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ABSTRACT

In the early 1990s, Texas teacher certification requirements were changed to include a passing grade on each of a series of comprehensive examinations of subject and professional knowledge. This study identified variables that predict success on the secondary professional development component of these tests--the Examination for Certification of Educators in Texas (ExCET). Data on a representative sample of 71 secondary preservice teachers at the University of Texas Pan American, where the student population is approximately 87 percent Hispanic, included practice ExCET scores; ExCET scores; Texas Academic Skills Program (TASP) scores in reading, math, and writing; ACT scores; overall GPA; and GPA in 18 credit hours of professional development education courses. Success on the ExCET exam for the professional development area was predicted reasonably well with a linear regression equation that included TASP reading scores, practice ExCET test scores, and ACT scores. Findings also suggest that raising the criteria for selection of preservice teachers in each of the three variables would result in higher proportions of students passing the ExCET on the first attempt. Implications for educators are that reading skills should be improved at the district level and practice ExCET sessions should be developed at the higher education level. Appendices present the test framework, ExCET sample item, and four data tables. (TD)

**HISPANIC PRESERVICE TEACHERS:
VARIABLES THAT PREDICT SUCCESS
ON TEACHER CERTIFICATION EXAMS**

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Hispanic Preservice Teachers: Variables That Predict Success on Teacher Certification Exams

Introduction

Education reform and the concept of teacher certification tests has been around since the beginning of the eighties; by the beginning of nineties some states had implemented or were in the process of implementing changes in their teacher education programs including establishing some measure of competency for prospective graduating teachers (Cornett, 1987). Texas replaced the Bachelor of Education Degree with a Bachelor of Interdisciplinary Studies Degree which requires an academic major along with 18 semester hours of education courses (including student teaching) and, for certification, a passing grade on each of a series of comprehensive examinations testing both subject and professional knowledge.

These certification tests known as the ExCET (Examination for Certification of Educators in Texas) are designed to test for mastery in the competencies that are spelled out in the ExCET Preparation Manual (Appendix A).

The competencies are, in turn, grouped under broader domains. For example, the framework for professional development, encompasses three domains: understanding learners, enhancing student achievement, and understanding the teaching environment; and fifteen competencies with five, six, and four competencies included in the domains, respectively. The ExCET format, itself, consists of vignettes followed by “best answer” multiple-choice items (Appendix B). Test takers who attain a score of 70% meet the criterion for passing; those who do not pass may repeat the test at a later date. Since education institutions, however, are under pressure to increase the passing rate of first time test takers, it behooves them to identify those variables which predict success on the ExCET, including education courses, and ExCET practice sessions, should they exist. Identifying variables is particularly important for education institutions housing large numbers of minority students as the failure rate for these students is sometimes double that of others (Cornett, 1987).

This pilot study conducted at a university in the South Texas-Mexico border region where the student population is

approximately 87% Hispanic, focused on one component of the ExCET: Secondary Professional Development.

Purpose and Perspectives of the Study

The topic of teacher certification tests has attracted considerable attention from educational researchers, teachers, school administrators, and policy makers (Jaeger, 1988; Cornett, 1987; Chambers, Munday, Sienty, and Justice, 1999; White, Burke and Hodges, 1994). Research to identify variables predicting success on teacher certification tests suggests that critical thinking plays a key role in the students' success on teacher certification tests (Chambers et al., 1999). Also, the combined effect of reading ability, grade point average, age, gender and TASP (Texas Academic Skills Program) math, reading, and writing scores can be used as predictors (Chambers et al., 1999). White et al. (1994) found that both SAT and grade point average predict success on the Examination for Certification of Texas Educators (ExCET) in the professional development test. The State of Texas requires that all students entering teacher education programs master the minimum standards on the TASP exams, yet there exists a lack

of research on these exams as predictors for teacher certification examination success for Hispanic students. Neither has research been done on the ACT scores as predictors. Nor has research been conducted to identify the predictive value of variables related to teaching practices. For instance, they yield no information on the predictive impact of variables, such as, the amount of individual preparation time before the ExCET, participation in university study sessions for the ExCET, and ExCET practice test results. Studies of such variables could influence the administrators' formulation of policies regarding accountability issues, the faculty members' strategies and content selection in the courses, and the students' performance on teacher certification test. This pilot study identifies additional variables that predict success: practice ExCET test scores, TASP reading scores, and ACT scores. Knowledge and information on how to select or prepare students effectively for teacher certification is central to educators in both higher education and school districts. The quality of the teacher education program is of utmost importance.

Method

Data Sources

Pre-service teachers, at the University of Texas Pan American, must complete their academic requirements, attend several study sessions for the ExCET, and pass a practice ExCET test with a minimum score of 70 percent to be eligible to take the ExCET exam. In this study, a representative sample of 71 (28 males, 43 females) secondary education pre-service teachers were drawn from the College of Education academic records: ExCET data from the 1998-1999 academic year. This data also included practice ExCET scores and ExCET scores. Records, such as, TASP (reading, math and writing) scores, ACT scores, overall GPA, and GPA in 18 credit hours of professional development education courses were collected from the university's academic records office. The description of the variables used in the study is listed in Table 1 (Appendix C).

Measures of Variables

Guided by previous studies on predictors of success on the dependent variable, the professional development ExCET tests, and by the need to extend such studies, the following

independent variables were considered in the analyses: ACT scores; TASP reading, math and writing scores; overall GPA; GPA for 18 credit hours of professional development education courses; and practice ExCET test scores.

Analytic Approach

The Macintosh SPSS 6.0 stepwise multiple linear regression program was used to conduct the statistical analyses. The study used significance level $P=.05$ as the criterion level for determining statistical significance, the Pearson Product Moment Correlation, a partial correlation controlling for ACT, and a stepwise linear regression model to assess the predictive value of the variables. A Pearson Product Moment Correlation was performed to measure bivariate relationships among the independent variables and between each of the independent variables and the professional development ExCET test.

Results

The Pearson Product Moment Correlation shows significant correlations ($p<.05$) between the professional development score on the ExCET and GPA for education courses ($r=.24$), TASP scores in reading ($r=.60$), TASP scores

in writing ($r=.35$), ACT scores ($r=.53$), and ExCET practice test scores ($r=.53$) (Appendix C, Table 2). A partial correlation, controlling for ACT scores, was then performed resulting in three contributing variables correlating with the ExCET: TASP reading ($r=.44$), TASP writing ($r=.29$), and practice ExCET ($r=.41$) (Appendix C, Table 3). Since the TASP reading and TASP writing scores still correlated significantly ($r=.42$) with each other, stepwise linear regression is an appropriate method of analysis to determine which of these variables contributes more as a predictor variable. Also, GPA for education courses did not correlate significantly with ExCET; hence it was eliminated as predictor variable. The stepwise multiple linear regression program then applied to examine the four remaining predictors: TASP reading, TASP writing, ExCET practice test, and ACT. It yielded three variables, TASP reading, practice ExCET test, and ACT ($F= 21.19$, $df 3/68$, $p<.0001$) explaining 48.68 percent of the variance ($R^2 = .4868$). The first variable entered in the regression equation, TASP reading scores ($R=.60$), accounts for 36.31 percent of the variance; adding the ExCET practice test scores increases the predictive value to ($R=.67$) and accounts for an additional 9.08 percent of the

variance; and adding ACT scores increases the predictive value, slightly, to ($R = .70$) and accounts for 3.30 percent of the variance (Appendix C, Table 4).

Discussion and Educational Importance of the Study

The study shows that success on the ExCET exam for secondary pre-service teachers on the professional development area can be predicted reasonably well with a linear regression equation that includes the variables TASP reading scores, practice ExCET test scores, and ACT scores; at least for students attending universities in the South Texas-Mexico border region, a region whose student population is mainly Hispanic. It suggests that raising the criteria for selection in each of the three variables would result in higher proportions of students passing the ExCET on the first attempt. It has further implications for educators: it draws attention to the importance of developing reading skills at the district level and of introducing and developing practice ExCET sessions at the higher education level.

The relatively small sample size and the restricted area of study are the two main limitations of this study that affect

the identification of the variables and the generalization of the findings, respectively.

Further research involves extending this study to include (a) a larger sample, for example, 200, (b) other pre-service areas such as elementary, early childhood, and special education, and (c) other populations in the State of Texas. Ultimately, one needs to determine the predictive value of the ExCET for success of teachers in the field.

References

Chambers, S., Munday, R., Sienty, S.F. & Justice, M. (1999). Predictors of success in the Texas state certification test for secondary teaching. *College Student Journal*, 33(1), 10-15.

Cornett, L. (1987). *Teacher education: Action by SREB states*. (ERIC Document Reproduction Service No. ED 288 817)

Jaeger, R. M. (1988). *Establishing standards on tests used for certification of education personnel: Validity issues*. (ERIC Document Reproduction Service No. ED 318 743)

White, W. F., Burke, C. M., & Hodges, C.A. (1994). Can Texas teacher certification be predicted from SAT scores and grade point averages? *Journal of Instructional Psychology*, 21, 298-299.

Appendix A

Test Framework

- Domain I- Understanding Learners
(5 competencies = approximately 33% of test)
- Domain II- Enhancing Student Achievement
(6 competencies = approximately 40% of test)
- Domain III- Understanding the Teaching Environment
(4 competencies = approximately 27% of test)

Organization of the Test Frameworks

The content covered by a test is organized into three or more domains. Within each domain the content is defined by a set of competencies. Each competency is composed of two major parts:

1. the *competency statement*, which broadly defines the content that an entry-level educator needs to know, and
2. the *descriptive statement*, which describes in greater detail the types of knowledge and skills covered by the competency.

An example of a competency and its accompanying descriptive statement is provided below.

Sample Competency and descriptive Statement

Professional development (Fields 02 and 03)

Domain: Understanding Learners

Competency: "The teacher appreciates human diversity, recognizing how diversity in the classroom and the community may affect learning and creating a classroom environment in which both the diversity of groups and the uniqueness of individuals are recognized and celebrated."

Descriptive Statement: "The teacher is aware that each student brings to the classroom a constellation of personal and social characteristics related to a variety of factors such as ethnicity, gender, language background, exceptionality, etc. The teacher recognizes the instructional implications of student diversity and knows how to turn the diversity within and beyond the classroom to advantage by creating an environment that nurtures a sense of community, respects differences, fosters learning, and enhances students' understanding of the society in which they live."

"The competencies are broad, conceptual statements, written in a language that reflects the skills, knowledge, and understanding that an entry-level teacher needs in order to teach effectively in a Texas classroom. This test is made up of questions that measure these competencies."

Source: State Board of Educator certification, 1998. ExCET Preparation Manual. National Evaluation Systems, Inc., Amherst, MA.

Appendix B

ExCET Sample Item

Decision Set Begins Here

Sixth-grade teacher Kathleen Larson has begun a unit on plans with her class. Jessica Cortez, a student in the class, comments that her older sister, who is a student at the local college, recently took her to the college's botanical garden. Jessica's description of its huge greenhouse filled with tropical plants prompts several students to ask Ms. Larson whether the class could take a field trip to the site. Ms. Larson is enthusiastic about the idea and tells the class she will check into the possibility.

52. Which of the following would be the most appropriate *first step* for Ms. Larson to take as she considers whether to proceed with plans for the proposed field trip?
- A. Send home students' parents and guardians an explanation of the proposed trip and ask for their feedback.
 - B. Conduct a student poll to determine if all the students are in favor of the proposed field trip.
 - C. Ask other teachers for their opinions about the likely value of the proposed field trip.
 - D. Contact college officials to inquire whether the facility offers educational visits for student groups and, if so, how the visits are conducted.
53. Taking students on a field trip associated with an instructional unit is likely to benefit students most by:
- I. exposing them to more complex and challenging cognitive tasks than in the classroom.
 - II. enhancing the self-esteem of students who have negative perceptions of their own academic potential.
 - III. helping them develop an awareness that learning takes place both inside and outside the classroom.
 - IV. providing them with the opportunities to encounter actual examples of subject matter they are studying.
- A. I and II only
 - B. I and IV only
 - C. II and III only
 - D. III and IV only

Appendix C Tables

Table 1. Descriptive Means of Variables used to Determine Success for Secondary Preservice Teachers Professional Development Teacher Certification Exam (ExCET).

Variables	Mean	SD	N=71
Overall Grade Point Average	2.81	.33	
Grade Point Average in 18 credit hours of professional education courses	3.44	.32	
ACT	17.06	3.60	
TASP (writing subtest)	245.99	20.59	
TASP (reading subtest)	257.14	19.19	
TASP (mathematics subtest)	251.78	19.70	
Practice or Pretest ExCET	37.59	2.35	
ExCET (professional development subtest)	68.01	9.55	

Table 2. Correlation Matrix of Variables used to Determine Success for Secondary Preservice Teachers Professional Development Teacher Certification Exam (ExCET).

	Overall GPA	GPA (edu.)	ACT	TASP (writing)	TASP (reading)	TASP (math)	Practice ExCET	ExCET (prof.dev.)
Overall GPA		.555 P=.001*	.440 P=.001*	-.045 P=.708	.268 P=.024*	.132 P=.272	.271 P=.023*	.148 P=.217
GPA (education courses)			.171 P=.155	-.029 P=.812	.138 P=.253	.190 P=.112	.148 P=.219	.240 P=.044*
ACT				.209 P=.081	.536 P=.001*	.255 P=.032*	.407 P=.001*	.531 P=.001*
TASP (writing subtest)					.458 P=.001*	.272 P=.022*	.198 P=.098	.349 P=.003*
TASP (reading subtest)						.147 P=.222	.438 P=.001*	.603 P=.001*
TASP (math subtest)							-.032 P=.793	.134 P=.266
Practice ExCET								.535 P=.001*
ExCET (prof. dev.)								

*Significant level $p > .05$

Table 3. Correlation Matrix of Variables used to Determine Success for Secondary Preservice Teachers Professional Development Teacher Certification Exam (ExCET), controlling for ACT.

	Overall GPA (education)	TASP (writing)	TASP (reading)	TASP (math)	Practice ExCET	ExCET (prof.dev.)
Overall GPA	.543 P=.001*	-.156 P=.197	.041 P=.737	.023 P=.849	.111 P=.359	-.112 P=.356
GPA (education courses)		-.067 P=.583	.055 P=.650	.154 P=.203	.087 P=.474	.179 P=.139
TASP (writing subtest)			.420 P=.001*	.458 P=.022*	.126 P=.298	.288 P=.016*
TASP (reading subtest)				.011 P=.922	.284 P=.017*	.444 P=.001*
TASP (math subtest)					-.153 P=.205	-.002 P=.998
Practice ExCET						.412 P=.001*
ExCET (prof. dev.)						

* Significant level $p > .05$

Table 4. Summary of Regression Results for Determine Success for Secondary Preservice Teachers Professional Development Teacher Certification Exam (ExCET).

Independent Variables			
TASP (reading subtest)			
Multiple R	.6026		
R Squared	.3631		
Adjusted R Square	.3539		
Standard Error	7.6756		
Analysis of Variance			
	DF	Sum of Squares	Mean Square
Regression	1	2317.8428	2317.8428
Residual	69	4065.1431	58.9151
F= 39.3421 Significant F= .0000			
Practice ExCET			
Multiple R	.6737		
R Squared	.4539		
Adjusted R Square	.4378		
Standard Error	7.1599		
Analysis of Variance			
	DF	Sum of Squares	Mean Square
Regression	2	2896.9852	1448.4926
Residual	68	3486.0007	51.2647
F= 28.2552 Significant F= .0000			
ACT			
Multiple R	.6977		
R Squared	.4868		
Adjusted R Square	.4639		
Standard Error	6.9921		
Analysis of Variance			
	DF	Sum of Squares	Mean Square
Regression	3	3107.4021	1035.8007
Residual	67	3275.5838	48.8893
F= 21.1867 Significant F= .0000			

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