both predictive and concurrent validity paradigms have been used to assess the
validity of the NTE. For example, Ryans (1951) used a measure of teacher performance (supervisor ratings) as a criterion in a concurrent validity paradigm. A correlation of .17 was found between the NTE subtest on General Principles and Methods of Teaching with the elementary school principals’ ratings (made up of three dimensions: pupil behavior, teacher personal-social behavior in the classroom, and teacher behavior indicative of intellectual and educational background of the teacher). These principals’ general evaluations of teachers correlated .23 with the same NTE subtest.

Criteria measures (in the predictive validity paradigm) representing teacher performance have been operationalized via supervisor ratings, pupil ratings, pupil residual gain scores, and classroom observations. Supervisor ratings are the most common of these criteria. Eissey (1967) used principals’ ratings of teachers obtained from the first and third year of teaching as criteria. Eissey found a correlation of .10 both for the first year ratings provided by the principals and for the third year ratings provided by the principals (the ratings were the average of principal ratings on five point scales of the teachers’: personal qualification, teaching skills, relation with others, professional ethics and performance,
moral and social ethics and performance, and a total score) with the NCE Weighted Common Examinations Total (WCET).

Studies which used pupil ratings or pupil residual gain scores were not very promising. Classroom observation (Flanders' Interaction analyses and OScAR 4V were used) was the criterion used by Medley and Hill (1970). Of 165 beta weights associated with observational data only nine of the weights were significant. One observational variable was lecturing behavior (as measured by the Flanders technique) and one criterion variable was certain NTE scores. The correlation between these two was .66.

A major criticism of teacher selection research was pointed out by Schalock (1979). Schalock criticized the macroanalytic approach by stating, "We do not have empirically verified criteria that can be used to effectively predict success in teaching, especially if success is to include the demonstrated ability to foster desired learning outcomes in children" (p.408). Because of the lack of empirically verifiable criteria for teaching effectiveness, Schalock proposed a framework for investigating teacher selection. He suggested a predictive type of research paradigm that was sensitive to
the "impact of the setting in which teaching occurs" (p. 408).

**Microanalytic Teacher Research.**

Educational researchers addressing teacher selection in recent years have followed a microanalytic approach rather than the macroanalytic approach suggested by Schalock (1979). This change in direction from a macroanalytic approach to a microanalytic approach can be attributed to several factors. One factor influencing the change in direction is the desire of educational researchers to understand better the teacher selection process. A better understanding of the teacher selection process can be obtained by breaking the teacher selection process into several stages and by identifying factors that influence decisions at the separate stages.

Another reason for the change in direction from a macroanalytic perspective to a microanalytic perspective rests with the illusive nature of a criterion measure for teacher performance. Teacher performance, as a criterion, is idiosyncratic rather than universal. What might be defined as excellent performance in some school districts may very well be irrelevant performance in other school districts. To resolve this difficulty microanalytic
researchers focused on the decision process rather than on teacher performance.

Still another reason for the change in direction relates to the potential amount of criterion variance that is explainable by teacher performance. Bloom (1976) suggested that only approximately 20% of the variance in student achievement can be accounted for by the performance of a teacher, while the remaining 80% of the variance in student achievement is due to factors beyond the teacher's control. With such a small percentage of accountable variance due to the teacher, research effort is spent better on identifying those variables that influence the teacher selection process.

To identify those variables that influence the teacher selection process, researchers have focused on decisions made at the interview stage and at the screening stage. Decisions made at these different stages of the teacher selection process have been studied by using simulation techniques that evolved from private sector research. As a result of these research efforts several factors have been identified that influence selection decisions and that are unrelated to teaching performance. The most consistent finding of this type of teacher selection research has been the influence of chronological age of the teacher candidates at the screening stage of
the teacher selection process.

Chronological Age.

The initial stimulus for investigating chronological age of teacher candidates at the screening stage of the selection process for teacher candidates was a study by Johnson (1976). Johnson reported that of 104 Ohio administrators replying to a survey, 83% of those in the central office and 86% of those in junior and senior high schools expressed a preference for 20 to 25 year old teachers. Unfortunately this finding of age preference fails to explain why the administrators preferred young teacher candidates. It was hypothesized by some investigators that this preference for young teacher candidates was due to economic concerns of the administrators because young teacher candidates are usually less experienced and less expensive to employ than old teacher candidates.

The administrators' preference for young candidates was examined through a resume study by Young and Allison (1982). These investigators used resumes of hypothetical teacher candidates to examine the effect of teaching experience of teacher candidates on the screening decision of administrators. Experience was varied (none, three, or
eight years) to ascertain if the usual economic advantage of hiring young candidates could explain the administrator preference for young teachers detected by Johnson. Principals and superintendents were requested to screen the hypothetical candidates as if they were conducting a search within their school districts. The evaluation instrument for collecting screening data was comprised of an evaluation form with six areas to be evaluated.

In addition to teaching experience of teacher candidates, Young and Allison (1982) varied chronological age of teacher candidates (29 vs. 49) as well as administrative role (principal or superintendent evaluators) of the decision maker. The participants for their study were selected at random from 348 school districts located in four midwestern states. They found only chronological age of teacher candidates to be a significant factor, suggesting that certain characteristics administrators attribute to youth (not economic concerns) explain administrators' preference for young candidates.

Young and Voss (1986) expanded on Young and Allison's (1982) study in several ways. First, the restricted geographical sample used by Young and Allison was extended to a national sample of high school principals by Young and Voss. Second, the focal position under consideration
which was held constant by Young and Allison was varied by Young and Voss (physical education or chemistry). Third, Young and Voss varied the amount of information given about each applicant within the resume materials (brief or complete).

Chronological age of teacher candidates, focal position under consideration and the interaction of the two were found to be statistically significant (Young and Voss, 1986). Tests for simple effects showed that the old (49 years old) physical education candidates were rated significantly lower than the other candidate conditions (with Tukey's HSD=.29, p<.05). This finding suggests a disparate impact for old physical education candidates, and this impact was not influenced by the amount of information about teacher candidates. In their conclusion, Young and Voss (1986) noted that a limitation of their study was that one administrator evaluated one resume condition as opposed to having one administrator evaluating more than one resume condition.

A study similar to Young and Voss (1986) manipulated the quality [2.68 vs. 3.5 undergraduate grade point average (G.P.A.)] of candidate stimuli, the chronological age of teacher candidates, and focal position under consideration (Young and McMurray, 1986). Young and McMurray found the quality of candidate stimuli to
interact with focal position under consideration and with chronological age of the hypothetical teacher candidates. A disparate impact was shown for old chemistry candidates with a low undergraduate grade point average because undergraduate grade point average was given a different weight for old chemistry candidates then for old physical education candidates.

This disparate impact was hypothesized to be due to the older candidates receiving less recent training and suffering from skill obsolescence (Young and Joseph, 1987). Skill obsolescence of teacher candidates (1 vs. 8 years since graduation) was manipulated with resumes in a study by Young and Joseph (1987). They used a 2x2x2x2 factorial design to examine the effects of skill obsolescence of teacher candidates (degree earned, one year ago vs. eight years ago), quality of information about teacher candidates (2.68 G.P.A. vs. 3.50 G.P.A.), focal position under consideration for teacher candidates (physical education vs. chemistry), and chronological age of teacher candidates (29 vs. 49) on screening decisions made by high school principals. Again, interactions made interpretation of their findings complex; however, old physical education candidates with a low undergraduate grade point average were assessed lower than their young counterparts.
Chronological age of teacher candidates (29, 40, and 49 years old), gender of teacher candidates, and instructional level of the focal position (K-6 vs 9-12) were examined in a study by Young and Schmidt (1987). The chronological age of teacher candidates was found to interact with the gender of teacher candidates. Young females were evaluated more positively at the screening stage of the teacher selection process than old females, and old male teacher candidates were evaluated slightly higher than for old female candidates and young male candidates. This implication suggests aging may be a male perogative. The finding involving sex as a factor influencing educational administrators' screening decisions has received mixed support in the literature.

Only three studies have been found which relate the effect of an individual's gender on the decisions made by educational administrators. Researchers found the gender of individuals influenced the decisions made by educational administrators for a variety of job opportunities (i.e., a promotion or sabbatical) (Frasher, Frasher, and Wims, 1982). These investigators varied gender through resume type data using an "in basket" simulation. In the second study, however, Wallich (1984) failed to find any significant main effect or interaction (age X sex) effect for the sex of hypothetical teacher
candidates for a high school social studies position. The researcher in the second study used resume type data to manipulate the gender and chronological age of hypothetical teacher candidates in much the same way as the previously described studies by Young and various second authors.

Results from these microanalytic studies addressing teacher selection at the screening stage of the teacher selection process have increased the general knowledge about teacher selection. In addition to the general increase in knowledge about the screening stage of the teacher selection process, these findings have potential legal implications. Both old teacher candidates and female teacher candidates are afforded certain legislative protection from discrimination.

Legal Implications

Employee selection has been an administrative procedure that has attracted the interest of Federal and state legislators. Legislators have expressed concern about selection because certain groups of individuals are underrepresented in specific areas of employment. To capture their concerns and to provide a means of enforcing their concerns, legislators have passed specific acts both
at the federal and at the state level that pertain to employee selection.

One federal act pertaining to employee selection is the Age Discrimination in Employment Act (1973). The thrust of this act is to provide protection from discrimination in employment to older individuals between the ages of 40 years and 70 years. These persons are labeled by the Age Discrimination in Employment Act as protected class persons. This act makes it illegal to discriminate on the basis of age in employment decisions if age is not a bona fide occupational qualification (BFOQ) for the focal position under consideration.

Title VII of the Civil Rights Act (1964) identifies and labels still another group of individuals as protected class persons. According to Title VII of the Civil Rights Act, females are protected class persons. Consequently, employers are forbidden to discriminate against females on the basis of sex unless sex is a BFOQ for the focal position under consideration.

To exercise their rights as protected class persons, older individuals and females must provide only prima facia evidence of discrimination on the basis of protected class status. "Prima facia" evidence can be established
either by the doctrine of disparate treatment or by the doctrine of disparate impact (Young and Ryerson, 1986, p.2). The former pertains to intentions of the employer to discriminate, while the latter pertains to the actions of the employer which have a discriminatory effect.

An example of the employers' intention to discriminate on the basis of protected class status is illustrated by Johnson's (1976) finding. Johnson asked central office administrators and building level principals what type of teacher candidate they preferred. These employers admitted openly that they preferred to employ teachers who were less than 30 years of age. Given this preference and a hiring record that reflects fewer teachers over 40 years of age than the relevant labor market, then these data would establish prima facia evidence of discrimination as required by legislation.

Other findings from the resume studies examining the influence of chronological age of teacher candidates illustrate how the actions of employers can be used to establish prima facia evidence of discrimination on the basis of age. In these studies public school superintendents and high school principals were asked to screen the resumes of teachers for a vacant focal position. Administrators unaware of the age manipulation rated certain individuals over 40 years of age less
favorably than certain individuals under 30 years of age. Their action, as translated via the ratings, suggests prima facia evidence of age discrimination.

Selection Issues and Advancements

A review of existing selection literature suggests that the intentions and the actions of public school administrators may have an impact on certain groups of protected class individuals at the screening stage of the teacher selection process. Almost all of the teacher selection research to date has approached the study of screening decisions made by public school administrators by having the public school administrators evaluate the credentials of a single hypothetical candidate. Specific characteristics such as chronological age of teacher candidates and sex of teacher candidates have been manipulated through the construction of resume data. Evaluations of these hypothetical candidates provided by administrators within each resume condition have been pooled, and the pooled evaluations of hypothetical candidates have been contrasted with the evaluations of hypothetical candidates obtained from other resume conditions.
These types of experimental designs assume that public school administrators rely on the absolute qualities of candidates when making an evaluation at the screening stage of the selection process. However, other studies suggest that evaluators taking part in selection research may base their evaluations of candidates on factors independent of a candidate's absolute qualifications. In fact, certain studies have held the qualifications of candidates constant and have shown that evaluations can be manipulated through the order of information about candidates.

For example, Peters and Terborg (1975) used resume type data to develop a hypothetical candidate using favorable, unfavorable, and neutral information. One group was asked to evaluate the applicant as described by a F-F-F-U-N-U-N-U sequence of information. Another group of evaluators was asked to evaluate the same applicant as described by a U-U-U-F-N-F-N-F sequence of information. They found that receiving favorable information about an applicant first in the evaluation process yielded ratings that portrayed the applicant as being better able to get along with coworkers and as being more employable.

In addition to the order of information about candidates, other research suggests that evaluations of candidates are influenced both by the selection ratio and
by the pool of applicants. Webster (1964) held the qualifications of candidates constant and manipulated the selection ratio. He found that as the number of vacant positions increased relative to the number of candidates, evaluations of equally qualified candidates were less favorable than when the number of vacant positions decreased relative to the number of candidates.

With respect to the pool of applicants for a vacant position Wexley, Yuki, Kovacs, and Sanders (1972) found that by holding the selection ratio constant and by manipulating the quality of applicants, evaluations provided by assessors could be influenced. These investigators had each evaluator assess more than one applicant. In some instances the applicants preceding the target candidate were depicted with unfavorable credentials, while in other instances the applicants preceding the target candidate were depicted with favorable credentials. They found that over 80% of the variance in ratings provided for the target applicant could be explained by the favorability of the credentials of the preceding applicants.

Given the findings that factors other than the absolute qualifications of a candidate can influence the evaluations of a candidate, these findings have an important implication for teacher selection research.
This implication concerns the external validity of previous research addressing the screening stage of the teacher selection process. Existing research addressing the screening stage of the teacher selection process has been to date conducted via between subjects designs. These designs required each administrator taking part in the research to evaluate only a single candidate.

However, within the field setting when administrators screen for a vacant focal position, they have in most instances more than one candidate to evaluate. Consequently, the evaluations in the field setting may be more of a function of the candidate pool than the absolute qualities of the candidates such as the chronological age of teacher candidates or sex of the teacher candidates.

To determine if chronological age of teacher candidates, sex of teacher candidates, and undergraduate grade point average of teacher candidates can influence the evaluations of administrators at the screening stage of the selection is the focus of this study. These factors have been found to influence evaluations in a between subjects design, but the literature is void of studies examining these factors in a within subjects design.

Arvey (1979) makes a similar important point by suggesting that there needs to be more within subjects studies conducted. Two reasons are given for this need.
The first and most important reason is that such studies are more realistic than between subjects design studies. They are closer to actual selection decisions as made in the field setting where a comparative stimulus is the rule and not the exception. In addition, a second reason to use this type of design is the increase in degrees of freedom and in power this type of study provides as compared to a between subjects design.
Methods

Subjects

The population under consideration in this study is all high school principals employed by public school districts located within the contiguous United States. From this population, a total of 288 secondary school principals (grades 9-12) were selected at random. Names and addresses of those selected were obtained from a commercial list produced by a marketing agency (Market Data Retrieval, a Connecticut company).

Procedures

Principals (N=288) selected to take part in this study were contacted by mail. Each principal received by mail a package of information. Contents of the information package consisted of a cover letter (appendix A), a biographical instrument (appendix B), a position description (appendix C), rating forms (described later), resumes and references for teacher candidates (described
later), and a stamped preaddressed envelope for returning the requested information.

The cover letter contained information stressing the importance of teacher selection in the field setting and requesting participation of principals in this study. In addition, specific directions for taking part in this study were provided by the cover letter. In return for participating, as stated in the cover letter, principals were assured anonymity and were promised a summary of conclusions after the study has been completed.

The biographical data sheet was designed to obtain descriptive information about the principal, the school setting, and the selection practices of the district. Principals were asked to provide data on the biographical instrument (a data form) concerning their administrative experience, their chronological age, and their gender. Information was requested on the biographical data form for the enrollment of the school and for the geographical setting of the school. Data concerning the use of resumes for screening candidates and the number of vacant positions filled by principals within their buildings during the past year were requested also on the biographical data form.

Each information package received by principals included a focal position description. The focal position
description was enclosed to provide uniform information about the focal position under consideration and to add realism to the simulated teacher selection task (Palmer, 1971; Wiener and Schneiderman, 1974). Major features of the focal position description were the desired teacher behaviors, a general description of the position, extracurricular information, and the immediate supervisor.

**Independent Variables**

Each principal received within the information package four different resumes (appendices D-1 through D-8). Each resume reflected a hypothetical teacher candidate to be screened for the focal position under consideration. These resumes contained information about candidates that is similar to the information contained about candidates in college placement files. Certain aspects of the candidate information were similar and held constant for all candidates, and certain aspects of the candidate information were different and systematically manipulated across resumes.

All candidates were depicted via resume information as having equivalent teaching experiences, education degrees, appropriate certification, and extracurricular experiences. References (appendices E-1 through E-4) for
candidates were similar both in tone and in length. Each letter of reference was attached to the different resumes the same number of times to eliminate any confounding associated with any particular reference.

Certain aspects of the candidate information were used to operationalize the independent variables under consideration. Sex of the candidate (female vs. male) and chronological age of the candidate (29 vs. 49) were varied systematically within the demographic sections of the resumes. Undergraduate grade point average (G.P.A.) of the candidate (2.68 vs. 3.50) was varied systematically within the educational obtainment section of the resume. These grade point averages reflect the average (3.09) of several studies which reported mean grade point averages for education majors (as computed by McMurray, 1984). To obtain a low G.P.A. and high G.P.A., standard deviations (N=3) were averaged to yield an average standard deviation of .41. The average standard deviation was subtracted from the 3.09 to yield a low G.P.A. of 2.68 and was added to 3.09 to yield a high G.P.A. of 3.50 (McMurray, 1984).

Dependent Variable

Principals were requested to evaluate each candidate for the focal position under consideration. Evaluations
were conducted on the candidate evaluation form (Appendix F). This form contained six criteria: (1) curricular knowledge; (2) communication skills; (3) discipline ability; (4) classroom management; (5) growth potential; and (6) overall school contribution. Each criterion was rated on a 1-4 Likert type scale where a higher rating indicates a more favorable response.

Ratings of candidates on the evaluation form were used to compute a composite score for each candidate. Each criterion was given equal weight, and the ratings were added to produce a composite score for each candidate. Composite scores for candidates were used as the dependent variable.

Other research has addressed the psychometric properties of these criteria and the composite score computed for candidates. Several studies using these criteria and the same method for computing the composite score have reported coefficients of internal consistency of .79 (Young and Voss, 1986), of .83 (Young and McMurray, 1986), and of .88 (Young and Joseph, 1987). Wallich (1984) reported a coefficient of stability of .88 over a three week period with a group of educational administration students enrolled in graduate classes at a large midwestern university.

In addition to the reliability estimates, another
study addressed the issue of validity. Young and Pounder (1985) correlated the ratings on each criterion with administrator probability of offering a candidate employment. They found that the correlations ranged from .51 to .83.

Design

Each principal received four resumes which contained information similar to information found in the typical college credential file. A between-within design was used, with sex of candidate being the between subjects factor and resume condition being the within factor. Sequence effects were controlled through a balanced order of the resume conditions. Each resume condition (A-old with low G.P.A.; B-old with high G.P.A.; C-young with low G.P.A.; and D-young with high G.P.A.) followed each of the other resume conditions an equal number of times. The four sequences were as follows: (1st) ABCD; (2nd) CADB; (3rd) BDAC; and (4th) DCBA.

With each resume, a reference was included. Four references of similar tone and quality were used. The order in which a reference was matched with any resume was also balanced. The final result was 16 different orders of a resume and a reference which controlled for contrast,
primacy, and recency effects.

Hypotheses and Analysis.

Previous teacher selection research addressing decisions made at the screening stage have not used a comparative design; therefore, planned apriori comparisons are not used in this study. The first null hypothesis is that resume condition will not effect principals' ratings of hypothetical teacher candidates when decisions are made in a comparative situation. The second null hypothesis is that female chemistry teachers will be evaluated the same as male chemistry teachers in a between subjects factor. Resume condition and sex of candidates will also be assessed for a significant interaction.

The analysis will begin with an analysis of variance (ANOVA) one between factor and one within factor model. Main effects of sex of teacher candidate (the between factor), and of resume condition (the within factor), as well as the interaction of these effects (sex of candidate and resume condition) will be tested at a .05 Alpha level.
Results

The results of this study are presented in three sections: (1) demographic data; (2) descriptive data for the independent and dependent variables; and (3) inferential statistics.

Demographic Data

A total of 118 public senior high school principals returned the requested information for demographic data. Of these 118 senior high school principals returning the information, only 104 of the principals completed the entire information requested on the evaluation forms. This rate of response for the 104 principals provides sufficient statistical power for the detection of a medium-sized effect as described by Cohen (1977). The return rate for usable responses was 36%.

Demographic data include the following information: (a) approximate student population of the school; (b) geographic setting of the school [urban, suburban, or rural]; (c) use of resumes to screen applicants in the
teacher hiring process; (d) approximate number of teachers hired last year; (e) administrative experience of the high school principal; (f) chronological age of the high school principal; and (g) gender of the high school principal. A breakdown of these data is presented in Table 1. An examination of these data indicates a wide range with regard to the approximate number of students in the schools, to the school setting, to the chronological age of the principal, to the years of administrative experience of the principal, and to the number of teachers hired in a year.
Table 1

Demographic Data of Participants

<table>
<thead>
<tr>
<th>Information (N)</th>
<th>Mean (SD) a</th>
<th>Median</th>
<th>Mode(s)</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Population (103)b</td>
<td>810 (589)</td>
<td>600</td>
<td>300, 450</td>
<td>75-2400</td>
</tr>
<tr>
<td>Number of Teachers hired (103)b</td>
<td>4 (3.4)</td>
<td>3</td>
<td>3</td>
<td>0-25</td>
</tr>
<tr>
<td>Experience of Administrator (103)b</td>
<td>13.5 (6.9)</td>
<td>12</td>
<td>10, 13</td>
<td>2-32</td>
</tr>
<tr>
<td>Age of Administrator (103)b</td>
<td>47 (7)</td>
<td>47</td>
<td>44</td>
<td>33-65</td>
</tr>
<tr>
<td>School Setting</td>
<td>103 b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suburban</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>54</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resumes used</td>
<td>103 b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender of administrator</td>
<td>103 b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>96</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Standard Deviations in parenthesis

b. 1 respondent did not provide this information
There is a wide range in the size of the student population in the schools of the principals who responded to the information requested. The smallest school contains 75 students while the largest school contains 2400 students. Other statistics for student enrollments are as follow: a mean of 810; a standard deviation of 589; a median of 600; and four modal sizes of 300, 450, 1000, & 1500. The geographic setting of these schools is skewed toward a rural setting. Approximately half of the schools are in the rural setting, and the other half of the schools are either in the urban setting or in the suburban setting.

The chronological age of principals ranges from 33 years of age to 65 years of age. The mean and median chronological age of principals is 47 years with a standard deviation of 7 years. The mode for the chronological age of principals is 44 years with eight individuals reporting this chronological age. Administrative experience of these principals ranges from 2 years to 33 years with a mean of 13.5 years and a standard deviation of 6.9. There is a bimodal distribution of the administrative experience with eight principals reporting 10 years of experience and eight other principals reporting 13 years of experience.
The mean number of teachers hired by those principals responding was 4. The median and modal number of teachers hired during the past year was 3 with 23 principals reporting hiring 3 teachers. Nearly all administrators indicated using resumes to screen teacher applicants in the teacher selection process (approximately 96%). This finding is in agreement with the high percentages reported by Young and McMurray (1986); and Young and Voss (1986). The gender of principals is skewed toward males (approximately 93% male). These data, like other data, suggest that high school principals are mostly male.

Descriptive Data

The candidate evaluation form contains six criteria: (1) curricular knowledge; (2) communication skills; (3) discipline ability; (4) classroom management; (5) growth potential; and (6) overall school contribution. Each criterion was rated on a 1-4 Likert type scale where a higher rating indicates a more favorable response. Principals were requested to evaluate (using the candidate evaluation forms) each hypothetical teacher candidate as if they were screening for the focal position depicted. Evaluations provided by the principal were considered
usable if all six of the items on the four candidate evaluation forms were completed, and all of the evaluations were interpretable.

The frequencies, means, and standard deviations of ratings principals provided for hypothetical candidates on the evaluation forms are shown in Table 2. Principals rated the hypothetical teacher candidates highest on overall contribution to the school (3.18) and lowest on discipline ability (2.99). The criterion revealing the most variability among principals was a candidate's growth potential (S.D.=.45).
Table 2

Frequencies, Means, and Standard Deviations (S.D.)

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curricular Knowledge</td>
<td>0</td>
<td>36</td>
<td>223</td>
<td>157</td>
<td>3.16</td>
<td>.35</td>
</tr>
<tr>
<td>Communication Skills</td>
<td>1</td>
<td>52</td>
<td>269</td>
<td>94</td>
<td>3.10</td>
<td>.37</td>
</tr>
<tr>
<td>Overall School Contribution</td>
<td>0</td>
<td>49</td>
<td>242</td>
<td>125</td>
<td>3.18</td>
<td>.41</td>
</tr>
<tr>
<td>Discipline Ability</td>
<td>4</td>
<td>60</td>
<td>289</td>
<td>63</td>
<td>2.99</td>
<td>.38</td>
</tr>
<tr>
<td>Classroom Management</td>
<td>3</td>
<td>62</td>
<td>263</td>
<td>88</td>
<td>3.05</td>
<td>.41</td>
</tr>
<tr>
<td>Growth Potential</td>
<td>5</td>
<td>68</td>
<td>237</td>
<td>106</td>
<td>3.07</td>
<td>.45</td>
</tr>
</tbody>
</table>
Ratings provided by principals for each hypothetical teacher candidate were used to compute a composite score. The composite score contained the ratings for every candidate on each criterion. Composite scores for the candidates averaged 18.54 and ranged from a low of 9 to a high of 24.

contained in Table 3 are the intercorrelations among each criterion and the corrected item-total correlations of the overall composite and each criterion (with the individual criterion involved in the correlation removed from the composite). An examination of the intercorrelations shown in Table 3 reveals that each criterion shares substantial variance (p>.05) with all other criteria. The part-whole correlations between the composite score and each criterion reveal that each criterion shares substantial variance with the composite scores.
Table 3

Criteria Correlations and Intercorrelations

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>COMP</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>-</td>
<td>.58</td>
<td>-</td>
<td>.53</td>
<td>.66</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>B</td>
<td>.58</td>
<td>-</td>
<td>.53</td>
<td>.66</td>
<td>-</td>
<td>.51</td>
<td>.73</td>
</tr>
<tr>
<td>C</td>
<td>.53</td>
<td>.66</td>
<td>-</td>
<td>.51</td>
<td>.73</td>
<td>.60</td>
<td>-</td>
</tr>
<tr>
<td>D</td>
<td>.51</td>
<td>.73</td>
<td>.60</td>
<td>-</td>
<td>.57</td>
<td>.71</td>
<td>.70</td>
</tr>
<tr>
<td>E</td>
<td>.57</td>
<td>.71</td>
<td>.70</td>
<td>.76</td>
<td>-</td>
<td>.28</td>
<td>*</td>
</tr>
<tr>
<td>F</td>
<td>.28</td>
<td>.45</td>
<td>.50</td>
<td>.39</td>
<td>.41</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>COMP</td>
<td>.60</td>
<td>.79</td>
<td>.76</td>
<td>.75</td>
<td>.80</td>
<td>.48</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>.44</td>
<td>.57</td>
<td>.55</td>
<td>.53</td>
<td>.63</td>
<td>.53</td>
<td>.68</td>
</tr>
</tbody>
</table>

*P=.002
ALL Other P Values >.001

a. corrected item-total correlations

A - Curricular Knowledge
B - Communication Skills
C - Overall School Contribution
D - Discipline Ability
E - Classroom Management
F - Growth Potential
G - Candidates' overall probability of receiving an interview
An internal consistency coefficient was computed for the composite score comprised of these six criteria. The Cronbach alpha coefficient of .88 was obtained, and this coefficient provides strong support for the use of a composite score rather than individual criterion scores to reflect the evaluation of the hypothetical teacher candidates. In previous teacher selection studies, as in this study, the composite scores for candidates are used as the dependent variable.

In addition to providing a reliability estimate for the composite score, an assessment was made of the covariation of the composite score with an overall rating of the probability of the candidate receiving an interview. This latter rating ranged from a 1 (for a poor chance of receiving an interview) to a 10 (for an excellent chance of receiving an interview). The correlations of these six criteria (A-F, Table 3) and the principals' rating of the candidates' overall probability of receiving an interview (G, Table 3) ranged from .44 to .63 (see the bottom line of Table 3).

**Inferential Statistics**

The major analysis in this study is based on a between-within analysis of variance (ANOVA) using a fixed
effects model. Main effects due to sex of hypothetical teacher candidate (the between factor), resume condition of hypothetical teacher candidate (the within factor), and to the interaction of sex of the hypothetical teacher candidate and resume condition are assessed for statistical significance. An alpha of .05 is used as the criterion for accepting or rejecting the null hypotheses in all instances.

**Hypotheses and Analysis**

The first null hypothesis is that resume condition will not influence ratings of principals when ratings are made in a comparative situation. The second null hypothesis is that female chemistry teachers will be evaluated the same as male chemistry teachers. The third null hypothesis is that resume condition and gender of the hypothetical teacher candidate will not interact in any way to influence the principals' ratings. The means and standard deviations for composite scores are presented in Table 4.
Table 4

Composite Means and Standard Deviations (S.D.)

<table>
<thead>
<tr>
<th>Sex</th>
<th>Resume Condition</th>
<th>Mean</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>young high GPA (#4)</td>
<td>19.12</td>
<td>2.76</td>
</tr>
<tr>
<td>Male</td>
<td>old high GPA (#2)</td>
<td>18.81</td>
<td>2.72</td>
</tr>
<tr>
<td>Male</td>
<td>young low GPA (#3)</td>
<td>17.73</td>
<td>3.21</td>
</tr>
<tr>
<td>Male</td>
<td>old low GPA (#1)</td>
<td>17.87</td>
<td>2.80</td>
</tr>
<tr>
<td>Female</td>
<td>young high GPA (#4)</td>
<td>19.25</td>
<td>2.58</td>
</tr>
<tr>
<td>Female</td>
<td>old high GPA (#2)</td>
<td>18.92</td>
<td>2.92</td>
</tr>
<tr>
<td>Female</td>
<td>young low GPA (#3)</td>
<td>18.58</td>
<td>2.55</td>
</tr>
<tr>
<td>Female</td>
<td>old low GPA (#1)</td>
<td>18.04</td>
<td>2.70</td>
</tr>
<tr>
<td>Total</td>
<td>young high GPA (#4)</td>
<td>19.18</td>
<td>2.66</td>
</tr>
<tr>
<td>Total</td>
<td>old high GPA (#2)</td>
<td>18.87</td>
<td>2.81</td>
</tr>
<tr>
<td>Total</td>
<td>young low GPA (#3)</td>
<td>18.15</td>
<td>2.91</td>
</tr>
<tr>
<td>Total</td>
<td>old low GPA (#1)</td>
<td>17.95</td>
<td>2.74</td>
</tr>
</tbody>
</table>

Data contained in Table 4 were submitted to an analysis of variance. Results of the analysis of variance are found in Table 5. These results indicate that the null hypotheses should be accepted for the main effect of the sex of teacher candidates and for the interaction involving sex of the teacher candidate and resume condition.
Table 5

Analysis of Variance for Principals' Composite Ratings

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Between</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of Candidate</td>
<td>1</td>
<td>10.47</td>
<td>10.47</td>
<td>.74</td>
</tr>
<tr>
<td>Evaluator/Sex</td>
<td>102</td>
<td>1435.41</td>
<td>14.07</td>
<td></td>
</tr>
<tr>
<td><strong>Within</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resume Condition (RC)</td>
<td>3</td>
<td>105.44</td>
<td>35.15</td>
<td>6.21*</td>
</tr>
<tr>
<td>Sex X RC</td>
<td>3</td>
<td>9.74</td>
<td>3.24</td>
<td>.57</td>
</tr>
<tr>
<td>RC X Evaluator/Sex</td>
<td>306</td>
<td>1732.32</td>
<td>5.66</td>
<td></td>
</tr>
</tbody>
</table>

*p<.05
On the other hand, data contained in Table 5 reveal a statistically significant effect for resume condition. Because of the statistically significant effect for resume condition, a post-hoc procedure was used to test all possible pairwise comparisons among the appropriate means. The specific post-hoc procedure used was Tukey's Honest Significant Difference (HSD), a test which controls familywise error rate.

Using Tukey's Honest Significant Difference test, a familywise error rate of .05 for all possible comparisons (N=6) was maintained. These comparisons are found in Table 6. Table 6 contains means for each resume condition.
Table 6

Means and Groupings of Resume Conditions

<table>
<thead>
<tr>
<th>Resume Condition</th>
<th>Mean</th>
<th>HSD* Grouping</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young High GPA</td>
<td>19.1827</td>
<td>A</td>
</tr>
<tr>
<td>Old High GPA</td>
<td>18.8654</td>
<td>A   B</td>
</tr>
<tr>
<td>Young Low GPA</td>
<td>18.1538</td>
<td>C   B</td>
</tr>
<tr>
<td>Old Low GPA</td>
<td>17.9519</td>
<td>C</td>
</tr>
</tbody>
</table>

*Means with the same letter are not significantly different.
Of the six possible pairwise comparisons, three were found to be statistically different and three failed to be statistically different. Comparisons yielding statistically significant differences are as follows: (1) the young (29 years old) teacher candidate with a high undergraduate G.P.A. (3.50) was rated higher than the young teacher candidate with a low G.P.A. (2.68); (2) the old (49 years old) teacher candidate with a high undergraduate G.P.A. (3.50) was rated higher than the old teacher candidate with a low G.P.A. (2.68); (3) the young teacher candidate with a high G.P.A. was rated higher than the old teacher candidate with a low G.P.A.
Discussion and Conclusion

Educational researchers have followed the pattern of selection research initiated by industrial and organizational psychologists. This research pattern evolved from a macroanalytic perspective to a microanalytic perspective. Macroanalytic research was the predominate paradigm used by industrial and organizational psychologists for early studies conducted in the private business sector. These early macroanalytic studies sought to identify valid predictors of job performance. Results from these early macroanalytic studies addressing employee selection were disappointing in many instances. In fact, most macroanalytic studies failed to detect any relationship between predictors (the interview was the most common predictor studied) and performance criteria.

Given these disappointing findings, Mayfield (1964) suggested the ultimate goal of validity be postponed until the selection process could be better understood. To better understand the selection process, Mayfield recommended that effort be devoted to identifying the factors that influence selection decisions. This
recommendation by Mayfield changed the direction of selection research from a macroanalytic perspective to a microanalytic perspective.

The goal of microanalytic research is to provide an understanding of the selection process by breaking the selection process into smaller components for investigation. To accomplish this goal of understanding the selection process, several different research techniques have been used. These techniques include simulation, video, and resume information.

The most efficient technique (with respect to time and effort) used by investigators to study the selection process has been labeled the resume technique. Using this technique, resumes of hypothetical applicants are created by investigators and are evaluated by participants taking part in selection research. Specific characteristics of applicants are manipulated through the construction of resumes while specific characteristics of participants are manipulated through subject selection procedures.

As a result of using the different experimental techniques to study the selection process, several factors were identified that influenced decision making within the selection process. These results from microanalytic studies were assumed to be generalizable to the selection process in general and to interviews specifically. These
assumptions were challenged, however, from two perspectives: (1) participants and (2) method bias.

The use of student participants versus professional interviewers did not produce any substantial differences in the results of selection research (Berstein, Hakel, and Harlan, 1975; Dipboye, Fromkin, and Wibach, 1975; and McGovern, Jones, and Morris, 1979). However, the generalizability of results obtained with specific experimental methods was more successfully challenged. To examine the issue of method specific results, decisions made on the basis of interview data were compared both to the decisions made on the basis of video data (Imada and Hakel, 1977) and to decisions made on the basis of resume data (Gorman, Clover, and Doherty, 1978). Results in both instances were different from decisions made on the basis of interview data. These findings suggest that researchers should generalize their results only to decisions in the employment setting that are based on like method of applicant stimuli. That is, decisions made on the basis of interview data should be generalizable only to the interview situation, while decisions made on the basis of resume data should be generalizable only to screening decisions.
Teacher Selection

Teacher selection research has followed the same pattern as research in the private sector with early teacher selection studies using a macroanalytic approach, and more recent teacher selection studies using a microanalytic approach. Macroanalytic teacher selection research failed to achieve the desired goal of identifying valid predictors (see Eissey, 1967; Ryans, 1951; Schalock, 1979). These disappointing results from macroanalytic teacher selection studies led some educational researchers to suggest breaking the process into smaller, more identifiable and manageable units of information for investigation using the microanalytic approach as suggested by Mayfield (1964).

Recent teacher selection research has followed the microanalytic perspective. The teacher selection process has been broken down into units such as the screening stage or the interview stage for investigation. Specific variables have been identified that influence screening decisions and interview decisions within the teacher selection process.

The variable receiving the most attention within the microanalytic research addressing teacher selection is the chronological age of teacher candidates. Young teacher
candidates have been found to be evaluated systematically higher than old teachers at the screening stage of the teacher selection process. This finding has been found to exist regardless of certain other variables.

For example, some young teacher candidates have been found to be preferred over some old teacher candidates regardless of teaching experience (Young and Allison, 1982), of quantity of information describing candidates (Young and McMurray, 1986; Young and Voss, 1986), of instructional level of candidates (Young and Schmidt, 1987), of quality of information describing candidates (Young and Joseph, 1987; Young and McMurray, 1986), of skill obsolescence of candidates (Young and Joseph, 1987), and of gender of candidates (Young and Schmidt, 1987). These findings are based on studies that required each evaluator to evaluate only one hypothetical teacher candidate. Consequently, these findings may fail to possess external validity because evaluators in the field setting evaluate more than one teacher candidate for a vacant position.

To expand the current knowledge about teacher selection and to assess partially the external validity of existing microanalytic teacher selection research the study reported herein was conducted. The study reported herein builds on existing research by examining some of
the same variables as other studies and expands current knowledge by using a different experimental design that requires each participant to evaluate more than one candidate. The specific variables manipulated by resumes are sex of the teacher candidate (in a between subjects factor) and resume condition [comprised of a within subjects factor with four levels as follows: (1) 49 year old candidate with a 2.68 grade point average, (2) a 29 year old candidate with a 2.68 grade point average, (3) a 49 year old candidate with a 3.50 grade point average, and (4) a 29 year old candidate with a 3.50 grade point average].

To assess the influence of the sex of teacher candidates, principals evaluated hypothetical teacher candidates depicted either as a female or as a male for the same focal position. An analysis of the evaluations principals provided female and male hypothetical teacher candidates revealed that the evaluations were similar for both female and male candidates. Furthermore, the gender of a hypothetical teacher candidate was not found to interact with resume condition (see above).

The lack of differences in the evaluations of female and male candidates suggested by these data agrees with findings of some studies and disagrees with findings of other studies. These findings agree with those of Wallich
(1984). Wallich manipulated the gender of teacher candidates for a social studies position and found that principals selected at random from the United States evaluate both female and male candidates similarly for the social studies position.

On the other hand, Young and Schmidt (1988) detected an interaction between the gender of hypothetical teacher candidates and chronological age of teacher candidates. These investigators reported that young female teacher candidates (29 years of age) were evaluated higher than old female teacher candidates (49 years of age). However, young male candidates were not evaluated any differently from old male candidates.

Although the methodology used both by Wallich (1984) and by Young and Schmidt (1988) was similar to the methodology used in this study, there exist certain differences that may explain the disagreement among the studies. One major difference among all three studies was the focal teaching position under consideration. Wallich used a social studies position, Young and Schmidt used a physical education position, and the focal position in this study was chemistry. Perhaps these different focal positions possessed different demand characteristics that produced a differential influence on the ratings provided by principals for the hypothetical teacher candidates.
Another difference between this study and studies conducted by Wallich (1984) and Young and Schmidt (1988) is the type of experimental design employed. Wallich as well as Young and Schmidt used a between subjects design that required each principal to evaluate only one hypothetical teacher candidate for each vacant position. The study reported herein required each principal to evaluate four hypothetical teacher candidates for the same focal position. Consequently, because the focal position under consideration and the number of applicants evaluated for the specific focal position is different across studies, it is impossible to identify clearly why these findings differ from existing findings.

To assess the influence of evaluating several applicants for the focal position under consideration, each principal taking part in this study evaluated four hypothetical teacher candidates. An analysis of the ratings principals provided for the four hypothetical teacher candidates revealed a statistically significant main effect for the resume condition. The resume conditions differed with respect to chronological age of teacher candidates (29 years of age versus 49 years of age) and to the undergraduate grade point average of teacher candidates (2.68 G.P.A. versus 3.50 G.P.A.).

A post-hoc analysis of this main effect for resume
conditions involves making six pairwise comparisons among the different means. Two of the comparisons involve chronological age as a non-common condition, two other comparisons involve undergraduate grade point average as a non-common condition, and two comparisons involve the cross product of chronological age of teacher candidates and the undergraduate grade point average of teacher candidates. Of these six possible comparisons, three were found to be statistically significant, and three failed to reach statistical significance at an alpha of .05 level.

One statistical difference detected in this study is that young teacher candidates (29 years of age) with a high undergraduate grade point average (3.50 G.P.A.) are rated higher than young teacher candidates with a low undergraduate grade point average (2.68). This finding suggests that principals evaluating 29 year old chemistry candidates place an emphasis on the undergraduate grade point average of teacher candidates. The emphasis on undergraduate grade point average agrees with the findings reported by Young and Joseph (1987) as well as the findings reported by Young and McMurray (1986). That is, undergraduate grade point average appears to have an influence both when hypothetical teacher candidates are evaluated singly or when hypothetical teacher candidates are evaluated in a group.
Another statistical difference detected for these data is that old teacher candidates (49 years of age) with a high grade point average are rated higher than old teacher candidates with a low grade point average. These results agree with the results obtained by Young and Joseph (1987) as well as with the results obtained by Young and McMurray (1986), both of whom used only a single administrator to evaluate a single applicant. Again, administrators evaluating candidates of like age give a preference for those with a higher undergraduate grade point average regardless of whether a single candidate or multiple candidates are evaluated.

Still another statistical difference detected among the pairwise comparisons indicates that a young teacher candidate with a high undergraduate grade point average is rated higher than a old teacher candidate with a low grade point average. However, the reverse situation was not found for an old teacher candidate with a high grade point average and a young teacher candidate with a low grade point average. Because the reverse situation was not detected, these data suggest that an indirect disparate impact for older teacher candidates with a low undergraduate grade point average exists. This last finding agrees with the findings of Young and McMurray (1986).
The failure of this study to provide data indicating any direct disparate impact from the influence of chronological age could be due to several plausible explanations. One plausible explanation is that perhaps the respondents, in taking the activity seriously, read all the materials very carefully and detected the purposeful manipulations of chronological age and undergraduate grade point average. This detection may have caused principals to give the undergraduate G.P.A. a greater weight, and then subconsciously or subliminally to give the more subtle indirect rating effect due to the candidates' chronological age.

A second explanation is that the respondents consciously gave higher ratings to young candidates. The respondents may have felt their ratings were justified because G.P.A. was given priority. According to this explanation a smaller effect size for chronological age would result. However, when chronological age is varied within a second more presumably important factor, such as undergraduate grade point average, the results could form a linear trend for candidates' ratings. The linear trend which could be expected is as follows: (1) old candidate with low G.P.A.; (2) young candidate with low G.P.A.; (3) old candidate with high G.P.A.; and (4) young candidate with high G.P.A.
To avoid the type of experimental influences outlined above, researchers may wish to include other manipulations or, in some fashion, further mask the manipulation of chronological age in a within subjects design to examine comparative decisions further. In addition to examining these experimental design questions, an analysis of what might result from the second explanation given above can be achieved with a trend analysis.

Along a different line, the different and more subtle impact detected in this study may be due to the changing of society. As lawsuits, court cases, and legal education become known and common, perhaps principals are attempting to avoid decisions which result in a disparate impact. If this is the case, then the next step for practitioners in improving teacher selection would be inservices about, and discussion of, the type of indirect disparate impact indicated by these data. More research utilizing a comparative design may help expand the knowledge base in this situation.

Collectively, these findings suggest that those studies utilizing a single administrator evaluating a single hypothetical teacher candidate may indeed have some external validity. Principals taking part in this study evaluated multiple candidates similar to principals taking part in other studies evaluating only a single candidate.
However, the disparate impact for older candidates detected in this study was not as direct as the impact for older candidates suggest by other studies (Young and Joseph, 1987; Young and McMurray, 1986).

Limitations

These results, however, must be interpreted within certain limitations. The first limitation is that all principals participated on a voluntary basis. Consequently, the findings of this study should not be generalized to those principals who did not respond to the request or those principals who would not have responded to the request if they had been given the opportunity to participate.

The respondents involved in this study were all public secondary school principals from the contiguous United States. Other administrators are often involved with teacher selection. The results of this study may have been different if administrators other than secondary principals had been used.

Another limitation of this study is the actual rate of response for principals. The response rate of principals in this study was lower than in other teacher selection studies not using a repeated measure design.
(comparative design). However, the time required for participation in this study exceeded the time requirement for participation in other microanalytic teacher selection studies by a considerable amount.

A fourth limitation of this study is the specific factors manipulated, specifically, chronological age and undergraduate grade point average (via resume condition of teacher candidate in a within subjects design) as well as gender of teacher candidate (via resume information in a between subjects design). If other factors were included (i.e., focal position under consideration, race of candidate, handicap status, etc.), the results may have been different.

Yet another limitation of this study is the criteria used to assess the hypothetical teacher candidates. Criteria used in this study have been used in other studies and have exhibited satisfactory psychometric properties. However, if different criteria for evaluating candidates had been used then these results may have been different.

Still another limitation is the factors held constant in this study. For example, focal position under consideration (chemistry) and instructional level of the focal position (high school) were held constant. If these factors had been manipulated then the results may have
been different from those obtained. Given these limitations, there are still several important implications of these results for old teacher candidates, employers of teachers, and researchers studying the screening stage of the teacher selection process.

Implications

There are two situations in which these findings have an implication for old candidates. The first situation is for an old candidate with a low undergraduate grade point average. Specifically, an old candidate with a below average undergraduate G.P.A. may wish to emphasize other aspects of resumes and other paper work prepared for potential employers. De-emphasizing or even avoiding such information as chronological age and undergraduate grade point average in paper credentials may, for these candidates, provide the greatest possibility of obtaining an interview.

While it might be argued that this implication is relevant for the young candidate with a low grade point average, it is definitely more important for an old candidate with a low G.P.A. for several reasons. The first reason is that chronological age would not need to be omitted or even de-emphasized for a young candidate.
If an impact exists for chronological age, then it is to the advantage of a young candidate. The other reason this implication is important for an old candidate is that a young candidate may need to de-emphasize a low grade point average only in situations where the applicant pool contains other young candidates with a high G.P.A. When the applicant pool contains old candidates with a high grade point average, these data indicated that an old candidate with a high G.P.A. will not be rated higher than a young candidate with a low G.P.A.

The second situation with a possible implication for the old candidate with a high undergraduate grade point average involves the comparison with a young candidate with a low G.P.A. (found not to be rated significantly higher with the Tukey's HSD test). The older individual may wish to inquire about an employers' policies on employment and, if possible, to inquire about the consideration given undergraduate grade point average for employment. This inquiry may accentuate or reinforce the weight given to grade point average. Perhaps greater emphasis on G.P.A. and on other positive traits as well as a de-emphasis or omission of chronological age will provide the old individual the best probability of surviving the screening stage of the teacher selection process.
An implication of these data for employers (the local school boards and their representatives) is that a subtle bias may be depriving school systems of potentially beneficial employees. Specifically, the subtle or indirect impact indicated by this study may result (in the field setting were decisions are made in a comparative situation) in screening out some old employees that are equally as capable as young employees (Young and Place, 1988). On the other hand, if a school board is totally convinced of the value of G.P.A. as a predictor of job performance, then they may be failing to screen out some young teacher candidates with low G.P.A.

School boards may also wish to review their policies to be sure there is a statement of nondiscriminatory intentions for employment practices. This type of written statement, although not entirely sufficient, is evidence of the good intentions of the school board, should a lawsuit arise. Administrator inservice may also be helpful in avoiding the indirect type of disparate impact indicated by these data.

In addition to implications for practitioners in the field, this study provides several very important implications for future researchers studying screening decisions in the teacher selection process. This study does partially support earlier studies indicating effects
of chronological age and of undergraduate grade point average as factors influencing screening decisions of principals. The generalizability of other findings to the field setting has been expanded due to the comparative design used in this study. However, the lack of a direct disparate impact for these data does indicate the need for more research using a comparative design.

Future research could clarify a question unanswered by this study by varying focal position in addition to the factors manipulated herein. The differences between the results of Young and Schmidt (1988), Wallich (1984), and this study may be due to the different demand characteristics produced by the focal position used in each study or the differences between the results may be due to the difference in experimental design. By including all three focal positions in a comparative design, this question of possible influences on teacher candidate ratings could be assessed.

Researchers interested in teacher selection should continue to investigate screening decisions with a comparative design. Future studies should include other factors in the manipulations, of resumes of hypothetical teacher candidates. An alternative to including other factors would be to vary within the resumes the position and emphasis given chronological age, undergraduate grade
point average, and sex. A trend analysis may also expand knowledge of the indirect disparate impact for older teacher candidates.

Future studies should consider providing a small financial remuneration for participants due to the fact that the comparative design requires a great deal of participants' time. However, even if funds are not available, future studies should be conducted using a comparative design to further examine the possible indirect nature of disparate impact for older teacher candidates in screening decisions made by public high school principals.
References


Webster, E. C. (1964). Decision making in the interview. Industrial Relations Centre McGill University.


Appendix A

April 20, 1988

Dear High School Principal:

Principals are asked to perform many tasks. The selection of teachers is one of the most important tasks. Teacher selection consists of at least two processes: (1) screening; and (2) interviewing. Research, however, on the screening process leading up to the final interview has been limited. I am hoping to add to the existing knowledge of the teacher selection and screening process. As a former building level administrator, I understand very well the daily demands on your time. Therefore, this request was designed to take only a few minutes of your time. I sincerely hope you will choose to assist in this research.

Specifically, you are asked to read the enclosed Position Description and to evaluate four candidates as if you were screening for a vacant position in your district. Please note that each of the hypothetical candidates depicted on the enclosed resumes is to be evaluated on a separate evaluation form. After completing the evaluations of these candidates (4), please return the Evaluation forms along with the Self Biographical Form in the enclosed self-addressed envelope.

The confidentiality of your response is assured because your name is not requested. Individual responses will be treated anonymously and will be destroyed once group norms are calculated. In return for your cooperation, results will be mailed to you as well as all others asked to participate.

Again, I want to thank you for your time, effort, and cooperation in this research project. Your contribution to research on the selection process will be of benefit to all of us in education.

Sincerely,

A. William Place

I. Phillip Young
The Ohio State University
Educational Administration
Appendix B

SELF BIOGRAPHICAL FORM

Information about the Principal and School

1. Approximate student population in your school

2. Urban, suburban or rural school setting

3. Administrative experience in years

4. Age of evaluator

5. Sex of evaluator

6. Are resumes used to screen applicants? YES  NO (CIRCLE)

7. Indicate approximate number of teachers hired each year.

_____
Appendix C

POSITION DESCRIPTION

TITLE: Chemistry Teacher

REPORTS TO: Building principal

DESCRIPTION:

To instruct students effectively and affectively.

To supervise, test and grade students as well as develop curriculum with other district personnel.

FEATURES OF THE POSITION:
Twenty-five (25) to thirty (30) pupils per class.
Five (5) classes per day.
General supervision for 45 minutes.
Medium-sized school (800 students, 9-12)
Moderately conservative community.
Challenging students.

DESIRED TEACHER BEHAVIOR:

Friendly, but firm.
Strong teaching skills.
Intelligent.
Dynamic.
Sociable.
Positive model.
Wide range of interest.
Dedicated to teaching.

EXTRACURRICULAR:
Teachers who are interested in supervising after school activities should see the appropriate department head.
Appendix D

#1 CANDIDATE RESUME
April 20, 1988

PERSONAL DATA:
NAME: Mary Evans
ADDRESS: 3448 Hickory Hill Rd., River City, State*
TELEPHONE: (###) 222-0641
AGE 49 DATE OF BIRTH: March 6, 1939

EDUCATIONAL BACKGROUND:
Bachelor’s Degree: B.S. - State University
Undergraduate G.P.A.: 2.68
Major: Chemistry
Minor: Education
High School Diploma: Middlebury, (State) High School

CERTIFICATION:
Chemistry and Physical Science

TEACHING EXPERIENCE:
Current - Springfield East High School
Springfield, State
Subject Area: Chemistry and Physical Science

Previous - Jonestown High School
Jonestown, State
Subject Area: Chemistry and Physical Science

EXTRACURRICULAR EXPERIENCE:
Student Council Advisor; School Awards Committee;
Member of District Curriculum Committees;
Camera Club; Chess Club

PROFESSIONAL ORGANIZATIONS:
Local Education Association
State Education Association

COMMUNITY ACTIVITIES:
Adult Class Teaching
United Way

FUTURE AMBITIONS:
1. To complete Master’s Degree
2. To become a better teacher

*for the purpose of this research assume state to be your own

90
Appendix D

#2 CANDIDATE RESUME
April 20, 1988

PERSONAL DATA:
NAME: Sue Jones
ADDRESS: 2921 Packardville Rd., River City, State#
TELEPHONE: (###) 282-8241
AGE 49 DATE OF BIRTH: February 27, 1939

EDUCATIONAL BACKGROUND:
Bachelor’s Degree: B.S. - State University
Undergraduate G.P.A.: 3.50
Major: Chemistry
Minor: Education
High School Diploma: Middlebury, (State) High School

CERTIFICATION:
Chemistry and Physical Science

TEACHING EXPERIENCE:
Current - Springfield East High School
Springfield, State
Subject Area: Chemistry and Physical Science

Previous - Jonestown High School
Jonestown, State
Subject Area: Chemistry and Physical Science

EXTRACURRICULAR EXPERIENCE:
Student Council Advisor; School Awards Committee;
Member of District Curriculum Committees;
Camera Club; Chess Club

PROFESSIONAL ORGANIZATIONS:
Local Education Association
State Education Association

COMMUNITY ACTIVITIES:
Adult Class Teaching
United Way

FUTURE AMBITIONS:
1. To complete Master’s Degree
2. To become a better teacher
*for the purpose of this research assume state to be your own
Appendix D

#3 CANDIDATE RESUME
April 20, 1988

PERSONAL DATA:
NAME: Beth Thompson
ADDRESS: 1641 Pickway Rd., River City, State#
TELEPHONE: (###) 288-3341
AGE 29 DATE OF BIRTH: March 21, 1959

EDUCATIONAL BACKGROUND:
Bachelor's Degree: B.S. - State University
Undergraduate G.P.A.: 2.68
Major: Chemistry
Minor: Education
High School Diploma: Middlebury, (State) High School

CERTIFICATION:
Chemistry and Physical Science

TEACHING EXPERIENCE:
Current - Springfield East High School
Springfield, State

Subject Area: Chemistry and Physical Science

Previous - Jonestown High School
Jonestown, State

Subject Area: Chemistry and Physical Science

EXTRACURRICULAR EXPERIENCE:
Student Council Advisor; School Awards Committee;
Member of District Curriculum Committees;
Camera Club; Chess Club

PROFESSIONAL ORGANIZATIONS:
Local Education Association
State Education Association

COMMUNITY ACTIVITIES:
Adult Class Teaching
United Way

FUTURE AMBITIONS:
1. To complete Master's Degree
2. To become a better teacher
*for the purpose of this research assume state to be your own
Appendix D

#4 CANDIDATE RESUME
April 20, 1988

PERSONAL DATA:
NAME: Ann Smith
ADDRESS: 2519 Cherry Hill Rd., River City, State*
TELEPHONE: (###) 222-3811
AGE 29 DATE OF BIRTH: April 2, 1959

EDUCATIONAL BACKGROUND:
Bachelor's Degree: B.S. - State University
Undergraduate G.P.A.: 3.50
Major: Chemistry
Minor: Education
High School Diploma: Middlebury, (State) High School

CERTIFICATION:
Chemistry and Physical Science

TEACHING EXPERIENCE:
Current - Springfield East High School
Springfield, State

Subject Area: Chemistry and Physical Science

Previous - Jonestown High School
Jonestown, State

Subject Area: Chemistry and Physical Science

EXTRACURRICULAR EXPERIENCE:
Student Council Advisor; School Awards Committee;
Member of District Curriculum Committees;
Camera Club; Chess Club

PROFESSIONAL ORGANIZATIONS:
Local Education Association
State Education Association

COMMUNITY ACTIVITIES:
Adult Class Teaching
United Way

FUTURE AMBITIONS:
1. To complete Master's Degree
2. To become a better teacher

*for the purpose of this research assume state to be your own
PERSONAL DATA:
NAME: Mark Evans
ADDRESS: 3448 Hickory Hill Rd., River City, State#
TELEPHONE: (###) 222-0641
AGE 49 DATE OF BIRTH: March 6, 1939

EDUCATIONAL BACKGROUND:
Bachelor’s Degree: B.S. - State University
Undergraduate G.P.A.: 2.68
Major: Chemistry
Minor: Education
High School Diploma: Middlebury, (State) High School

CERTIFICATION:
Chemistry and Physical Science

TEACHING EXPERIENCE:
Current - Springfield East High School
Springfield, State

Subject Area: Chemistry and Physical Science

Previous - Jonestown High School
Jonestown, State

Subject Area: Chemistry and Physical Science

EXTRACURRICULAR EXPERIENCE:
Student Council Advisor; School Awards Committee;
Member of District Curriculum Committees;
Camera Club; Chess Club

PROFESSIONAL ORGANIZATIONS:
Local Education Association
State Education Association

COMMUNITY ACTIVITIES:
Adult Class Teaching
United Way

FUTURE AMBITIONS:
1. To complete Master’s Degree
2. To become a better teacher

*for the purpose of this research assume state to be your own
Appendix D

#6 CANDIDATE RESUME
April 20, 1988

PERSONAL DATA:
NAME: Michael Jones
ADDRESS: 2921 Packardville Rd., River City, State*
TELEPHONE: (###) 282-8241
AGE 49 DATE OF BIRTH: February 27, 1939

EDUCATIONAL BACKGROUND:
Bachelor’s Degree: B.S. - State University
Undergraduate G.P.A.: 3.50
Major: Chemistry
Minor: Education
High School Diploma: Middlebury, (State) High School

CERTIFICATION:
Chemistry and Physical Science

TEACHING EXPERIENCE:
Current - Springfield East High School
Springfield, State

Subject Area: Chemistry and Physical Science

Previous - Jonestown High School
Jonestown, State

Subject Area: Chemistry and Physical Science

EXTRACURRICULAR EXPERIENCE:
Student Council Advisor; School Awards Committee;
Member of District Curriculum Committees;
Camera Club; Chess Club

PROFESSIONAL ORGANIZATIONS:
Local Education Association
State Education Association

COMMUNITY ACTIVITIES:
Adult Class Teaching
United Way

FUTURE AMBITIONS:
1. To complete Master's Degree
2. To become a better teacher
*for the purpose of this research assume state to be your own
Appendix D

#7 CANDIDATE RESUME
April 20, 1988

PERSONAL DATA:
NAME: William Thompson
ADDRESS: 1641 Pickway Rd., River City, State#
TELEPHONE: (###) 288-3341
AGE 29 DATE OF BIRTH: March 21, 1959

EDUCATIONAL BACKGROUND:
Bachelor’s Degree: B.S. - State University
Undergraduate G.P.A.: 2.68
Major: Chemistry
Minor: Education
High School Diploma: Middlebury, (State) High School

CERTIFICATION:
Chemistry and Physical Science

TEACHING EXPERIENCE:
Current - Springfield East High School
Springfield, State

Subject Area: Chemistry and Physical Science

Previous - Jonestown High School
Jonestown, State

Subject Area: Chemistry and Physical Science

EXTRACURRICULAR EXPERIENCE:
Student Council Advisor; School Awards Committee;
Member of District Curriculum Committees;
Camera Club; Chess Club

PROFESSIONAL ORGANIZATIONS:
Local Education Association
State Education Association

COMMUNITY ACTIVITIES:
Adult Class Teaching
United Way

FUTURE AMBITIONS:
1. To complete Master’s Degree
2. To become a better teacher

*for the purpose of this research assume state to be your own
Appendix D

#8 CANDIDATE RESUME
April 20, 1988

PERSONAL DATA:
NAME: John Smith
ADDRESS: 2519 Cherry Hill Rd., River City, State*
TELEPHONE: (###) 222-3811
AGE 29 DATE OF BIRTH: April 2, 1959

EDUCATIONAL BACKGROUND:
Bachelor's Degree: B.B. - State University
Undergraduate G.P.A.: 3.50
Major: Chemistry
Minor: Education
High School Diploma: Middlebury, (State) High School

CERTIFICATION:
Chemistry and Physical Science

TEACHING EXPERIENCE:
Current - Springfield East High School
Springfield, State

Subject Area: Chemistry and Physical Science

Previous - Jonestown High School
Jonestown, State

Subject Area: Chemistry and Physical Science

EXTRACURRICULAR EXPERIENCE:
Student Council Advisor; School Awards Committee;
Member of District Curriculum Committees;
Camera Club; Chess Club

PROFESSIONAL ORGANIZATIONS:
Local Education Association
State Education Association

COMMUNITY ACTIVITIES:
Adult Class Teaching
United Way

FUTURE AMBITIONS:
1. To complete Master's Degree
2. To become a better teacher
*for the purpose of this research assume state to be your own
Appendix E

Section 1

Reference Letter

To Whom it May Concern:

I am writing this letter on behalf of Mark Evans, a candidate for a teaching position in the area of chemistry. Mr. Evans was a teacher in our high school the past three years. He was given the responsibility of teaching four chemistry classes and one physical science class.

Mark exhibited a thorough knowledge of the subject matter. He was able to plan and organize several in-class activities and experiments quite well. Individual student needs seemed to be met at all times as well.

Mr. Evans maintained a professional relationship with students, faculty, and the community at all times. He was well thought of and appreciated by colleagues and superiors for his work in the classroom as well as the student council, awards committee, and science review committee.

Overall, I would rate Mark Evans high as a science teacher. I would not hesitate to hire Mark again should he ever return to our area.

* Names and gender specific pronouns were substituted where appropriate for each of the eight hypothetical teacher candidates.
Appendix E
Section 2
Reference Letter

To Whom it May Concern:

I would appreciate your consideration of a fine person, Mark Evans, for a chemistry teaching position. Mark did a good job in our high school over the past few years, having had the responsibility of teaching four chemistry classes and one physical science class.

Mark Evans' above average background in chemistry prepared him for meeting the challenges of planning and organizing the many in-class activities required to do a good job in teaching this subject. The studies and training received by Mark at the university have provided the many skills necessary for planning, organizing, and meeting individual student needs in the classroom.

Mr. Evans' sense of professionalism and good disposition were evident in his classes, in his work with the science review committee, and in his other activities. With respect to an overall appraisal of Mark Evans' teaching and experience at our school, I would say it was well above average and indeed quite good at the high school level in the area of chemistry.

* Names and gender specific pronouns were substituted where appropriate for each of the eight hypothetical teacher candidates.
Appendix E

Section 3

Reference Letter

To Whom it May Concern:

I would appreciate your consideration of an outstanding candidate, Mark Evans, for a teaching position in the area of chemistry. Mark did a good job in our high school over the past several years, having had the responsibility of teaching four chemistry classes and one science class.

Mark Evans' varied and above average background in chemistry has provided him sound preparation for meeting the challenges of planning and organizing the many in-class activities and experiments required to do a good job in teaching this subject. The studies and training received by Mark at the university have provided the many skills necessary for planning, organizing, and meeting individual student needs in the classroom.

A real sense of professionalism and a good disposition were displayed by Mark Evans during the time spent here in teaching and in working with the science review committee for grades 9-12.

With respect to an overall appraisal of Mark Evans' teaching experience at our school, I would say it was well above average and indeed quite good at the high school level in the area of chemistry.

* Names and gender specific pronouns were substituted where appropriate for each of the eight hypothetical teacher candidates.
Appendix E

Section 4

Reference Letter

To Whom it May Concern:

Mark Evans is a teacher in our high school. Due to his family moving to your district we will miss his services next year. Mark has been a positive addition to the staff for the last three years.

Mr. Evans is professional and capable in all aspects of his teaching. The extracurricular activities he supervised were always a success. His strong will is always an asset.

Mark has been willing to serve on several committees here at the high school and also at the district level. I have gotten very positive feedback concerning his contributions.

In conclusion, I would recommend Mark Evans for a teaching position in your school district. His professional and caring attitude will be a great addition to any administration which can properly channel his enthusiasm.

* Names and gender specific pronouns were substituted where appropriate for each of the eight hypothetical teacher candidates.
**Appendix E**

**Mark Evans * EVALUATION FORM**

After reviewing the Position and Candidate Summaries, please rate these candidates as if you were screening resumes to fill a similar position in your school.

A. Candidate’s knowledge of the curricular area.
   - poor  
   - fair  
   - good  
   - excellent  

B. Candidate’s ability to transmit knowledge
   - poor  
   - fair  
   - good  
   - excellent  

C. Candidate’s likelihood to contribute to overall school program
   - poor  
   - fair  
   - good  
   - excellent  

D. Candidate’s ability to maintain a disciplined teaching environment
   - poor  
   - fair  
   - good  
   - excellent  

E. Candidate’s ability to create a friendly classroom environment
   - poor  
   - fair  
   - good  
   - excellent  

F. Candidate’s potential for professional growth
   - poor  
   - fair  
   - good  
   - excellent  

G. The chances of this candidate being interviewed are:
   (Please circle one number)
   - Poor  
   - 1  
   - 2  
   - 3  
   - 4  
   - 5  
   - 6  
   - 7  
   - 8  
   - 9  
   - 10 Excellent  

* Names were substituted for each of the eight hypothetical teacher candidates.