DOCUMENT RESUME

ED 034 251 CG 004 660

AUTHOR	Karasick, Bernard W.; Jewell, Donald O.
TITLE	Validation of a Student Leadership Scale by Peer and Teacher Nomination Technique.
INSTITUTION	Georgia State Coll., Atlanta.; Purdue Univ., Lafayette, Ind.
PUB DATE	69
NOTE	10p.
EDRS PRICE	EDRS Price MF-$0.25 HC-$0.60
DESCRIPTORS	Correlation, *Leadership, Leadership Qualities, Peer Groups, Predictive Validity, *Rating Scales, *Secondary School Students, *Self Evaluation, Seniors, *Student Leadership, Teacher Rating

ABSTRACT

The validity of a self report leadership scale was examined to test the hypothesis that leaders can be identified by an efficient self-report scale and that they will also be so perceived by their superiors and peers. An 11 item self report instrument was designed and a unit weight system and a differential weight system were employed to weight the items. High school seniors (73) completed the instrument and a biographical data questionnaire. These students and five teachers also submitted the names of seniors whom they regarded as possessing strong leadership characteristics. The findings include the following: (1) there were significant inter-correlations between the self-report scores, peer nominations and teacher nominations; (2) there was no significant difference between the two weighting systems ability to predict peer and teacher nominations, but in a second study the differentially weighted system demonstrated greater predictability; and (3) there was a correlation between leadership scale scores and an outside criteria of leadership - the biographical data items. The strong interrelationship between the three rating groups demonstrated impressive evidence of convergent validity for the leadership scale and possible explanations for the findings are presented. (RM)

VALIDATION OF A STUDENT LEADERSHIP SCALE BY PEER AND TEACHER NOMINATION TECHNIQUE

BERNARD W. KARASICK
Purdue University

DONALD O. JEWELL
Georgia State College

The specification and prediction of leadership behavior has long been of interest in many of the practitioners in the areas of industrial and educational psychology. The increasing size and complexity of our modern day organizations is placing new and more stringent demands on those individuals responsible for the continued maintenance and growth of these organizations. The accurate prediction of leadership behavior is now, and will become, increasingly more important. While progress has been made in recent years, predictions are still far from adequate.

Some feel that the crux of the leadership prediction problem is the development of valid criteria. This study examines the validity of one type of leadership criterion — self-report questionnaire data. Self-reports of leadership behavior are used when large samples are needed and when it is not feasible to observe behavior directly. The use of such data, however, raises important questions: Can an individual really assess his own behavior adequately? Do self-report questionnaires ask questions which accurately reflect his leadership potential as well as his leadership behavior?

Answers to these questions were sought through the validation of a self-report leadership scale tailor-made for high school students. Scores on the scale were correlated with peer and teacher nominations of the students whom they chose as class leaders. In this design, high inter-correlations are a demonstration of convergent validity or confirmation by independent measurement.

A large body of literature has accumulated demonstrating the utility of peer ratings for prediction and validation purposes. As far back as

1949, Wherry and Fryer concluded that "Nominations by class members appear to be better measures of the leadership factor than any other variable (studied)" (p. 159). More recently, Roadman (1964) showed peer ratings to be valid predictors of promotion in IBM.

In like matter there is considerable evidence supporting the usefulness of superior ratings (e.g. Guion, 1965) and of self-ratings (Prien and Liske, 1962, Campbell, 1955, etc.) in predicting leadership behavior. Results from the scant research to date involving intercorrelation of scores from all three rating techniques, however, have been generally negative (Kirchner and Nichols, 1965; Werdelin, 1966; Lawler, 1966).

Beyond the question of the usefulness of the various measures involved is a question of how they relate to the trait being measured - leadership behavior. An excellent study of the factors differentiating student leaders from non-leaders was conducted by Weinberg (1965). Of special interest to the current study was his finding that there was generally high agreement between teachers and peers as to the identification of the student leaders.

The study reported here was an attempt to show that with the utilization of an efficient self-report scale, leaders can be identified and these self-identified leaders will also be so perceived by their superiors and peers.

METHOD

Subjects.

S's were 73 high school students (39 males and 34 females) in the senior class of a rural midwestern high school and 5 high school teachers at this school who were familiar with all of the senior students. To

maximize familiarty among subjects, any student who had been at the school for less than two years was eliminated from the sample. Seniors were used to maximize the opportunities each student had had to display leadership behavior and to be identified as a leader by his peers and teacher.

Instruments and Scoring

An 11-item self report instrument was designed on an a priori basis to include a broad range of activities and positions judged to reflect leadership behavior in high school. Two different methods of weighting the scale items were employed. The first, a unit-weight system, simply gives each item responded to a weight of 1 so that the maximum unit weight score that can be obtained is 11. The second system is a rational item weighting system in which each item is given a weighted value from 0 to 8, based on the authors' perceived importance of the item; the higher the perceived importance, the greater the weight. Guilford (1954), in surveying the problem of unit vs. differential weights, concluded that unit weights yield total scores as valid and reliable as those obtained from variable weights only if the number of items is relatively large since the larger the number of components, the less effective are the weights in changing the character of the composite score. He further concludes that differential weights can be most advantageously utilized where item intercorrelations are low. Since the self-report leadership measure contains a small number of heterogeneous items, it was felt that a differential item weight system would add significantly to the predictive power of the scale. Table 1 presents unit and differential weights for each of the 11 items.

___Insert Table 1 here_____

Procedure

All subjects completed the self-report scale and a 4-item biographical data questionnaire during the same class period on the same day. In addition they were instructed to write down the names of from four to eight students in the senior class whom they regarded as possessing strong leadership characteristics.

Five teachers who were familiar with the senior class were instructed to name as many students as they felt possessed leadership qualities. Since the number of teachers was not large, it was hoped that more variance would be brought into the nominations by instructing them to nominate as many students as possible. The nominations technique was used because it has been shown to be particularly effective in identifying members in the upper extreme of a leadership distribution. Both teachers and students were assured that their responses were completely confidential.

ANALYSIS AND RESULTS

Data available for analysis were (1) unit and differential weight scores on the 11 item self-report scale for each of the 73 subjects, (2) 5 sets of leaders names (a total of 56) obtained from the teachers in the sample, (3) 73 sets of leaders names (a total of 408) obtained from the subjects, and (4) S's responses to the 4-item biographical data form. With this data, three hypotheses were investigated.

I. The self-report scale scores, peer nominations, and teacher nominations will intercorrelate to a significant degree. Confirmation of this hypothesis would be evidence for convergent validity of the scale.

Pearson product-moment correlation coefficients ($\underline{r}$ s)[1] were calculated between both scale scores and peer and teacher nominations (the latter two scores consisting of the sum of the nominations received.) Table 2 shows the obtained coefficients. Item intercorrelations were generally low (-.27 to .49). The range of scores was 0-39 (rationally weighted scale), 0-8 (unit-weighted scale), 0-58 (peer nominations) and 0-5 (teacher nominations).

Insert Table 2 here

II. A rational system of weighting the self-report scale items will predict to a significantly greater degree the two criteria — peer and teacher nominations — than will a unit system of weighting.

The Student's $\underline{t}$-test was made between the correlations derived from both systems and the criteria. A $\underline{t}$ = 1.84 was obtained for Unit-Self-Peer vs. Rational-Self-Peer. For Unit-Self-Teacher vs. Rational-Self-Teacher, $\underline{t}$ = 0.27. Neither figure reached the .05 significance level ($\underline{t}$ = 2.00).

III. Students identified by the scale as leaders possess to a greater degree than non-leaders the following characteristics (as determined from the bio-data questionnaire): Higher grades, a greater expectancy to go to college, a mother who has graduated from high school, and a preference for the Republican Party (generally associated with upper income and education groups.) It was the authors' feeling that if the scale proved to be valid (I above), it would be of interest to see how scores correlate with an outside criteria of leadership — four bio-data items that intuitively seem to be associated with that trait.

A chi-square analysis between bio-data items and high and low 27% scorers (Kelley, 1939) on the leadership scale indicates that all items with the exception of political preference are substantially related to student leadership. (Grades, $\underline{x}^2$ = 11.10, $p < .001$; college plans, $\underline{x}^2$ = 10.00, $p < .001$; mother's education, $\underline{x}^2$ = 7.81, $p < .01$; political preference, $\underline{x}^2$ = 0.17).

A 66 subject cross validation study similar in all important respects to the current investigation largely substantiated the results reported here. In the second study, however, $\underline{t}$-tests between Pearson $\underline{r}$'s derived from the unit weighting system and the criteria and those derived from the rational weighting were significant at the .05 level (Peer; $\underline{t}$ = 2.5, teacher, $\underline{t}$ = 2.20).

DISCUSSION

From the strong interrelationships observed between the three rating groups, it would appear that impressive evidence of convergent validity for the self-report leadership scale has been demonstrated. The three "methods" purported to measure the same construct did in fact agree closely. In light of the generally discouraging results of previous research which attempted to find this agreement, it may be of some interest to consider possible explanations for the success of the current effort. Two differences between this study and others cited in the literature come to mind. First, other studies have used heterogeneous groups (such as students from several grades) while the present study used only seniors who had had full opportunity to display leadership behavior. Second, S's in the present study had no reason to distort their responses or nominations since nothing was at stake for either the ratees or raters. It is a rare case in either industry or

the military where such appraisals have no real or imagined consequences. Mixed conclusions can be reached with respect to the comparisons made between rationally-weighted and unit-weighted scale scores. In the original sample one of the two comparisons approached significance, while both differences were significant in the second sample. Keeping in mind the exceptionally high rationally-weighted coefficients that would be required to be statistically greater than the already high unit-weighted coefficients, it would seem that the rationally-weighted system has the edge and can probably be used advantageously to improve the validity of the leadership scale. It is to be expected that scores derived from the two systems will correlate moderate-to-fairly high since both are derived from the same basis response to the same items.

While the present study lends substantial support to the use of self-report data as one type of leadership criterion, it also raises a number of questions for future investigation. Specifically, more research into the multitrait-multirater methodology is needed to answer the questions: Who are to be the raters? What trait(s) should be measured? What are the determinants of effective performance?

TABLE 1

Self-Report Leadership Scale Item Weights

Item	Unit Weight	Rational Weight
Class president	1	6
Class vice-president	1	4
Class secretary or treasurer	1	3
Captain or co-captain of varsity athletic team	1	5
First team in some varsity sport	1	2
On squad but not on first team	1	0
President or vice-president of HS club, interest group or honor society	1	5
Editor of school newspaper or yearbook	1	8
Cheerleader for varsity sports	1	4
Drum major, head majorette, president of band	1	8
President or vice-president of club, group or organization outside of school	1	3
	11	48

TABLE 2

INTERCORRELATIONS BETWEEN PEER RATINGS, TEACHER RATINGS, RATIONALLY-WEIGHTED SELF REPORT SCALE SCORES (R-SELF), AND UNIT-WEIGHTED SELF REPORT SCALE SCORES (U-SELF)

	Peer	Teacher	R-Self	U-Self
Peer	-	.728*	.635*	.562*
Teacher		-	.686*	.683*
R-Self			-	.930*
				-

* p.<.001

REFERENCES

Campbell, D. Leadership and its effects upon the group. Monograph No. 83. Columbus: Ohio State University Bureau of Business Research, 1956.

Guilford, J. Psychometric Methods. New York: McGraw-Hill, 1954.

Guion, R. Personnel Testing. New York: McGraw-Hill, 1965.

Kelley, T. The selection of upper and lower groups for the validation of test items. Journal of Educational Psychology, 1939, 30, 17-24.

Kirchner, W., & Nichols, L. Utility of teacher, peer, and self-ratings for prediction of student behavior. Journal of Counseling Psychology, 1965, 12 (2), 192-195.

Lawler, E. Ability as a moderator of the relationship between job attitudes and job performance. Personnel Psychology, 1966, 19, 153-164.

Prien, E., & Liske, R. Assessments of higher level personnel: III. Rating criteria: a comparative analysis of supervisor ratings and incumbent self-ratings of job performance. Personnel Psychology, 1962, 15 (2), 187-194.

Roadman, H. An industrial use of peer ratings. Journal of Applied Psychology, 1964, 48, 211, 214.

Weinberg, C. Institutional differences in factor associated with student leadership. Sociological and Social Research, 1965, 49 (4), 425-436.

Werdelin, I. Utility of teacher ratings, peer ratings, and self ratings of behavior in school. Educational and Psychological Interactions, 1966, 11, 19.

Wherry, R. & Fryer, D. Buddy ratings: Popularity contest or leadership criterion? Personnel Psychology, 1949, 2, 147-159.