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ABSTRACT

Reading/writing skills of prospective elementary and secondary school teachers from 7 colleges located in 4 geographical areas of the United States were examined to discover what test-performance differences, if any, occurred among the 375 subjects. Test instruments included: the Nelson-Denny Reading Test (Form D); a Criterion-Referenced Test of Reading/Writing Competence; and a rating for evaluating prospective teachers' videotaped speech. These tests were administered prior to prospective teachers' field experiences or, roughly, at the end of their sophomore or beginning of their junior year. Pair-wise, comparisons--sex, level, schools, skills--revealed that 65 to 80 percent of the subjects were proficient in basic skills and that, positively and negatively, regional differences did affect percentages or skills performances. Implications of subjects' test performances for strengthening future teacher education programs conclude the report. Also included in the report are nine tables. (Author/JMK)

CONSORTIUM TO ASSESS THE READING/WRITING SKILLS OF PROSPECTIVE TEACHERS: FIRST REPORT

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Prospective teachers alleged lack of basic skills have attracted public attention (Leiser, 1981; Lyone, 1980) and, through media hyperbole, generated negative images of teachers' competence. To examine the accuracy of such charges, English-teacher educators from seven universities formed a consortium and agreed to test basic language skills (reading, speaking, writing) of their prospective teachers.

Consortium schools and their sample sizes are displayed in Table 1, below.

Insert Table 1
about here

The above listed totals can also be divided as follows: prospective elementary teachers, 151; prospective secondary teachers; 224. Originally, consortium members planned to test only prospective secondary teachers, but some consortium faculty also taught prospective elementary teachers and suggested that a comparison of test performances between the two groups might be a useful addition to the study.

Consortium members also agreed not to identify schools in the data which follow because: 1) comparisons between general categories (sex, level, regions, etc.) are the focus of this first report and the lack of specific information would make detailed comparisons suspect and 2) comparisons of minimal cutoff scores yield only general information -- again a questionable source for making specific institutional comparisons.

Instruments and Procedures

Consortium members agreed to use Penn State's test materials so that data could be more validly compared. These common materials were the Nelson-Denny

(ND) Reading Test (Form D), a Criterion-Referenced Test (CRT) of Reading/Writing Competence (Dupuis and Snyder, 1980) and a rating form (Snyder, 1981) for evaluating prospective teachers' videotaped speech. These tests were given prior to prospective teachers' field experiences or, roughly, at the end of their sophomore or the beginning of their junior year.

The N-D test because of its validity and reliability (.95 at the college level) and ease of administration (30 minutes) provides a score in three categories: vocabulary, comprehension and total. The CRT measures professional vocabulary, literal and inferential comprehension, and interpretation of tabular information. Comprehension levels are defined according to Taxonomy of Reading Comprehension (Barrett, 1972). Barrett's four levels (1, literal; 2, inferential; 3, evaluation; 4, appreciation) correspond roughly to Bloom's cognitive levels (Bloom, 1956). Barrett's Level 3 was tested through prospective teachers' written evaluation of an article ("What's New in Ability Grouping?" B. J. Wilson and D. W. Schmits, Phi Delta Kappan, April 1978). Specifically, prospective teachers were asked to read the Kappan article, complete the CRT on reading and then complete the writing sample. The entire procedure was completed by most students within the 75 minute class period. The writing assessment was scored holistically as per recommendations of the College Entrance Examination Board (Kirrie, 1979); holistic scores assigned went from 1 (low) to 4 (high).

All consortium members received the foregoing test materials as well as instructions for administering them to their prospective teachers. Some consortium members were unable to have their subjects complete all the provided materials but returned whatever materials were completed. Based upon the unevenness of data returned, only gross comparisons (elementary vs. secondary, male vs. female) were calculated along with overall cutoff scores in categories such as: reading, speaking and writing. The N-D total reading-cutoff score was set at the 40th percentile (based upon the publishers'

recommendations). Supplementing the publishers' recommendations were our correlational coefficients between the CRT and N-D taken by Penn State students (N = 210) over approximately a two-year period, which are displayed in Table 2, below.

Insert Table 2
about here

Cutoff scores for the CRT were somewhat arbitrarily set at 1 less than maximum for each objective or a total of 19 as displayed in Table 3 below. Also displayed are mean scores of critical varibles for over 200 prospective Penn State secondary teachers over a two-year period.

Insert Table 3
about here

Writing and speaking cutoffs follow CEEB recommendations for holistic scoring; that is, 3 of a possible 4, is the minimal acceptable level of competence.

Consortium data collected with the above-described instruments were treated statistically with conventional computer programs for same, namely, analysis of variance (ANOVA), Pearson Product-moment Correlation Coefficient (PPMCR), and Frequency Analysis with Chi-square (FAWCS).

The data provided by the 375 subjects from the seven schools in the consortium, after treatment by the previously described statistical programs, yielded over 300 pages of informational printouts. Some of that information affirmed conventional wisdom: the fact that there were significantly more women than men in elementary and secondary education in all consortium schools. While such information seemed obvious, we felt obligated to check it.

More specifically, for each consortium school, men were compared to the women: by numbers enrolled, by level (elementary vs. secondary) and by scores achieved on test batteries (N-D, CRT, writing and speaking), and by total and

percentile scores. These data for each school were then compared with every other school in the consortium by overall performance and by individual tests or subtests (the vocabulary score as subtest of the N-D, for example). Such detailed comparisons explain why over 300 pages of printouts were generated.

Finally, as mentioned previously, not all schools supplied all test data; consequently, many of the tables which follow have different n's.

Results

Generalizations about the prospective teachers from the seven schools in the consortium are as follows: about one-third to one-fifth of the 375 subjects fall below the minimal cutoff scores established for this study. That judgment varies with the particular test used; for example, less than 15 percent fail to meet the cutoff speech skill score whereas 32 percent fail to meet the CRT score. Where SAT scores were available (only two schools provided same) the average score for prospective teachers was 1000. Reading scores with standardized (N-D) tests tend to be much better than CRT scores. Prospective teachers' writing skills vary widely with particular institutions, but their overall performance is better than the popular media imply.

An overview of correlational variables can be found in Table 4, below. Significant correlations displayed on Table 4 confirm, for the most part, conventional expectations; for example, that subjects' "vocabulary" scores on the N-D imply that better language performance for women (n = 252) over men (n = 118) is probable. That same vocabulary factor influences "comprehensive" (comp.) and "total" scores within the N-D framework. Other speculations about significant variable correlations will be found in the Discussion section.

Insert Table 4
about here

Typical of the data generated by statistical treatment, (N-D -- "vocabulary"

scores) by schools which supplied same is the display in Table 5, below.

Insert Table 5
about here

As mentioned previously, not all schools provided all test data, so the numbers listed in Table 5 are not related to the enrollments listed for consortium schools (Table 1). Notice, however, the percentage distributions among schools, and keep in mind that the arbitrary cutoff score for vocabulary in the N-D test was 40.

Table 6 is a representative sample of the unevenness of the data submitted and the need to examine, carefully, the percentages in column 3 before making inferences about a given school's effect on total percentages. Speculations about such influences will be found in the Discussion section.

Insert Table 6
about here

Tables 7 and 8 present "comprehension" and "total" N-D scores for consortium schools which provided same. As expected (see Table 4) there is significance between students' N-D scores and their writing scores. Each school's percentage in Tables 7 and 8 has to be examined to determine any given school's potential influence on the overall percentages. Speculations about these influences can be found in the Discussion section.

Insert Table 7
about here

Insert Table 8
about here

Since consortium subjects' writing and speaking skills were holistically assessed (Kirrie, 1979) only percentages were used in examining those basic skills. Typical of the records generated by the percentage approach is that found in Table 9, below.

Insert Table 9 about here

The holistic scoring for speech and writing complements "total" N-D scores, but for the next consortium assessment, the writing test should be supplemented with a primary traits test where more detailed skills -- unity, coherence, emphasis, etc. -- are rated.

Discussion

The unevenness of the data provided by consortium schools makes interpretations tentative and subject to table-by-table qualifications. Consortium schools which provided data in some areas failed to provide it in other areas. Even where schools were consistent in providing data, the n's varied from test to test. Inferences to be drawn from such data tend to be generalized and to provide conventional wisdom, or they suggest sampling enigmas which require more robust data before significant interpretations can be made.

In spite of the foregoing limitations, tentative findings which can be supported by the consortium data provided are as follows:

(1) of the consortium's 375 prospective teachers from seven universities, one-fifth to one-third of the total group scored below cutoff scores for minimal skills. It is important to note that prospective teachers who are below cutoff scores are given the opportunity to reach minimal standards or to change their programs before they enter student teaching. When such students complete a remedial program, between 5 and 10 percent of a given group of prospective teachers could be classified as lacking minimal competency in basic skills. Those who fail to complete

the remedial program or who voluntarily leave the program after failing to make minimal cutoff scores are counseled, where possible, into programs other than teaching.

(2) in spite of the almost common one-third of sample below cutoff scores in all the basic skills tests, there are some widely divergent contributions to that fraction from consortium schools. In some cases, prospective elementary teachers in one or two schools negatively skew the overall variable (N-D "comprehension" scores, for example); in other cases the better performance of prospective elementary teachers (writing, for example) skew percentages in a positive direction, depending upon the schools which submit the data; that is, prospective elementary teachers from schools with high admission standards write better than students from schools without such standards and thereby change overall percentages for assessment of writing skills.

(3) differences in writing by sex ($p > .53$) were not significant, and that finding for this study, is contrary to the stereotype of women's better language skills.

(4) vocabulary scores, by level, favor prospective secondary over elementary teachers; again, that contrary finding (because there are more women in elementary education) may be a function of the diversified range of subjects required of prospective secondary teachers.

(5) holistic test scores for speech (where a score of 2 or below is considered unsatisfactory) significantly favor prospective secondary (80 percent above the "2" score) over elementary (60 percent above the "2" score) teachers. This finding is analagous to the Penn State study (Dupuis and Fagan, 1983) where 85 percent of prospective secondary teachers (n = 107) scored above the "2" level.

Perspectives

The unevenness of consortium data makes our conclusions tentative. Political fears of the cooperating schools make the collection of data extremely difficult. Researchers at some consortium schools were given no help at all in carrying out the basic skills testing program; researchers at those schools had to use their own time and money in collecting and forwarding data; they were constantly reminded not to allow the school to be identified and, in one case, that fear of identification caused a prospective consortium school to withdraw from the study because of an administrator's request.

Given such opposition from College of Education administrators, our next step in this longitudinal study of prospective teachers' basic skills may be even more difficult. That next step is to have students from other colleges within consortium schools (Liberal Arts, Science, Human Development) take the basic skills tests and, ideally, have those schools provide us with S.A.T. scores so that test-performance comparisons between their majors in a discipline and prospective teachers of those disciplines can be made. We are pessimistic about getting such cooperation, but we feel that we must try because such data can do much to offset public disillusionment about the quality of prospective teachers.

In a related study which examined the qualifications of College of Education students (Horan, 1982) reported that with a study of 3,802 graduate courses and 6,126 undergraduate courses at ten colleges within Penn State University

> -- when adjustments are made for class characteristics and student competencies (such as S.A.T. scores and high school G.P.A.), the College of Education does <u>not</u> differ, significantly, from seven other colleges [within the University] (emphasis added).

In other words, the media's insistence that prospective teachers are the worst of college populations is a categorical judgment which needs qualification from institution to institution. More specifically, administrators in all colleges -- not just Education -- need to examine the basic skills of their

students to discover whether prospective teachers are at greater risk than their counterparts in other colleges which comprise a university. If we are successful in our campaign to gather such data, they will be the basis for our next consortium report.

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T A B L E 1

Consortium Schools' Participants

	U. of Tennessee, Chattanooga	U. of Cincinnati	Cal. State U. at Bakersfield	U. of Georgia	U. of Pittsburgh	U. of Wisconsin, Green Bay	Penn State University	TOTAL
Male	10	10	23	12	4	11	48	118
Female	47	55	44	27	8	32	44	257
TOTAL	57	65	67	39	12	43	92	375

T A B L E 2

Correlations Between N-D (Form D) and CRT

CRITERION-REFERENCED TEST		NELSON-DENNY (%ile)
Vocabulary	.25**	Vocabulary
Lo Comprehension	-.15	Comprehension
Hi Comprehension	.30**	Comprehension
Data Interpretation		
TOTAL	.27**	TOTAL

**p < .01

T A B L E 3

Mean Scores of Critical Variables
PSU Students 1980-82

VARIABLE	$\bar{x}$		n
Nelson-Denny Reading Test (%iles)			207
Vocabulary	62		
Comprehension	61		
TOTAL	64		
Criterion-Referenced Test -- Reading		Possible	
Vocabulary	4.96	(6)	217
Comprehension -- Low	4.74	(5)	
-- High	7.13	(9)	
Date Interpretation	2.17	(3)	
TOTAL	18.93	(23)	
Writing Assessment	2.90	(4)	210
Speaking Assessment	2.91	(4)	207
	71.77	(100)	142

TABLE 4

Correlations of Consortium Study Variables

X	PAIR	Y	R	MEAN X	MEAN Y	ST.DEV.X	ST.DEV.Y.	N	df	r.05	r.01
VOCAB	3- 1	SEX	0.109	53.248	1.595	17.535	0.493	153	151	.16	.21
VOCAB	3- 2	LEVEL	0.238**	53.248	1.908	17.535	0.289	153	151	.16	.21
COMP	4- 1	SEX	0.103	48.045	1.600	10.108	0.491	155	153	.16	.21
COMP	4- 2	LEVEL	-0.095	48.045	1.910	10.108	0.288	155	153	.16	.21
COMP	4- 3	VOCAB	0.550**	47.954	53.248	10.090	17.535	153	151	.16	.21
TOTAL	5- 1	SEX	-0.060	105.214	1.610	65.923	0.489	159	157	.15	.20
TOTAL	5- 2	LEVEL	0.100	105.214	1.874	65.923	0.333	159	157	.16	.20
TOTAL	5- 3	VOCAB	0.335**	106.190	53.248	66.798	17.535	153	151	.16	.21
TOTAL	5- 4	COMP	0.202*	106.190	47.954	66.798	10.090	153	151	.16	.21
CRT	6- 1	SEX	-0.067	18.219	1.695	2.680	0.461	302	300	.11	.15
CRT	6- 2	LEVEL	0.273**	18.219	1.497	2.680	0.501	302	300	.11	.14
CRT	6- 3	VOCAB	0.218	19.360	52.314	1.897	16.251	86	84	.21	.27
CRT	6- 4	COMP	0.225*	19.420	51.727	1.922	7.743	88	86	.21	.27
CRT	6- 5	TOTAL	0.315**	19.196	102.207	1.979	22.444	92	90	.21	.27
WRITE	7- 1	SEX	0.076	2.767	1.756	0.801	0.430	373	371	.10	.13
WRITE	7- 2	LEVEL	0.295**	2.767	1.627	0.801	0.484	373	371	.10	.13
WRITE	7- 3	VOCAB	0.254**	2.805	52.138	0.525	16.240	87	85	.21	.27
WRITE	7- 4	COMP	0.222**	2.809	51.596	0.520	7.798	89	87	.21	.27
WRITE	7- 5	TOTAL	0.275*	2.796	101.935	0.523	22.475	93	91	.21	.27
WRITE	7- 6	CRT	0.342**	2.649	18.306	0.811	2.617	271	269	.12	.16
SPEECH	8- 1	SEX	0.058	2.756	1.563	0.688	0.498	119	117	.18	.24
SPEECH	8- 3	VOCAB	0.072	2.699	54.438	0.570	16.174	73	71	.23	.30
SPEECH	8- 4	COMP	0.205	2.680	51.693	0.573	7.427	75	73	.22	.29
SPEECH	8- 5	TOTAL	0.127	2.699	105.767	0.570	21.307	73	71	.23	.30
SPEECH	8- 6	CRT	0.106	2.756	19.101	0.688	2.323	119	117	.18	.24
SPEECH	8- 7	WRITE	0.220*	2.746	2.842	0.663	0.632	114	112	.18	.24

* $p < .05$

** $p < .01$

TABLE 6

Means, Variance and Chi-square, For CRT Scores
From Six Consortium Schools (rounded percentages in parentheses)

School	Score 20 or higher (1)	Score 18 or 19 (2)	Score 17 or lower (3)	Total	$\bar{X}$	Variance	DF	Chi-sq.	F	P
1 Obs.	51 (60)	25 (29)	9 (11)	85 (28)	20	3.37	12	48.88	7.71	.01
2 Obs.	10 (26)	11 (29)	17 (45)	38 (13)	17	13.0				
3 Obs.	8 (67)	1 (8)	3 (25)	12 (4)	19	10.0				
4 Obs.	11 (19)	22 (39)	24 (42)	57 (19)	18	6.0				
5 Obs.	9 (21)	17 (40)	17 (40)	43 (14)	18	6.0				
6 Obs.	21 (32)	19 (29)	25 (39)	65 (22)	18	7.0				
TOTAL	110 (37)	96 (33)	95 (32)	301						

TABLE 5

Means, Variances and Chi-square, For N-D Vocabulary Scores For Three Consortium Schools (rounded-off percentages in parentheses)

School	Score 61 or higher (1)	Score 49 - 60 (2)	Score 43 or lower (3)	Total	$\bar{X}$	Variance	DF	Chi-sq.	F	P
1 Obs.	26 (36)	26 (36)	21 (29)	73 (48)	54	262	4	9.66	4.00	.05
2 Obs.	26 (40)	19 (29)	20 (31)	65 (43)	35	366				
3 Obs.	1 (8)	3 (23)	9 (69)	13 (9)	41	119				
TOTAL	53 (35)	48 (32)	50 (33)	151						

TABLE 7

Means, Variance and Chi-square, For Comprehension N-D Scores
From Three Consortium Schools (rounded percentages in parentheses)

School / Comprehension	Score 54 or higher 1	Score 43 - 53 2	Score 42 or lower 3	Total	$\bar{X}$	Variance	DF	Chi-sq.	F	P
1 Obs.	34 (45)	28 (37)	13 (17)	75 (49)	52	55.	4	19.73	15.07	.01
2 Obs.	11 (17)	27 (41)	28 (42)	66 (43)	43	119.				
3 Obs.	7 (54)	2 (15)	4 (31)	13 (8)	51	104.				
TOTAL	52 (34)	57 (37)	45 (29)	154						

TABLE 8

Means, Variances and Chi-square, For Total N-D
Scores From Three Consortium Schools (rounded percentages in parentheses)

School \ Total	Score 113 or higher 1	Score 88 – 112 2	Score 87 or lower 3	Total	$\bar{X}$	Variance	DF	Chi-sq.	F	P
1 Obs.	28 (39)	30 (42)	14 (19)	72 (46)	105	453.	4	12.06	4.59	.01
2 Obs.	19 (29)	20 (30)	27 (41)	66 (42)	98	786.				
3 Obs.	2 (11)	8 (42)	9 (47)	19 (12)	88	488.				
TOTAL	49 (31)	58 (37)	50 (32)	157						

TABLE 9

Percentage Writing/Speech Scores and Chi-square
From Four Consortium Schools (rounded percentages in parentheses)

Write / Speech (Low → High)	1	2	3	4	Total	DF	Chi-sq.	P
1 Obs.	0 (0)	2 (65)	1 (33)	0 (0)	3 (2)	9	16.42	.06
2 Obs.	2 (6)	11 (32)	18 (53)	3 (9)	34 (30)			
3 Obs.	1 (1)	7 (11)	52 (79)	6 (9)	66 (58)			
4 Obs.	1 (9)	1 (9)	7 (64)	2 (18)	11 (10)			
TOTAL	4 (3)	21 (18)	78 (69)	11 (10)	114			

A B S T R A C T

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