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ABSTRACT

Three teacher selection procedures used by a large urban school district were investigated. The relationships of certain biographical data to scores on the National Teacher Examination (NTE), an interview rating, and an experimental Experience Profile Questionnaire were examined. The final selection of teachers for the district was based on a weighted sum of the NTE Composite scores and the Interview scores. Data were gathered on the Experience Profile to assess its worth for use in future selection programs. Results showed no relationship of race or sex to the selection scores; however, there was a significant correlation between selection scores and scores on the Experience Profile measure. In January, 1976, performance ratings of successful candidates will be collected. These data will be used to evaluate the three selection procedures used in this study. (Author/RC)

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# A Comparison of Two Models of Teacher Selection in a Large Urban Community

## Introduction

Much of teacher selection is based on the notion that teachers must possess certain traits in minimal amounts to succeed; thus, many selection programs require candidates to experience a series of screening procedures, each of which eliminates candidates who do not possess specified amounts of the traits, skills, etc., stipulated by the hiring district. An alternate conception is one that describes teachers as the products of combinations of traits interacting in a number of ways, such that some teachers will be successful because special or highly developed skills in certain areas will compensate for weaknesses in other areas. For example, a teacher with modest academic credentials may be successful because he/she has great understanding of the social and psychological characteristics of his/her students.

Initially, the purpose of this paper was to study both of the above conceptions of teacher selection by utilizing data made available to the writers as the result of a relatively extensive teacher selection process in a large eastern city. That purpose was carried out only partially. The final hiring (over which the writers had no control) did not rigidly follow either of the two basic selection strategies; further, some teaching areas had no candidates who were ultimately selected.

An additional and principal purpose of this paper was to investigate the interaction among a number of biographical, subjective, and objective achievement variables and to study their relationship to the actual teacher

selection score and some experimental selection scores as well.

## Study Design and Procedures

### Sample

The sample consisted of 430 applicants for positions in a number of educational or related positions. The specialties listed by the candidates were one of the following: Elementary Education; Special Education; Bilingual Education; Biology; Art; Industrial Arts; Music Education and/or Instruction; Business Education; Physical Education; Mathematics; Science; Social Studies; Home Economics; English; Health Education; School Nurse, and School Psychologist. Almost half of the candidates were seeking positions in Elementary Education.

### Data/Study Variables

Many of the biographical and social variables used in the study were categorical. To use these variables quantitatively, a number of binary dummy variables were established. These variables are typically scored 1 as yes and 0 as no. The variables used in the study were as follows:

A. Categorical Variables

1. Black Candidates
2. Hispanic Candidates
3. White (non-minority) Candidates
4. Sex (males scored 1 and females scored 0)
5. City Resident
6. Instate College
7. Holds Masters Degree
8. State Resident
9. Hired

B. Measured Variables

10. Experience Profile Score: A score computed from a multiple-choice biographical inventory. Each response was assigned an a priori score based on its perceived value to the school district. Responses were given values of 0, 5, 10, 25, and 50, with higher values assigned to experiences that evidenced familiarity with the milieu of the city. For example, under "Professional Experiences" a candidate was asked to estimate the size of the community and the percentage of ethnic minorities in the student body of the school(s) in which he/she taught. Responses to the choices that showed no experience in urban schools were given an 0 value, whereas choices that showed experience in such schools were given a value of 50. For verification, candidates were asked to report the actual name and location of the school. For the present study, the score was rescaled to the interview score.

11. Interview score: The interview score was the pooled average of independent ratings given to each candidate by members of the interview committees established by the school district. Several interview committees were used. Each candidate was rated by at least four raters in four criterion areas labeled Personality Characteristics, Speech, Experience and Training, and a Miscellaneous area that included school activities, hobbies, etc. Results on the eight-point scales were averaged and set on a 65 to 100 point scale.

12. National Teacher Examinations (NTE) Composite score: Basically an objective achievement score (obtained by adding the scaled score of the Weighted Common Examinations Total and the scaled score of an Area Examination), rescaled to be on the same scale as the interview score.

13. Final Selection Score: A weighted composite of the interview (60%) and the NTE Composite score (40%).

14. An experimental selection score: An equally weighted composite of the Experience Profile score, the NTE Composite score, and the interview score.

15. An experimental selection score: A composite giving 50% of the weight to the interview score; 25% each to the Experience Profile score and the NTE Composite.

Analyses

A missing data intercorrelation table of all 15 variables was obtained for study. Cross tabulations or descriptive statistics, using ethnic membership as a break variable, were done for all variables and similar analyses using Hired or Not Hired as a break variable were also obtained.

Some special tabulations were made using the 202 candidates in Elementary Education of whom 59 were actually hired. The tabulations were based on results using the top 59 candidates on the final selection score (the compensatory model). These latter results were also examined as if the minimal score criteria had been applied. To do that, an arbitrary minimum NTE Composite score of 1050 was used as a cut value. That cut score was typical of the level used by some districts and it was judged a reasonable value to use for purposes of this paper. A score corresponding to the NTE Compos cut was also determined for the interview score.

Results

Table I presents the product moment intercorrelations among the artificial binary variables and the measured variables as well. A significance level of .01 was chosen for interpretive purposes. Inspection of the intercorrelations pertaining to ethnic membership shows several notable results. Hispanic candidates held significantly more Masters Degrees than other candidates and Black candidates scored significantly lower on the NTE Composite score.

Other findings were that Black candidates scored significantly higher on the Experience Profile score; proportionately fewer Hispanic candidates were "city" residents; and minority candidates were less likely to have graduated from an in-state college. Another finding in Table I is that holders of the Masters Degree scored significantly higher on the NTE Composite score.

Insert Table I about here

Results pertaining to the critical selection variable "Hired" showed significant and relatively high intercorrelations with all the selection scores. Note that the NTE Composite score as a single entity did not correlate significantly with the "Hired" variable. The extremely high intercorrelations among the selection scores suggest that it would not have mattered which of the three had been used to base decisions.

A more detailed presentation of the significant findings in Table I is given in Tables II and III. These latter tables show actual counts and percentages for each classification of the categorical data. For measured variables, the number of candidates, mean score, and standard deviation are reported for each comparative group. Information on the total group is also reported.

Insert Tables II and III about here

A finding in Table III was determined significant by the Chi Square criterion that was not mentioned as a significant result in Table I (where the corresponding correlation coefficient bordered on significance). A higher proportion of males were hired; however, males constituted only 28 percent of the entire candidate pool. Outside of the significant result just mentioned, Table III reports no ethnic, biographical, or social variable that was significantly related to the ultimate hiring of candidates.

Special tabulations for Elementary Education candidates are summarized in Table IV. These tabulations show that according to the selection score, seventeen candidates were hired who ought not have been and vice versa. The table also indicates how many candidates in denoted categories would not have been hired by virtue of having scores below a priori minimum levels. Of those candidates who were actually hired, 12 (20%) would not have been hired by failing to meet those minimum levels.

Discussion and Concluding Remarks

Despite a number of findings indicating differences within the candidate pool with respect to several social and objective variables, the final hiring of candidates was not significantly related to any of those variables except for a favoring of male candidates over female candidates. Further, while the NTE Composite score correlated significantly with all of the selection scores it was not correlated significantly with hiring. Apparently the NTE Composite scores had little affect in selecting candidates who were to be hired. Thus, in a way, the NTE Composite seemed to have had the role of a "certification" measure.

Even though final selection of candidates did not uniformly respect the rank order of selection scores, the hired candidates consistently had higher mean values on all measures composing the selection scores. It is

clear that the hired pool of candidates had superior qualifications in comparison to the unsuccessful candidates.

According to the special results, (Table IV), the "compensatory model" was naturally more liberal than a selection model that required established minimum scores on selection variables. Approximately 20 percent of the candidates actually hired would not have been eligible. It is difficult, in the present instance, to assess the contrast of the two strategies since the rank order of the selection score was not consistently honored. However, the difference of the two strategies obviously has the most effect at the point where successful and unsuccessful candidates are determined. If specific urban experiences are valued by a particular district, it would seem that the compensatory model of selection would more likely suit the needs of the hiring system.

It should be apparent that the results of this paper are in no way generalizable to the selection of teachers in any large city, even to the one presently studied. Peering into the process conducted by the subject city addressed several goals in teacher selection; one is to improve the use of standardized tests for teachers entering the profession, particularly those for the urban schools, and the other is to create teacher selection schemes that adhere to the E.E.O.C. guidelines. Because minority group members have typically not fared well on most standardized measures when they have been compared to majority group members, these goals have been described as incompatible by some educators. If some limitations can be kept in mind, i.e., a small number of minority candidates and a departure from rigid use of a rank order on the criterion score, the essence of the two teacher selection goals may be inferred to have been furthered in the process studied.

Table I

Missing Data[a] Intercorrelations

of Study Variables

(decimal points and diagonals omitted)

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1. Black Cand. | | | | | | | | | | | | | | |
| 2. Hispanic Cand. | -11 | | | | | | | | | | | | | |
| 3. White Cand. | -68 | -62 | | | | | | | | | | | | |
| 4. Sex | -03 | -06 | 06 | | | | | | | | | | | |
| 5. City Resident | 05 | -20 | 09 | -04 | | | | | | | | | | |
| 6. Instate College | -06 | -13 | 19 | -03 | 20 | | | | | | | | | |
| 7. Holds MA | -08 | 34 | -18 | 12 | -13 | -23 | | | | | | | | |
| 8. State Resident | -03 | -04 | 08 | -03 | 28 | 36 | 18 | | | | | | | |
| 9. Hired | -06 | -08 | 11 | 13 | 12 | -01 | 02 | 00 | | | | | | |
| 0. Experience | 14 | -06 | -08 | 12 | 15 | 02 | 06 | 02 | 12 | | | | | |
| 1. Interview | 10 | -07 | -03 | 15 | 12 | 00 | 05 | 02 | 44 | 16 | | | | |
| 2. NTE | -35 | 19 | 18 | -04 | -20 | -12 | 33 | -15 | 11 | -04 | 02 | | | |
| 3. Selection | -11 | 05 | 08 | 10 | -01 | -06 | 22 | -07 | 42 | 11 | 84 | 57 | | |
| 4. Exp. Sel. #1 | -03 | 05 | 02 | 09 | 04 | -06 | 22 | -03 | 38 | 63 | 66 | 52 | 83 | |
| 5. Exp. Sel. #2 | 02 | 06 | -03 | 12 | 07 | -03 | 19 | 00 | 43 | 50 | 85 | 37 | 91 | 96 |

[a]N's vary from 317 to 430. $r_{.99} = .14$

Table II

Study Variables by Ethnic Membership

A. Categorical Variables

| Variable | | Black Cand. N | Black Cand. % | Hispanic N | Hispanic % | White Cand. N | White Cand. % | Total N | Total % | $\chi^2$ |
|---|---|---|---|---|---|---|---|---|---|---|
| Sex | M | 10 | (23) | 7 | (19) | 95 | (29) | 112 | (28) | 1.9 |
| | F | 33 | (77) | 29 | (81) | 234 | (71) | 296 | (72) | |
| City Resident | Yes | 29 | (67) | 10 | (28) | 201 | (62) | 240 | (60) | 17.0* |
| | No | 14 | (33) | 26 | (72) | 123 | (38) | 163 | (40) | |
| Instate College | Yes | 32 | (74) | 23 | (64) | 278 | (84) | 333 | (82) | 10.8* |
| | No | 11 | (26) | 13 | (36) | 51 | (16) | 75 | (18) | |
| Hold MA | Yes | 4 | ( 9) | 22 | (61) | 48 | (15) | 74 | (18) | 29.1* |
| | No | 39 | (91) | 14 | (39) | 273 | (18) | 326 | (82) | |
| State Resident | Yes | 40 | (93) | 33 | (92) | 311 | (96) | 364 | (95) | inappr.* |
| | No | 3 | ( 7) | 3 | ( 8) | 14 | ( 4) | 20 | ( 5) | |
| Hired | Yes | 11 | (26) | 8 | (22) | 121 | (37) | 140 | (34) | 4.7 |
| | No | 32 | (74) | 28 | (78) | 208 | (63) | 268 | (66) | |

B. Measured Variables

| Variable | Black Cand. N | Black Cand. Mean | Black Cand. S.D. | Hispanic N | Hispanic Mean | Hispanic S.D. | White Cand. N | White Cand. Mean | White Cand. S.D. | Total N | Total Mean | Total S.D. | F |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Experience Profile | 31 | 86.5 | 5.1 | 11 | 82.9 | 6.0 | 280 | 84.2 | 4.8 | 322 | 84.4 | 4.9 | 3.6 |
| Interview | 43 | 85.9 | 4.3 | 36 | 83.3 | 5.4 | 329 | 84.3 | 4.9 | 408 | 84.4 | 4.9 | 2.9 |
| NTE Composite | 43 | 79.2 | 4.8 | 36 | 87.3 | 5.6 | 329 | 84.8 | 4.3 | 408 | 84.4 | 4.9 | 37.0* |
| Selection Score | 43 | 83.2 | 3.4 | 36 | 84.9 | 3.7 | 329 | 84.5 | 3.5 | 408 | 84.4 | 3.6 | 3.0 |
| Experimental #1 | 31 | 84.1 | 3.2 | 11 | 85.2 | 3.3 | 280 | 84.5 | 2.8 | 322 | 84.4 | 2.9 | 0.5 |
| Experimental #2 | 31 | 84.7 | 3.3 | 11 | 85.5 | 3.2 | 280 | 84.4 | 3.1 | 322 | 84.5 | 3.1 | 0.7 |

*Significant at .01 level.

**Cells with less than 5 as expected frequency.

Table III

Study Variables by Candidate Selection Success[a]

A. Categorical Variables

| Variable | | Not Hired | Hired | Total | $\chi^2$ |
|---|---|---|---|---|---|
| Sex | M | 63(56) | 50(44) | 113(100) | 7.1* |
| | F | 209(70) | 91(30) | 300(100) | |
| City Resident | Yes | 149(61) | 94(39) | 243(100) | 6.1 |
| | No | 120(73) | 44(27) | 164(100) | |
| Instate College | Yes | 220(62) | 113(38) | 333(100) | 0.1 |
| | No | 51(65) | 28(35) | 79(100) | |
| Hold MA | Yes | 49(65) | 26(35) | 75(100) | 0.1 |
| | No | 221(67) | 108(33) | 329(100) | |
| State Resident | Yes | 255(66) | 132(34) | 387(100) | 0.0 |
| | No | 14(67) | 7(33) | 21(100) | |

B. Measured Variables

| Variable | N | Mean | S.D. | N | Mean | S.D. | N | Mean | S.D. | t |
|---|---|---|---|---|---|---|---|---|---|---|
| Experience Profile | 213 | 83.9 | 4.8 | 115 | 85.2 | 5.1 | 328 | 84.4 | 4.9 | 2.2 |
| Interview | 289 | 82.9 | 4.6 | 141 | 87.5 | 4.1 | 430 | 84.4 | 4.9 | 10.2* |
| NTE Composite | 289 | 84.0 | 4.9 | 141 | 85.1 | 4.8 | 430 | 84.4 | 4.9 | 2.2 |
| Selection Score | 289 | 83.3 | 3.3 | 141 | 86.5 | 3.2 | 430 | 84.4 | 3.6 | 9.7* |
| Experimental #1 | 213 | 83.6 | 2.8 | 115 | 85.9 | 2.5 | 328 | 84.4 | 2.9 | 7.3 |
| Experimental #2 | 213 | 83.5 | 2.9 | 115 | 86.3 | 2.6 | 328 | 84.6 | 3.1 | 8.6* |

*Significant at .01 level.

[a]Percentages in parentheses.

Table 1V

Special Tabulations for Elementary Education Candidates[a]

| | Bottom 143 on Selection Score | | Top 59 on Selection Score | |
|---|---|---|---|---|
| | Not Hired | Hired | Not Hired | Hired |
| | 124 | 17 | 17 | 42 |
| Number Below Minimun NTE Score | N/A | 8 | 1 | 3 |
| Number Below Minimun Interview Score | N/A | 1 | 0 | 0 |

[a] 59 Candidates actually hired, thus basis for the particular split in this Table.