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READING, A MAJOR FACTOR IN DETERMINING SUCCESS IN NURSING EDUCATION

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For the last twenty-eight years the Reading Center and Clinic, at Western Michigan University, has been testing applicants for the Bronson School of Nursing. This school has room for only eighty-six entering freshmen each year; so it is vital that only the most capable applicants be selected.

Our examination procedure for applicants to the school includes: a nurse aptitude test, an arithmetic test for nurses, the Ohio State Psychological Inventory,* the Draw-A-Person test, various personality measures, and an informal interview. It has been our subjective view that the most important factor in predicting success in nursing education was the O.S.P.I., and thus we have used the percentile of the total score as the primary criterion for "pass" or "fail." The results of the other tests and techniques are given weight, too, in varying degrees, but the fortieth percentile on the O.S.P.I. is used as the cut-off point. The present study was initiated to verify or to nullify our contention that language skills—and particularly reading—are vital to academic success in nursing education. We also decided to ascertain if self-concept were a factor in success.

The time period of study was 1944-1968. The nurse applicants starting the three-year program in 1968 were eligible for graduation by 1971. Over the last twenty-four years of the study, 3,586 applicants have been tested and interviewed. Of these people, 1,986 passed the fortieth percentile O.S.P.I. criterion and 1,600 failed. Of the 1,986 people who passed, 843 subsequently graduated and 1,143 failed to graduate. Of the 1,600 people who failed, some (the actual number is unknown) were permitted to attend the school and 136 of them actually graduated.

* Hereafter referred to as O.S.P.I.

SUBJECTS*

Total Number	3,586
Number Passing:	1,986
Number passing and graduating	843
Number passing and not graduating	1,143
Number Failing:	1,600
Number failing and not graduating	1,464
Number failing and graduating	136

* Since the number of male applicants has been so small (about 10 or 15 out of a total of 3,586), sex was not used as a variable.

DRAW-A-PERSON TEST SCORES OF PASSING AND FAILING NURSE APPLICANTS

From 1966-1968 four hundred and thirty-one applicants were given the Draw-A-Person Test. Using the Smith-Pervanger adaptation of the Hayworth-Normington Measure of Self Concept, the results of the scoring system were as follows:

	Number	Mean (Parameter, 1-4)
Passing Nurse Applicants	267	2.584
Failing Nurse Applicants	164	2.348

The *t* ratio is 3.16 which is significant at the .01 level of confidence. Thus, it can be stated that the Draw-A-Person Test is discriminating between passing and failing applicants and that self concept is a factor in the success of the applicants.

An interesting fact, however, is that the correlations between Draw-A-Person scores and any of the O.S.P.I. subtests or totals are invariably poor. It can be hypothesized, therefore, that the Draw-A-Person Test is measuring different factors from those measured by the O.S.P.I.

O.S.P.I. TEST SCORES OF PASSING AND FAILING NURSE APPLICANTS

As a group, the passing-graduates attained significantly higher mean raw scores (.01 or above) on the three subtests and total than did the passing-non-graduates. For both the graduates and non-graduates of the passing group, the standard deviations for all three subtests indicated a relatively low dispersion of raw scores. The total mean score received the greatest spread of scores. The performance on this test suggested the achievement of relative homogeneity for each group. The standard deviations of the failing group indicated narrower

clustering of raw scores for both the graduates and non-graduates. Although the mean raw score was greater for the fail-graduate than failing-non-graduates, the Language Usage mean scores did not differ significantly. For the combination of applicants (whether they passed or failed the test criterion), the graduates received much higher raw scores than the non-graduates. The standard deviations for the combined groups indicated a wider dispersion of scores. (See Table 1)

A high correlation existed between the subtests and total score for the passing groups. The failing groups maintained a moderate correlation between the subtests and total. However, an extremely low correlation existed between individual subtests for the failing-graduate group. (See Table 2)

CONCLUSIONS

1. The Draw-A-Person Test is useful as a predictor of success in nursing school.
2. Total scores of the O.S.P.I. are significantly higher for the graduates of both the passing and failing groups than for the non-graduates of each.
3. The vocabulary subtest scores are significantly higher for graduates than for non-graduates of both groups.
4. The least discriminating subtest for the failing group, between those who graduated and those who did not, is the language usage subtest.
5. The reading mean differs significantly between graduates and non-graduates of both the passing and failing groups.

According to our samples, the reading portion of the O.S.P.I. is the best predictor of success in nursing education whether the individual passed or failed the total test. This may mean that if a person fails the O.S.P.I. criterion but has an adequate reading score, his chances of successfully completing the nursing education are much improved.

Table 1—Subtest mean scores, standard deviations and t ratios for passing and failing nurse applicants who graduated and those who did not graduate

<i>Subtests</i>	<i>Passing Applicants</i>				<i>t</i>	<i>p</i> <
	<i>Graduate</i>		<i>Not Graduate</i>			
	<i>N=843</i>	<i>S.D.</i>	<i>N=1143</i>	<i>S.D.</i>		
Vocabulary Raw Score	17.252	4.598	16.675	4.480	2.803	.01
Language Usage Raw Score	34.001	8.556	32.636	8.232	3.589	.001
Reading Raw Score	37.790	6.507	36.044	6.558	5.880	.001
Total Raw Score	89.144	15.717	85.325	15.202	5.451	.001
	<i>Failing Applicants</i>					
<i>Subtests</i>	<i>Graduate</i>		<i>Not Graduate</i>		<i>t</i>	<i>p</i> <
	<i>N=136</i>	<i>S.D.</i>	<i>N=1464</i>	<i>S.D.</i>		
Vocabulary Raw Score	9.910	3.380	8.840	3.530	3.391	.001
Language Usage Raw Score	18.170	5.330	17.570	5.340	1.252	NS
Reading Raw Score	26.240	5.270	23.300	5.670	5.814	.001
Total Raw Score	54.380	8.460	49.700	10.290	5.141	.001

Table 2—Correlation of O.S.P.I. subtest percentile scores and total percentile scores for passing and failing nurse applicants who graduated and those who did not graduate

<i>Subtests</i>	<i>Graduate</i> <i>N=979</i>		<i>Not Graduate</i> <i>N=2607</i>		<i>t</i>	<i>p</i> <
	<i>Mean</i>	<i>S.D.</i>	<i>Mean</i>	<i>S.D.</i>		
Vocabulary Raw Score	16.230	5.120	12.270	5.550	19.429	.001
Language Usage Raw Score	31.800	9.840	24.170	10.080	20.319	.001
Reading Raw Score	36.180	7.500	28.890	8.770	23.030	.001
Total Raw Score	84.310	19.160	65.320	21.750	24.032	.001

<i>Group</i>	<i>Vocabulary and Language Usage and Reading</i>		<i>Vocabulary and Language Usage and Reading</i>	
	<i>Total</i>	<i>and Total</i>	<i>Total</i>	<i>and Total</i>
Passing-Graduate	.72	.84	.75	.49
Passing-Not Graduate	.71	.83	.75	.44
Failing-Not Graduate	.61	.70	.74	.21
Failing-Graduate	.48	.64	.65	.05

All correlations are significant at the .01 level except Failing-Graduate subtest percentiles: Vocabulary and Language Usage, Vocabulary and Reading and Language Usage and Reading