Pre-Service Identification of Talented Teachers through Non-Traditional Measures:
A Study of the Role of Affective Variables as Predictors of Success in Student Teaching

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Background

It is the belief of many that the improvement of American education hinges on the improvement of teaching. It is reasoned that, since the achievement of public school students seems to be related to the quality of teaching, one of the quickest ways to improve student achievement is to improve the quality of teachers.

Much has been written about the need to improve the quality of America's teachers. During the 1980s, various reform reports (Adler, 1982; American Association of Colleges for Teacher Education, 1985; Goodlad, 1983; Holmes Group, 1986; National Education Association, 1982; Sizer, 1984) have suggested that the preparation and retention of high quality teachers for our nation's schools are critical prerequisites for improving public education.

The quality of our nation's teachers has been openly questioned. *A Nation at Risk* (National Com-

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mission on Excellence in Education, 1983), *High School* (Boyer, 1983) and *High School and Beyond* (National Center for Educational Statistics, 1980) are reform reports that have cast doubts about the academic qualities of teachers.

Several studies have been conducted regarding the academic ability of teachers. Vance and Schlechty (1982) and Weaver (1979) concluded that teaching attracts students of low academic ability and fails to attract brighter students. Lanier and Little (1986) concluded that teaching does attract and retain persons with high ability, but that teachers are underrepresented in the upper range of academic talent and overrepresented in the lower talent range. Other studies have shown that education students compare favorably with other students (Fisher & Feldman, 1985; Guyton & Farokhi, 1985).

A widely held assumption exists that there is a strong relationship between academic ability and good teaching. Traditionally, teacher education programs have focused on academic indicators in the form of grade-point averages, test scores, and basic skills. Fisher and Feldman (1985) surveyed 530 NCATE-accredited institutions and found grade-point average to be the most often reported requirement for admission to the teacher education program. Approval from faculty members, some type of academic achievement test, and competency exams were the other requirements cited by most of the institutions surveyed. Similarly, Shank (1978) found that 96.8 per cent of teacher education programs use grade-point average as an admission criterion. Hyman (1984) summarized the logic of teacher testing as: "Those who pass the test will be more effective teachers than those who do not" (p. 14).

Some educators have questioned the premise that academic quality and good teaching are related. Pugach and Raths (1983) found a negative correlation between National Teacher Examination scores and the achievement of education students. Nelson and Wood (1985) found that only general methods courses grade-point average was significantly related to college supervisor ratings of student teachers. Quirk, Wilten, and Weinberg (1973) found that general knowledge test scores were not correlated with ratings in clinical experiences. Dobry, Murphy, and Schmidt (1985) also found little relationship between the Professional Knowledge portion of the National Teacher Examination and ratings for student teaching. Guyton and Farokhi (1987) found that, while basic skill ability may be a good predictor of subject matter knowledge, basic skills do not appear to be related to on-the-job performance.

The work of Riggs and Riggs (1990-91) supports the conclusion that traditional measures have little relationship to teaching success and suggests that achievement tests, having no relationship to performance in teacher education programs, "create the potential for just litigation" (p. 45). They found that, with the exception of the writing score on the California Basic Educational Skills Test (CBEST), neither scores on the CBEST nor on the National Teacher Examination correlated with teaching performance.

Very few studies have investigated the relationship of teachers' affective characteristics to success in teaching. Some studies have explored the possibility that effective and ineffective teachers could be identified on the basis of specific perceptions such as beliefs, attitudes, and values (Wasicsko, 1977). Johnson and Prom-Jackson (1986) found that teachers who were memorable to their former students displayed affective and conative characteristics that influenced their students as much as did cognitive attributes. These findings suggest that certain affective traits are desirable in teaching and that they may be more valuable selection tools than grade-point average or achievement test scores for teacher education programs.

One study strongly supports this position. Schmitz and Lucas (1990) tested the assumption that selected affective variables can serve as predictors of perceived teaching performance. This study suggests that it is possible, using correlational analysis, to highlight statistically significant relationships between an interview instrument and various indices of student teaching performance.

There seems to be little evidence to indicate that simply raising traditional admission standards, such as grade-point average or achievement test scores, will produce more successful teachers. The research on linking affective and attitudinal traits exhibited by prospective teachers with teaching performance appears to hold promise. The current study seeks to build upon what we know about how such traits in prospective teachers may be predictive of instructional potential.

Subjects

The subjects for the present study included 41 pre-service teachers in the education program at the University of Wyoming. The subjects were randomly selected from among 200 students registered for student teaching experiences during the fall semester of 1990. Of this group, interview results on the 54-item SRI Gallup Pre-Professional Teacher Interview were available for 37.

Instrumentation

The primary instrument of the present study was the Pre-Professional Teacher Interview, a 54-item questionnaire developed by SRI Gallup (Selection Research, Inc.). Other measures used in this correlational analysis with objective ratings of success in student teaching included scores on the California Achievement Test and grade-point average. Both of these measures are used in admitting students to professional study in Education at the University of Wyoming.

Student teaching performance was measured using a 16-item evaluation instrument. This instrument included 16 competencies by which University of Wyoming student teachers were evaluated. The instrument was developed by a nine-member committee of College of Education faculty after a thorough review of the literature related to effective teaching and learning and teacher assessment. This student teacher rating scale was adopted in 1986 and has since been employed

developmentally at mid-term and, at the end of the student teaching experience, as the final assessment tool. The competencies contained in the instrument are consistent with the research on effective teaching behaviors (see Brophy & Good, 1986).

Methodology

During the late summer of 1990, prior to the beginning of student teaching experiences, 41 student teachers were asked to participate in the study. The general nature of the study was explained to each student. All 41 student teachers agreed to participate. Interviews were administered prior to student teaching via telephone by a researcher trained in the administration of the SRI Gallup Pre-Professional Teacher Interview. All interviews were later scored by the same researcher who was trained as a certified interpreter of the SRI questionnaire.

At the completion of the 16-week student teaching experience, a 16-item performance-based evaluation of student teaching was completed by the supervising teachers of 38 of the student teachers. Grade-point average and California Achievement Test scores for each of the subjects were obtained from official university records. Additionally, percentile scores on the California Achievement Test were provided for the student teachers: Reading and Spelling scores were available for 20 student teachers, Language scores were available for 25 student teachers, Math scores were available for 17 student teachers, and Total Battery score was available for 16 student teachers.

Results

Scores from the SRI Gallup Pre-Professional Teacher Interview were correlated with ratings of student teacher performance. Correlations of interview scores with CAT scores were also determined.

The average total score on the SRI Gallup Pre-Professional Interview for the sample of prospective teachers at the University of Wyoming was 24.49 (s=5.15). Within this sample, the following themes occurred most frequently: Developer; Responsibility; Input Drive; and, Self-Discipline. Complete descriptive statistics for the sample are provided in Table 1.

Sixteen items were included in the performance-based assessment of student teaching. Items were scored on a scale of 0 to 4 (0=Below Norm; 4=Exceeds Norm). Across all 16 items, the grand average for the 38 student teachers in the sample was 3.58 (s=0.60). Complete results of the performance-based student teaching evaluation appear in Table 2.

The relationship between total score on the interview and the performance-based student teaching evaluation was explored. The relationship of total score on the interview with the grand average of the 16 items was statistically significant, the resultant correlation being .31 (p<.05). Total score was positively correlated with

Table 1
SRI Gallup Pre-Professional Teacher Interview Theme and Total Score (n=37)

Theme	Average	Standard Deviation
Achiever	1.87	1.34
Stimulator	2.38	1.48
Developer	3.68	1.13
Relator	2.51	1.39
Team	2.70	1.02
Responsibility	2.97	1.19
Command	2.62	1.06
Input Drive	2.89	1.33
Self-Discipline	2.87	1.29
Total Score	24.49	5.15

Table 2
Performance-Based Student Teaching Evaluation (n=38)

Evaluation Item with Average and Standard Deviation

1) Demonstrates a knowledge of how human beings develop and learn and integrates that knowledge into teaching, 3.57, .68.
2) Identifies and specifies instructional goals and objectives which are based on learners' needs, 3.54, .77 .
3) Designs instruction appropriate to goals and objectives as identified and specified for individual learners, 3.53, .74.
4) Implements teaching-learning activities that are consistent with identified instructional goals and objectives, 3.54, .64.
5) Demonstrates a variety of teaching skills, approaches, and learning styles appropriate to meeting specified objectives, 3.65, .63.
6) Designs and implements evaluation procedures which measure learner achievement and instructional effectiveness, 3.47, .65 .
7) Promotes effective classroom communication, 3.58, .89.
8) Uses resources appropriate to instructional objectives, 3.57, .68 .
9) Modifies instruction on the basis of learners' responses during instruction, 3.59, .72.
10) Demonstrates sufficient and appropriate knowledge of the subject matter which the prospective teacher is teaching, 3.54, .83.
11) Demonstrates a breadth and depth of knowledge outside the area(s) of specialization, 3.54, .68.
12) Organizes and maintains an effective classroom environment, 3.36 ,1.02.
13) Identifies and reacts with sensitivity to the needs and feelings of learners, 3.67, .62.
14) Works effectively as a member of a school staff, 3.70, .56.
15) Analyzes and strives to improve his/her teaching effectiveness, 3.71, .64.
16) Exemplifies physical and mental health such that he/she is able to assume a normal teaching load, 3.71, .58.

Grand Average: 3.58, .60.

15 of the 16 evaluation items and was significantly correlated with Items 2, 3, 4, 6, and 8. Student teachers scoring higher on the SRI Gallup Interview were generally rated higher than other student teachers with regard to:

> identifying and specifying instructional goals and objectives which are based on learners' needs,
>
> implementing teaching-learning activities that are consistent with identified instructional goals and objectives,
>
> using resources appropriate to instructional objectives,
>
> designing and implementing evaluation procedures which measure learner achievement and instructional effectiveness, and
>
> designing instruction appropriate to goals and objectives as identified and specified for individual learners.

In studying the significant relationships discovered during the correlational analysis of themes to the 16 performance-based student teaching evaluation items, the following significant relationships were observed:

> Student teachers with higher evidence of **Stimulator** were rated significantly higher in terms of:
>> designing and implementing evaluation procedures which measure learner achievement and instructional effectiveness,
>>
>> implementing teaching-learning activities that are consistent with identified instructional goals and objectives,
>>
>> identifying and specifying instructional goals and objectives which are based on learners' needs,
>>
>> demonstrating a breadth and depth of knowledge outside the area of specialization, and
>>
>> designing instruction appropriate to goals and objectives as identified and specified for individual learners.
>
> Those with higher evidence of **Relator** were rated higher in terms of using resources appropriate to instructional objectives.
>
> Those with higher evidence of **Team** were rated significantly higher in terms of:
>> designing and implementing evaluation procedures which measure learner achievement and instructional effectiveness,
>>
>> demonstrating a knowledge of how human beings develop and learn and integrating that knowledge into teaching,
>>
>> demonstrating sufficient and appropriate knowledge of the subject matter which the prospective teacher is teaching,
>>
>> demonstrating a breadth and depth of knowledge outside the area of specialization,
>>
>> organizing and maintaining an effective classroom environment,
>>
>> analyzing and striving to improve his/her teaching effectiveness,
>>
>> implementing teaching-learning activities that are consistent with identified instructional goals and objectives,
>>
>> modifying instruction on the basis of learners' responses during instruction,
>>
>> identifying and specifying instructional goals and objectives which are based

on learners' needs,

designing instruction appropriate to goals and objectives as identified and specified for individual learners,

working effectively as a member of the school staff,

demonstrating a variety of teaching skills, approaches, and learning styles appropriate to meeting specified objectives,

promoting effective classroom communication,

exemplifying physical and mental health such that he/she is able to assume a normal teaching load, and

using resources appropriate to instructional objectives.

Those with higher evidence of **Command** were rated significantly higher in terms of:

demonstrating a breadth and depth of knowledge outside the area of specialization,

designing and implementing evaluation procedures which measure learner achievement and instructional effectiveness,

implementing teaching-learning activities that are consistent with identified instructional goals and objectives, and

identifying and specifying instructional goals and objectives which are based on learners' needs.

Those with higher evidence of **Self-Discipline** were rated significantly higher in terms of identifying and specifying instructional goals and objectives which are based on learners' needs.

Those with higher evidence of **Team** and **Stimulator** were rated significantly higher on the overall grand average of the 16 items when compared with other students teachers at the University of Wyoming.

Complete results of this correlational analysis are shown in Table 3.

In further analysis, California Achievement Test (CAT) percentile scores were correlated with SRI Gallup theme, total score, and the performance-based evaluation grand average in order to assess whether significant relationships exited. From a thematic perspective:

Achiever was significantly correlated with the CAT Spelling percentile score.

Team was significantly correlated with CAT percentile scores on the Language Mechanic subtest and the Language total subtest.

Responsibility was significantly negatively correlated with the Language Mechanics subtest and was significantly positively correlated with the Math Computation subtest.

Input Drive was significantly negatively correlated with the Reading Vocabulary and Reading total subtests.

Eight of the nine themes were not significantly correlated with the total battery percentile scores on the CAT. Input Drive was significantly negatively correlated with the total battery percentile score on the CAT. Total score on the interview was not significantly related to any of the CAT subtest scores and was not significantly related to the total battery percentile score.

Table 3

Correlation of Themes and Total Score
With Performance-Based Student Teaching Evaluations

Correlation with:

Evaluation Item	1	2	3	4	5	6	7	8	9	Total
1) Knowledge of human beings and integration of knowledge.	.02	.2	-.12	.24	.42	.08	.17	-.08	.10	.26
2) Identifies goals and objectives based on learners' needs.	.12	.41	-.13	.24	.34	.22	.30	.08	.31	.47
3) Designs instruction appropriate to goals and objectives.	.20	.29	-.16	.15	.34	.16	.22	-.08	.14	.30
4) Implements learning activities that are consistent with goals and objectives.	-.02	.44	-.15	.24	.35	.27	.34	.02	.23	.43
5) Demonstrates a variety of skills, approaches, and styles.	.07	.14	-.04	.11	.32	.04	.25	-.17	.04	.17
6) Designs and implements procedures which measure learner achievement .	.05	.46	-.10	.02	.54	.12	.35	-.12	.15	.35
7) Promotes effective classroom communication.	.16	.13	-.14	.12	.32	.03	-.04	.02	-.03	.14
8) Uses resources appropriate to objectives.	.09	.26	-.05	.33	.30	.11	.22	.08	.15	.37
9) Modifies instructionon basis of learners' responses.	.05	.20	.00	.29	.35	.04	.16	-.11	.13	.27
10) Demonstrates knowledge of subject matter.	.07	.21	-.16	.14	.42	-.03	.20	-.01	.08	.22
11) Demonstrates a breadth and depth of knowledge outside area of specialization.	-.03	.38	-.10	.08	.39	.06	.38	.00	-.07	.26
12) Organizes and maintains an effective classroom environment.	.26	.08	.01	.22	.37	.04	.00	-.15	.03	.20
13) Identifies and reacts with sensitivity to the needs and feelings of others.	.19	.17	.12	.13	.13	.09	.27	-.1	-.11	.20
14) Works effectively as a member of a school staff.	.23	.17	-.30	.02	.34	-.05	-.17	-.29	-.07	-.03
15) Analyzes and strives to improve his/her teaching.	.09	.25	-.18	.13	.37	.15	.01	-.16	.20	.21
16)Exemplifies physical and mental health such that he/she is able to maintain a normal teaching load.	.20	.16	-.16	.26	.31	.11	.13	-.05	.16	.28
Grand Average	.13	.29	-.12	.20	.42	.10	.20	-.08	.11	.31

p<.05 (One-tailed), 1=Achiever, 2=Stimulator, 3=Developer, 4=Relator, 5=Team, 6=Responsibility, 7=Command, 8=Input Drive, 9=Self-Discipline

The performance-based evaluation grand average across all 16 items was not significantly related to any of the CAT subtest scores, nor was it significantly related to the total battery percentile score on the CAT. Complete results of this correlational analysis are provided in Table 4.

Table 4

Correlation of Themes, Total Score,
and Supervisor Student Teaching Evaluation with CAT Scores

CAT Score	Correlation to:										Evaluation Grand Avg.
	1	2	3	4	5	6	7	8	9	Total	
Rdg. Voc.	-.10	.13	-.23	-.38	.01	-.02	.25	-.63	.11	-.20	-.14
Rdg. Comp.	.39	.01	.09	-.1	-.19	.32	.18	-.17	-.21	.05	-.11
Rdg. Tot.	.20	.02	-.09	-.38	-.18	.20	.22	-.54	-.15	-.17	-.13
Spelling	.56	-.28	-.05	.29	.03	-.01	-.20	.15	-.40	.03	.04
Lang. Mec.	-.16	-.24	-.24	-.10	.46	-.49	-.29	-.05	-.20	-.33	.06
Lang. Exp.	.13	-.15	-.21	.25	.37	-.23	-.36	-.33	-.26	-.20	-.04
Lang. Tot.	.03	-.22	-.25	.17	.43	-.35	-.34	-.16	-.25	-.23	-.01
MathComp.	.22	.42	-.05	.03	.12	.54	-.06	-.46	.42	.30	.37
Math Conc. and Appl.	.17	.21	.09	.04	.00	.07	.20	-.34	.29	.17	.12
Math Tot.	.27	.32	.02	.06	.07	.28	.08	-.46	.39	.25	.30
Total Battery	.35	.08	-.01	.01	-.04	.17	.10	-.65	.07	.02	.16

$p < .05$ (One-tailed)

1=Achiever, 2=Stimulator, 3=Developer, 4 =Relator, 5=Team ,
6=Responsibility, 7=Command, 8=Input Drive, 9=Self-Discipline

Summary and Discussion

The purpose of the present study was to determine the degree of relationship between the SRI Gallup Pre-Professional Teacher Interview and performance-based student teaching evaluations completed by supervising teachers. The relationship between the SRI Interview and student achievement test (CAT) scores was also explored.

A statistically significant relationship (.31) was found between the total score on the SRI Interview and the grand average of the 16 items on the performance-based student teaching evaluation. In addition, total score on the SRI Interview was found to be positively correlated with 15 of the 16 performance-based evaluation items.

The SRI Gallup Pre-Professional Teacher Interview, as a whole, was found not

to be significantly correlated with percentile scores received on the California Achievement Test. In addition, scores received by student teachers on the performance-based student teaching evaluation were not significantly correlated with scores received on the California Achievement Test.

The results from the present study corroborate those from earlier studies. Schmitz and Lucas (1990) found that affective and attitudinal traits exhibited by prospective teachers may prove to be better predictors of instructional potential than conventional academic variables. Likewise, the present study found that there was a definite relationship between scores on the SRI Gallup Interview and performance-based student teaching evaluations. Scores from a more conventional academic variable, the California Achievement Test, were found to not be related to scores on the SRI Gallup Interview or the performance-based student teaching evaluation.

Identification of valid and reliable predictors of teaching effectiveness could greatly enhance our ability to counsel students in professional education programs. Such predictors would also allow us to recruit more successfully prospective teachers who possess the necessary talents to be good teachers. Further examination of the value of structured interviews is warranted, not only early in the college experience of prospective teachers, but in high schools and middle schools as well.

It is also suggested that a serious effort be made to collect follow-up data as the student teachers in this sample enter into the field of teaching. In this way, an assessment of the relationship between actual teaching performance and the SRI Gallup Interview can be made. Exploration of this area and examination of the value of the structured interview in screening prospective teachers are currently in process at the University of Wyoming.

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