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ABSTRACT

Students in an Ohio community (363 males and 332 females) took the Iowa Test of Basic Skills in the spring of their eighth-grade year and the Ohio Ninth Grade Proficiency Test (ONGPT) in the following fall of their ninth-grade year. The scores from both tests, for a period of 3 consecutive years, were correlated to determine the predictability of passing or failing the ONGPT, based on the standardized test scores. The correlations were found to be significant for reading, mathematics, writing, and citizenship. It was also shown that the percentages of students failing the ONGPT who scored below the third stanine were high in three areas (reading--60 percent, mathematics--93 percent, and citizenship--90 percent). Therefore, stanine scores can be helpful predictors of the need for intervention programs. Three tables present study findings. (Contains 4 references.) (Author/SLD)

Are Iowa Test of Basic Skills Stanines Predictors of Success on Ohio's Ninth Grade Proficiency Test?

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Running head: STANINES AS PREDICTORS

Abstract

Students in an Ohio community took the Iowa Test of Basic Skills in the spring of their eighth grade year and the Ohio Ninth Grade Proficiency in the following fall of their ninth grade year. The scores from both tests, for a period of three consecutive years, were correlated to determine the predictability of passing or failing the Proficiency Test, based on the standardized test scores. The correlations were found to be significant (r ranged from .32 to .63, $p < .01$) for Reading, Math, Writing, and Citizenship. It was also shown that the percentages of students failing the Proficiency Test who scored below the third stanine were high in three areas (Reading--60 percent, Math--93 percent, Citizenship--90 percent). Therefore, stanine scores can be helpful predictors of the need for intervention programs.

Are Iowa Test of Basis Skills Stanines Predictors of Success On Ohio's Ninth Grade Proficiency Tests?

Substitute House Bill 231, passed in July 1987, mandated that all Ohio public school students pass a statewide high school proficiency test as one of the criteria used to determine the type of certificate or diploma earned for graduation. The purpose of the Proficiency testing program is to verify student achievement at the ninth and twelfth grade academic levels (Ohio Department of Education, 1990). The test covers four areas: reading, writing, mathematics, and citizenship. Currently, only the Ninth Grade Proficiency Test is being administered. Use of the Twelfth Grade Proficiency Test is to begin in the fall of 1993.

Examination of North Carolina's testing program revealed three major purposes for proficiency testing: to evaluate whether a student has mastered a basic set of skills and knowledge needed to function successfully in society; to hold schools responsible for teaching those skills; and to provide societal benefits by withholding school diplomas of students found to be deficient in those skills (Jaeger, 1991). Further, in Alaska, legislators anticipated that proficiency tests would determine the identity of students who needed remedial assistance toward the mastery of basic skills (Jaeger, 1991).

There has been much discussion about whether the Ninth Grade Proficiency Test is a valid instrument to evaluate competencies. A study done by Lanese (1992) suggested that there is a correlation between the Ninth Grade Proficiency Test and the Cleveland Public School District's stated competency objectives. This study compared the Proficiency Test skill objectives with the California Achievement Test and the eighth and ninth grade pupil performance objectives of the Cleveland School District. The results, though not strong, did suggest that the Ninth Grade Proficiency Test is a valid measure of skills in reading, writing, mathematics, and citizenship.

Robinson and Moore (1992) hypothesized that there was a significant correlation between scores on the Ohio Ninth Grade Proficiency and standardized tests in order to justify the substitution of a standardized test for the Proficiency. However, their study did not reveal a strong relationship between the two.

Since student performance on the Ninth Grade Proficiency Test is an important element in fulfilling requirements for graduation, and because of the cost in time and money to administer the Proficiency Test, it has become critical that school districts equip students to be successful on their first attempt. Being able to identify those students

who may need intervention before taking the Proficiency Test in order to increase their potential for success is, therefore, an important consideration.

Currently, the State of Ohio requires standardized testing in grades four, six, eight, and ten. Students are tested in areas of Reading, Math, Social Studies, Science, and Language Skills. The purpose of this study was to examine whether or not a relationship existed between scores from the eighth grade Iowa Test of Basic Skills (ITBS) and those from the Ohio Ninth Grade Proficiency Test. The objective was to identify a cut-off point (using stanine scores) on each section of the ITBS which could help administrators and counselors predict, with some degree of confidence, success or failure on each of the four related sections of the Ninth Grade Proficiency Test. Eighth grade students who performed below a given stanine score (cut-off point) in a specific area(s) would be recommended for an intervention program, including remediation and review, prior to the administration of the Proficiency Test in November of their ninth grade year.

Method

Subjects

Subjects for this study were 695 students (363 males, 332 females). They represented three entire, consecutive classes from a junior and senior high school in a community in

Ohio (1990--220 subjects; 1991--202 subjects; 1992--273 subjects). The population of that community was approximately 28,000, which included about 17,500 students attending the local state university. Thus, the demographics included a significant academic, rural, and blue-collar influence.

Instruments

The predictor variable for this correlational study was the standardized Iowa Test of Basic Skills (ITBS), Form J, a cognitive abilities test. It was normed in the spring of 1988, and administered as part of the Ohio state testing program. Four areas of the ITBS were examined: Language Skills (including spelling, Capitalization, Punctuation, Usage), Reading, Math (including Concepts, Computation, Problems), and Social Studies.

The criterion variable was the Ohio Ninth Grade Proficiency Test, which was first administered in Ohio in 1990. The Proficiency consisted of banks of test items constructed by a national test development company. The items were written according to specifications provided by Ohio teachers and were field tested in Ohio schools (Ohio Department of Education, 1990). The Proficiency Test covered four areas: Writing (Content, Organization, Language, Writing Conventions); Reading (Functional, Non-fiction, Fiction); Math

(Measurement, Arithmetic, Geometry, Data Analysis, Algebra); and Citizenship (Geography, Citizenship Knowledge, Government, Economics, Law, History).

Procedures

For the purpose of this study, scores were examined for subjects who were in eighth grade in the spring of 1990, 1991, and 1992, who then became freshmen the following fall. The students took the ITBS in the spring of their eighth grade year and the Ohio Ninth Grade Proficiency Test for the first time in the fall.

Stanines from the ITBS were recorded for each student in Reading, Language Skills, Math, and Social Studies. Scores from the Proficiency for each of those students were reported as Pass ("1") or Fail ("0") for Reading, Writing, Math, and Citizenship. In order to facilitate the relating of terms between the two instruments, "Language Skills" was recorded in the Tables as "Writing," and "Social Studies" was recorded as "Citizenship."

The scores were correlated at each stanine, as well as at three collapsed stanine levels: 1 = Below Average (Stanines 1, 2, and 3); 2 = Average (Stanines 4, 5, and 6); 3 = Above Average (Stanines 7, 8, and 9). Means and standard deviations were computed, as well. Finally, the percentage of students passing was determined at each stanine level.

Results

The Pearson Correlation indicated that the correlation of scores was significant in all areas: Reading--r (.47); Math--r (.63); Writing--r (.32); Citizenship--r (.61), p <.01. Passing the Writing section of the Proficiency had the lowest correlation with all four stanines. See Table I.

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Insert Table 1 about here.

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Means and standard deviations of the scores are reported in Table 2.

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Insert Table 2 about here.

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Scores on the ITBS were collapsed into stanine thirds and reported for the four areas in relationship to the percentage of students who failed the Proficiency sections at those thirds. The reporting was done this way in order to identify an appropriate cut-off point from the ITBS stanines, below which a significant percentage of students failed the Proficiency Test.

In general, students who scored in the Below Average stanine third in a given area tended to fail the related Proficiency section, with the exception of Writing. That is

supported by the low correlation coefficient for Writing which was reported earlier. The lowest Math and Citizenship stanine thirds, in particular, seemed to be appropriate predictors of failure on the Proficiency, at 93 percent and 90 percent respectively. The Below Average stanine third for Reading was also a significant predictor at 60 percent. The relationships between stanine thirds and all Proficiency sections are indicated in Table 3.

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Insert Table 3 about here.

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Discussion

The correlations derived from this study, which were found to be statistically significant, together with previous studies (eg. Lanese, 1992) and sources of Proficiency Test formation, suggest that the Ohio Ninth Grade Proficiency is a reasonable measure of competencies in Reading, Math, and Citizenship. Therefore, using stanines from a standardized achievement test (such as the ITBS) as predictors of potential success or failure on the Proficiency Test, seems to be justified.

The results of this study suggested that a cut-off point to identify students for intervention could be placed at the Below Average stanine third (Stanines 1, 2, and 3) for Reading,

Math, and Citizenship. The majority of students who scored at those stanines failed the Ninth Grade Proficiency in the related areas. The Writing section, however, seemed to function somewhat independently of other skill areas. That portion of the Proficiency Test is administered in a different manner than the Language Skills section of the ITBS, which may certainly affect the correlation reliability. Further study into reasons for that discrepancy should be conducted.

If ITBS scores are to be used as predictors or indicators, it is suggested that the standardized test be administered earlier in the eighth grade year. Then, the results would be available earlier in the year, allowing sufficient time to identify students and to develop an intervention program before the administration of the Ninth Grade Proficiency Test for those students in the fall of their freshman year.

Other variables which may affect the Ninth Grade Proficiency Test scores need to be investigated, such as test administration procedures, and content not yet taught but covered on the Proficiency Test.

There are still many questions to be answered about state-mandated proficiency testing. In the meanwhile, since school districts must identify methods to increase student success on those tests, it seems logical to utilize available indicators, such as standardized test scores, to predict

success or failure. That will provide an appropriate starting point for intervention programs.

References

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Table 1

Correlation Coefficients: ITBS Stanines and Passing the Proficiency

Stanine	Correlation Coefficient			
	RdPass	MaPass	WrPass	CiPass
RdStan	**.47**	.51	.27	.55
RdThird*	**.41**	.44	.23	.50
MaStan	.46	**.63**	.33	.52
MaThird	.45	**.58**	.31	.49
WrStan	.45	.51	**.32**	.50
WrThird	.39	.45	**.28**	.45
CiStan	.48	.56	.28	**.61**
CiThird	.46	.52	.26	**.60**

*StanThird 1 = 1, 2, and 3--Below Average; StanThird 2 = 4, 5, and 6 --Average; StanThird 3 = 7, 8, and 9--Above Average.

Table 2

*Means and Standard Deviations for Stanines on ITBS**

Stanines	Mean	SD
RdStan	5.9	1.8
MaStan	5.8	1.8
WrStan	5.6	1.7
CiStan	6.0	2.0
RdThird**	2.3	0.6
MaThird	2.2	0.6
WrThird	2.2	0.6
CiThird	2.3	0.7

*p <.01, two-tailed.
**StanThird 1 = 1, 2, and 3--Below Average; StanThird 2 = 4, 5, and 6--Average; StanThird 3 = 7, 8, and 9--Above Average.

Table 3

Percent Failing Proficiency and Their Corresponding ITBS Stanines

(Reported in Thirds)*

Stan Third		% Fail Rd Prof	% Fail Ma Prof	% Fail Wr Prof	% Fail Ci Prof
Rd	1	**60**	80	34	81
	2	**19**	37	12	33
	3	**1**	8	4	2
Ma	1	62	**93**	40	75
	2	16	**34**	8	30
	3	0	**0**	3	3
Wr	1	57	80	**37**	74
	2	15	30	**9**	27
	3	2	6	**3**	4
Cit	1	57	75	29	**90**
	2	22	42	14	**34**
	3	0	6	3	**3**

(N = 695)

* StanThird 1 = 1, 2, and 3--Below Average; StanThird 2 = 4, 5, and 6--Average; StanThird 3 = 7, 8, and 9-- Above Average.