The Prediction of Success of Elementary Teachers

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THE PREDICTION OF SUCCESS OF ELEMENTARY TEACHERS

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This problem lies in the field of teacher selection. School superintendents and school executives have no more important problems than those concerned with the technique of selecting and rating teachers. At the present time the various methods of teacher selection are based upon the judgments of competent judges. The general aim of our investigation is to devise some technique which will measure and predict teacher success.

Dr. F. B. Knight and others have shown that the reliability of judgments of specific factors of teacher ability is only slightly above the reliability of a single judgment of the total function of teacher ability. Various rating schemes and score cards have been built upon the assumption that the reliability of judgments of specific factors of teacher ability is higher than a single judgment of the total function. According to the Spearman-Brown Formula for the Measurement of Reliability, the reliability of one judgment is .177. If this be true, the greatest possible correlation of a true score of teacher ability with the judgment of one judge would be .42. A correlation of .42 has a predictive value of 9% better than chance would give. In other words, the highest possible prediction of the judgment of one judge of teacher ability is 9% better than chance. If the reliability of rating schemes when rated by one judge is only slightly higher than a single judgment of the total function of teacher ability, their highest possible predictive value is only slightly above 9% better than chance. By "highest possible" we are assuming a perfect validity of the judgment or rating scheme. It is generally recognized that this assumption is not true. Hence the predictive value of rating schemes, if the above analysis is correct, is less than 9% better than chance. We may now restate our problem and say, it is to develop a technique which will more adequately measure and predict teacher ability.

For lack of time we have narrowed our problem down, today, to this question; is a teacher who is ranked 'superior,' for example, by the superintendent of a school system also ranked 'superior' by one of the supervisors of the same school system? Do two equally

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compentent judges who have observed the teaching ability of a teacher for at least one school year agree as to the ability of that teacher? It would be only sound logic to assume that just to the extent to which they do not agree is there absence of measurement by judgments of competent judges under optimum conditions. In other words, to the extent of their disagreement is teacher ability actually unknown for if there is disagreement, equally competent judges cannot agree upon the amount of its presence when actually seen.

The following data were secured from five representative schools from five different states. The rankings were made on elementary teachers. Rankings on each teacher, of the group selected, by the superintendent and supervisor of that school system were secured.

In school A the correlation between the rankings of the superintendent and the supervisor was $+ .8484$; P. E. $\pm .026$. The S. D. of the rankings of each was 11.26. This correlation gives an agreement between the superintendent and supervisor of 47.19% better than chance. In school B the correlation was $+ .8070$; P. E. $\pm .044$. The S. D. of the rankings of each was 6.31. This correlation gives an agreement of 41% better than chance. In school C the correlation was $+ .2918$; P. E. $\pm .194$. The S. D. of the rankings of each was 2.68. This correlation gives an agreement of 4.4% better than chance. In school D the correlation was $+ .4646$; P. E. $\pm .118$. The S. D. of the rankings of each was 5.32. This correlation gives an agreement of 11.45% better than chance. In school E the correlation was $+ .9590$; P. E. $\pm .0085$. The S. D. of the rankings was 17.0. This correlation gives an agreement of 71.7% better than mere chance.

The mean agreement between the judgments of the superintendents and the supervisors of these five school systems is 31.1% better than chance. In other words, assuming that the above schools are a sampling of schools in general, if a superintendent rates a teacher as 'superior' there are 31 chances out of a hundred that one of the supervisors of the same school system would rank the same teacher as 'superior' and 69 chances out of a hundred that the supervisor would rank the same teacher as of a lower or higher rank. Other data which we have collected from various school systems support the same fact.

In the actual selection of teachers superintendents and school executives are obviously unable to observe the actual work of the candidate applying for a position. The validity of the judgment on the candidate is thus lowered and, as we have seen, to probably less than 9% better than chance.

It might be contended that such factors as intelligence, secondary record, academic marks, professional marks, student teaching success, and physique of the candidate which data can be secured by the superintendent and school executive will give a high prediction of teacher success. F. L. Whitney, in an extensive investigation, has shown that the correlation between these factors as a group and teacher success is .288. This was determined by the technique of multiple correlation. A correlation of .288 has a predictive value of 4.3% better than chance. These six factors combined, according to Whitney's study, therefore, have a predictive value of only 4.3% better than mere chance would give.

From this discussion and on the basis of further experimental data not given here, we would conclude (1) that the problem of teacher selection and ranking is not a simple one, (2) that the existing methods of selection are inadequate for the present exigencies, (3) that a scientific technique based upon an objective standard for the selection and ranking of teachers ought to be developed.

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