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ABSTRACT

This monograph on developing and implementing admission testing for prospective teachers includes information on: (1) competency assessment activities in 31 selected states, the basic skills assessed, and time of testing--prior to admission and/or certification; (2) competency test development; (3) competency testing for admission into teacher education in the state of Indiana (Pre-Professional Skills Test, Descriptive Tests of Language and Mathematics, locally developed tests); (4) cost of basic skills testing; and (5) evaluating standardized tests. Reference notes are included. Special attention is given to entry competency testing by the members of the Coalition of Teacher Education Programs: Ball State University; Butler University; Indiana State University; Indiana University (at Bloomington, Indianapolis, and Kokomo); Purdue University; and University of Evansville. Tables outline the data. (JD)

TEACHER EDUCATION ADMISSION TESTING: DEVELOPMENT AND IMPLEMENTATION

by

Richard L. Antes

Coalition of Teacher Education Programs
Indiana University
1985

This paper was commissioned by the Coalition of Teacher Education Programs, a cooperative project to improve teacher education involving Ball State University, Butler University, Indiana University, Indiana State University, Purdue University, and the University of Evansville.

Introduction

The concern about the quality of education and quality of teachers has created interest in teacher testing. As early as Colonial times, school boards and superintendents conducted oral and written examinations of prospective teachers; and formal licensing processes evolved over time in attempts to certify teacher proficiency.

The current emphasis on educational reform has added impetus to efforts to determine teacher competency. State legislatures and state departments of education have mandated teacher competency testing in response to public demands for accountability of teachers. The 17th Annual Gallup Poll of the Public's Attitudes Toward the Public Schools, conducted in Spring 1985, reported that 89 percent of the public supported the use of basic competency tests to measure teachers' knowledge and intellectual ability (Gallup, 1985). Pressures from education reform reports and the news media have stirred public interest in competency testing to ensure that teachers possess the basic skills, academic knowledge, and pedagogical and personal skills needed to be a professional teacher (Sandefur, 1984; de Hart and Connelly, 1985; and Smith, 1984). Roth (1985) stated:

> During the last two years, a large number of reports have been established which call for reform of teacher education and the strengthening of state certification standards. Reports such as A Nation at Risk, written by the National Commission on Excellence, suggest that teachers have been poorly prepared and schools, colleges, and departments of education (SCDE's) are responsible for this poor preparation. Furthermore, state teacher certification systems and their standards are cited as the means to improve programs and the overall quality of teachers. One method in particular, competency testing, has been one of the more frequently recommended means to strengthen teacher certification. (p. 7)

The National Council for Accreditation of Teacher Education (NCATE) in June 1985 accepted the NCATE Redesign, with the standards section ratified at the October 1985 council meeting. With the ratification of the standards section, students admitted to professional education programs are to be proficient in communication and other basic skills, and at the time of certification they must exhibit depth and breadth in the liberal arts and other general studies (NCATE Redesign, p. 22).

Part of the second criterion for compliance to the student standard is:

> 2. A comprehensive system, that includes more than one measure, is used to assess the personal characteristics and basic skills proficiency of candidates preparing to teach. This system includes all of the following: (a) standardized basic skills proficiency test for the basic program level; (b) faculty recommendations; (c) biographical information; and (d) successful completion of college/university course-work with at least 2.5 grade point average (GPA) on a 4-point scale. (p. 22)

NCATE's basic-skills proficiency standard is intended to ensure quality teacher preparation programs in conjunction with state certification programs. Recommendations for reforming teacher education by strengthening state certification standards will reach the teacher education programs of institutions desiring NCATE accreditation.

State of Affairs in Teacher Competency Testing

Sandefur's (1984) Competency Assessment of Teachers: The 1984 Report provides a comprehensive profile of the competency testing of teachers from 1975 to 1984. As of 1984, 17 states had legislative mandates and 21 states had department of education mandates requiring competency assessment of teachers in those 38 states. In addition, seven states were planning some assessment activity. Only five states reported no plans for assessment. Basic-skills testing, usually in reading, writing, and mathematics, was being administered before admission to teacher education programs in 21 states. Thirty-four states required basic-skills testing either at the level of admission, certification, or both. States were divided between the use of standardized or custom-made tests. Twenty-one states used national standardized tests, and sixteen used customized tests. Eight states used a combination of standardized and customized tests. Sandefur (1984, p. 7) provides a table that contains a breakdown for each state and includes the following categories when appropriate: legislative or state board of education mandate, dates mandated or implemented, admission or certification level, skills tested (basic, professional, academic, on-the-job), and type of tests (national, standardized, or customized).

The attention to the improvement of education has focused primarily on a single, highly visible source: the standards for selection and certification of teachers. Concerns for developing instruments and means for assessing the degree to which standards are met are a natural outcome of this focus. The three types of observations most frequently used as a single criterion or in combination with others are: (a) tests of basic skills in reading, writing, English, and mathematics prior to admission to a teacher education program; (b) tests of subject matter knowledge in areas in which the teacher plans to teach and be certified; and (c) assessment through observation devices (including tests) during job performance in the classroom. A wide diversity exists among and within states regarding the testing and assessment requirements. Table 1 presents information concerning competency assessment activities in 32 states as reported by Sandefur (1984) in summative descriptions (pages 11-29 of the report).

Table 1

Competency Assessment Activities by State

State	Test	Basic Skills Assessed	Prior to Admission to Teacher Education	Prior to Certification
Alabama	National Evaluation Systems, Inc. in development of the English Proficiency Test	Reading, writing, language skills (grammar, mechanics, reference skills), and listening	yes	
Arizona	National Standardized Test (Part of the Arizona Teacher Proficiency Examination ATPE)	Reading, grammar, and mathematics		yes
Arkansas	National Teacher Examination (NTE)	Communication skills and general knowledge		yes
California	California Basic Educational Skills Test (CBEST)	Reading, writing, and mathematics	yes	yes
Colorado	California Achievement Test (CAT)	Oral and written English and mathematics	yes	yes
Connecticut	Test to be selected by teachers and state board of education	Mathematics, reading, and writing	yes	
Delaware	Pre-Professional Skills Test (PPST)	Reading, mathematics, and writing		yes
Florida	Florida Teacher Certification Examination	Mathematics, reading, and writing		yes
Kentucky	Standardized	English and mathematics	yes	
Louisiana	English proficiency	English		yes

Table 1

Competency Assessment Activities by State
(Continued)

State	Test	Basic Skills Assessed	Prior to Admission to Teacher Education	Prior to Certification
Maine	Teacher Qualifying Examinations	Communications	yes	
Mississippi	College Outcome Measurement Project (COMP)	Speaking and writing	yes	
Missouri	American College Test (ACT) Scholastic Aptitude Test (SAT)	English usage, mathematics usage, social studies, reading, natural science reading	yes	
Nebraska	Not determined	Pre-professional	yes	
Nevada	Not determined	Pre-professional		yes
New Hampshire	TVTE Pre-professional Skills Test	Reading, writing, and mathematics		yes
New Mexico	Basic Skills Examination not specified	Reading, writing, and mathematics	yes	
North Carolina	Basic Skills Screening	Pre-professional	yes	
Ohio	Not specified	Verbal and mathematics		yes
Oklahoma	Not specified	Oral and written English		yes
Oregon	California Basic Ed. Skills Test (CBEST)	Reading, writing, and mathematics		yes
Pennsylvania	Not specified	Pre-professional		yes
South Carolina	Not specified	Pre-professional	yes	

Table 1

Competency Assessment Activities by State
(Continued)

State	Test	Basic Skills Assessed	Prior to Admission to Teacher Education	Prior to Certification
South Dakota	American College Test (ACT)	English usage, mathematics, social studies reading, natural science reading		yes
Tennessee	California Achievement Test, ACT, or SAT	Pre-professional	yes	
Texas	Pre-professional Skills Test (PPST)	Reading, writing, and mathematics	yes	
Utah	Not specified	Pre-professional	yes	
Washington	Not specified	Oral and written communication and computation	yes	
West Virginia	Not specified	Pre-professional	yes	
Wisconsin	Standardized examination	Pre-professional	yes	
Wyoming	Not specified	Reading, writing, spelling, and mathematics	yes	

Competency Testing

A competency test is one type of criterion-referenced test intended to describe what is meant by each examinee's test performance in relation to effective classroom performance. Competency testing involves the minimum knowledge and basic skills necessary for adequate performance in an educational program and in the classroom.

Measures generated by a paper-and-pencil test must be interpreted within a reference system to derive meaning according to how the information is to be used. Measures from a basic-skills test may be used to screen students for admission to teacher education programs, screen students at the time of certification, or both. In addition, the test results may be used to recommend remediation prior to continuing in a teaching program or certification for teaching. One focus is ensuring that professional educators possess adequate communication and writing skills to be considered "a competent professional." Huff et al. (1980) defined competence as a characteristic of an individual that underlies effective work performance as classified into the five categories of knowledge, skills, traits, self-schema, and motives. He reiterates that the use of criterion-referenced measures means that some standard or level of effective performance is known to be related to job performance (p. 11). Herein lies one of the difficulties in developing appropriate competency tests, resulting in some controversy concerning test development and use.

Competency Test Development

Competency testing programs vary from state to state and from institution to institution. The responsibility for development or selection of competency tests has involved: (a) a contract between a state department of education or institution of higher education with a testing company, (b) selection of an available standardized instrument, and (c) local development of a custom-made test. Consultants from institutions or the private sector have been utilized in test development. In some cases an institution has used its own experts in subject areas and testing to develop its own instruments.

The construction of a test and its use to a large extent determine the meaningfulness of test data. A sequence of activities for good test development supports valid data. Figure 1 depicts the considerations for construction and use of a criterion-referenced competency test in basic skills.

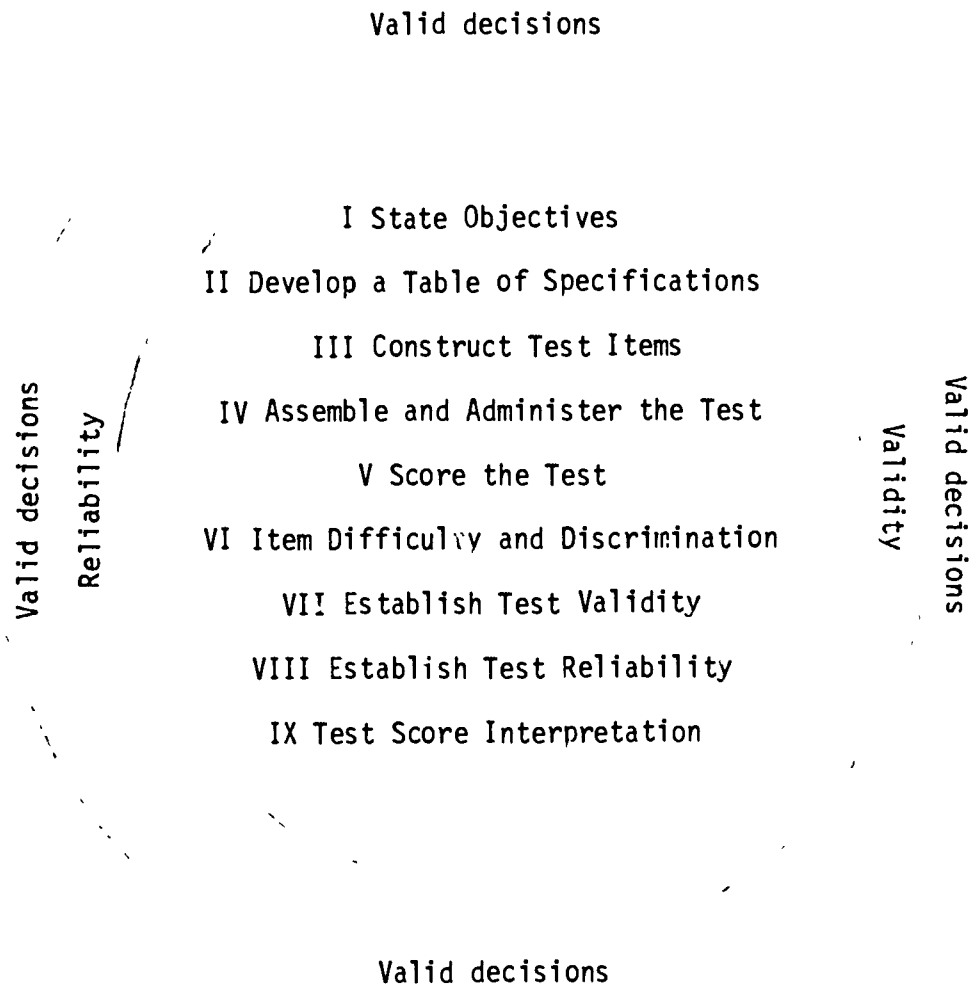

Figure 1 - Considerations for Test Construction

Consideration one, state objectives, stipulates that for each topic to be assessed (for example, reading, writing, or mathematics) the objectives must be stated and based on the expected scope and level of performance. This provides a basis for the content to be covered on the test. The second consideration relates to the first and incorporates the objectives into a table of specifications, which is a two-dimensional chart used to direct the writing of test items and construction of a test so that the subject topics and behaviors are emphasized in their relative degree of importance as reflected by the objectives.

Multiple-choice items are constructed in the third consideration and are based on the subject topics and behaviors to be exhibited on the test, which reflect the selected objectives. The use of multiple-choice items is based on the objectivity, ease, and quickness of scoring as well as several other strengths such as: (a) a relatively short testing time is needed to obtain comprehensive coverage of subject-matter topics, (b) a well-written item sets a clearly defined task and a definite correct response, (c) machine scoring may be utilized, (d) the test is adaptable to most content areas as well as a wide range of objectives, and (e) the difficulty of items may be controlled by changing alternatives. A try-out of these items with students similar to those actually taking the test provides information pertinent to the clarity, reading ability, language level, relevancy, and content accuracy of the items.

Considerations four, five, and six involve the selection and arrangement of the items on the test plus the directions for administration. The items are then field tested with students who have met the requirements for admission to teacher education programs. Item analysis based on the results of field testing may be carried out in relationship to students who met a criterion and those who did not meet a criterion (see Hopkins and Antes, 1985, pp. 240-245, for more information). Content experts can be utilized to determine the balance, specificity, and objectivity of the items as well as to judge whether the items have adequately discriminated the level of competency.

Content validity, consideration seven, is established by the table of specifications. Predictive validity is the degree to which predictions made from the test are confirmed by evidence gathered on actual success. If students' test scores correlate highly with actual performance some time in the future, then the test has predictive validity. Tests used for the purpose of determining competence for educational and professional practice should have reasonable predictive validity. Hopkins and Antes (1985) stated in reference to predictive validity:

> If the criterion is future performance, then the validity coefficient will reflect the ability of the test scores to forecast future performance. To estimate the predictive validity for a test's score, the test is administered to a group of subjects. Much effort already has been expended to put together a set of tasks intended to forecast some future behavior. After a considerable time interval information on the predicted variable is gathered from each subject who took the test. With two sets of data from the same set of subjects the coefficient of predictive validity can be computed. (p. 306)

Reliability, consideration eight, has three different concepts: (a) consistency of the decisions that classify each subject to mastery or nonmastery status, (b) reliability of the scores of criterion-referenced tests, and (c) reliability of domain score estimates.

In the ninth consideration, test score interpretation, the intended purpose of a criterion-referenced test is to assess whether students have learned at least the minimum. A close relationship between the established objectives of the test and the behaviors demanded by the items on the test constitutes a well-constructed test, which can provide a clear description of what the measured performance means. Under these circumstances a standard can be set to establish a criterion for the interpretation of the scores. The test scores will be utilized to make decisions about where to set criterion points for performance interpretation based on how easy or difficult the test.

Individuals using criterion-referenced tests must keep in mind that minimal acceptance for a test will be set subjectively. Although as much objectivity as possible must be brought to bear on the decision, the final decision will be based on judgment.

Entry Basic-Skills Testing in Indiana Teacher Education Institutions

Indiana House Bill 1105, passed by the General Assembly in February 1984, specified testing for proficiency in the basic skills before admission to teacher education programs. A second requirement of the bill specified that after June 30, 1985, the Commission on Teacher Training and Licensing may not grant an initial standard license to any person who has not demonstrated proficiency on a written examination in communication skills, general education, professional education, and knowledge in the area(s) of application for which one wishes to teach. The National Teacher Examination published by the Educational Testing Service was selected as the appropriate test instrument. Public Law 116-1984, approved on March 7, 1984, contained only the second requirement of House Bill 1105.

The Coalition of Teacher Education Programs (COTEP) members, who include the administrator responsible for the department, school, or college of education and a vice-president-level academic administrator from Ball State University, Butler University, Indiana University, Indiana State University, Purdue University, and University of Evansville, commissioned background papers in thirteen areas as part of the study of teacher education. Admission testing for entrance into a teacher education program is one of those papers.

A telephone survey of the 39 four-year higher education institutions listed by the Indiana Department of Education as teacher training institutions provided information concerning basic-skills competency testing for admission to teacher education programs. Table 2 provides an alphabetical listing of the institutions and the NCATE expiration date for those institutions that have NCATE-approved programs. Twenty-four of the 39 institutions have an NCATE-approved program. As mentioned previously, the recent NCATE Redesign and student standards require an admission system that uses a standard basic-skills proficiency test for the basic program level and an undergraduate minimum grade point average of 2.5 or above on a 4-point scale. Only eight of the accredited programs in Indiana currently meet the 2.5 minimum grade point average requirement. Biographical information and faculty recommendations are also part of NCATE's comprehensive system to assess students prior to formal admission to preparation for a teaching career.

Table 2

Competency Testing for Admission Into Teacher Education

In the State of Indiana

	NCATE	Reading	Writing	Mathe-matics	Other	GPA
Anderson College, Anderson	1990	--	--	--	--	2.25
Ball State University, Muncie (COTEP)	1990	--	--	--	--	2.2
Bethel College, Mishawaka		Nelson-Denny Reading Test	--	SAT	SAT Verbal	2.0
Butler University, Indianapolis (COTEP)	1987	--	--	--	--	2.5
Calumet College, Whiting		--	--	--	--	2.0
DePauw University, Greencastle	1988	--	--	--	--	2.5
Earlham College, Richmond		--	--	--	--	2.5
Fort Wayne Bible College, Fort Wayne		--	--	--	--	2.2
Franklin College, Franklin		MAPS*	MAPS	MAPS	--	2.5*
Goshen College, Goshen	1991	--	--	--	--	2.5
Grace College, Winona Lake		PPST	PPST	PPST	--	2.0
Hanover College, Hanover		--	--	--	--	2.5
Huntington College, Huntington		PPST	PPST	PPST	--	2.0

*Based on incomplete information

Table 2

Competency Testing for Admission Into Teacher Education

In the State of Indiana
(Continued)

	NCATE	Reading	Writing	Mathe-matics	Other	GPA
Indiana Central University, Indianapolis	1989	Iowa	Local	Local	--	2.2
Indiana State University, Terre Haute (COTEP)	1990	PPST	PPST	PPST	--	2.2
Indiana University, Bloomington (COTEP)	1989	Iowa	Local	Local	--	2.3
Indiana University Purdue University, Fort Wayne	1990	--	--	--	--	2.3
Indiana University, Kokomo	1989	Iowa	Local	Local	--	2.3
Indiana University Northwest, Gary	1989	--	--	--	--	2.3
Indiana University Purdue University, Indianapolis	1989	Iowa	Local	Local	--	2.3
Indiana University, South Bend	1989	--	Local	--	--	2.3
Indiana University Southeast, New Albany		--	--	--	--	2.3
Manchester College, North Manchester	1990	PPST	PPST	PPST	--	2.5
Marian College, Indianapolis	1987	--	--	--	--	2.5
Marion College, Marion		PPST (Implementation Feb. 1986)	PPST	PPST		2.5
Oakland City College, Oakland City		--	--	ACT	ACT English	2.5

Table 2

Competency Testing for Admission Into Teacher Education

In the State of Indiana
(Continued)

	NCATE	Reading	Writing	Mathe-matics	Other	GPA
Purdue University, West Lafayette (COTEP)	1989	Nelson-Denny	Local	SAT	--*Elem. Sec. varies by major	4.25
Purdue University Calumet, Hammond	1987	--	--	--	*Elem. Sec.	4.50 4.25
Saint Francis College, Fort Wayne	1986	--	--	--	--	2.1
Saint Joseph's College, Rensselaer	1986	PPST	PPST	PPST	--	2.5
Saint Mary-of-the Woods College, Saint Mary-of-the Woods		--	--	--	--	2.0
Saint Mary's College, Notre Dame	1989	--	--	--	--	2.0
Saint Meinrad College, Saint Meinrad				STEP	STEP Language	2.0
Taylor University, Upland	1988	Nelson-Denny	--	--	STEP Listening	2.5
Tri-State University, Angola		--	--	--	--	2.0
University of Evansville, Evansville (COTEP)	1987	--	--	--	--	2.6
University of Southern Indiana, Evansville	1988	PPST	PPST	PPST	--	2.5
Valparaiso University, Valparaiso	1988	MAPS	MAPS	MAPS	--	2.25
Wabash College, Crawfordsville		--	--	--	--	2.0

*on 6-point basis

Since institutions desiring accreditation must meet the NCATE Redesign and comply with the student standard section, the implication is that there may be institutions that will choose not to comply with these standards even though their NCATE accreditation will be jeopardized. Currently only four of the 24 NCATE-approved programs meet the requirements for basic-skills testing and grade point average. Even though some institutions have discussed the possibility of dropping their NCATE accreditation, it may be that these institutions will have met the 1985 NCATE requirements before the expiration of their accreditation. The reported information reveals that institutions currently are studying the direction they plan to take in basic-skills testing prior to admission to teacher education programs and are basing their decisions on individual institutional needs and priorities, the NCATE requirements, or both.

Seven of the 39 institutions are using the Pre-Professional Skills Test (PPST), and several institutions currently have the PPST under consideration. Several institutions under the Indiana University system are considering the adoption of a standardized instrument such as the PPST. Two institutions use the Descriptive Tests of Language and Mathematics Skills of the College Board Multiple Assessment Programs and Services (MAPS). Four institutions have developed their own tests; and five institutions utilize a combination of locally developed and standardized tests such as the Nelson-Denny Reading Test, Iowa Reading Test, STEP Listening Test, SAT, and ACT. Eighteen of the 39 teacher training institutions in Indiana use a standardized basic-skills test prior to entry to a teacher education program. Table 2 presents the various tests used in Indiana.

Institutions employing basic-skills testing require students to take the tests during the freshmen or sophomore year. When SAT or ACT scores are utilized, the tests are taken as part of the requirements for admission to an institution of higher education, which provides information for admission both to the institution and to a teacher education program. In one case the PPST is administered to incoming freshmen, while other institutions administer the test during the early part of the sophomore year. The administration of basic-skills tests generally occurs at the most convenient point to reach students in the program such as during the first education course, before formal admission to the teacher education program, or before enrollment in upper-level education courses. The general rule for administration is the earlier the better, particularly when remedial programs and retesting may be involved. The stipulation concerning retake of basic-skills tests that were not passed is one or two automatic retakes of one or more of the tests. An additional retake may be permitted based on a review of the student's academic record and efforts toward remediation of skill deficiencies.

Additional information related to Table 2 and pertinent to the requirements for COTEP member institutions is presented for each institution as follows:

Ball State University

Basic-skills testing is not required for admission to the teacher education program. The following proposal for admission to a teacher education program has been passed by the School of Education and has been presented to the appropriate governing body for approval:

1. Acceptable SAT verbal score of 320 and math score of 340 or a total of 700 minimum score on the SAT. Equivalent scores on the ACT are acceptable. Students may retake the test to raise their scores.

2. A grade point average of 2.2 or higher.

3. At the end of the junior year a core battery test covering the general knowledge area be administered. In addition, a professional knowledge test developed at the institution be administered to determine competence in professional education courses. A student must pass the tests prior to student teaching. (The professional knowledge test currently is being field tested in secondary education.)

Currently every student enrolling at Ball State University must take a mathematics proficiency test developed by the mathematics department. The acceptable score varies for each curriculum in education (elementary, secondary, and special education).

Butler University

Basic-skills testing is not required for admission to the teacher education program. All freshmen are tested with a local instrument developed by the mathematics and English departments. These tests and class rank determine those eligible for a scholarship.

Indiana State University

The Pre-Professional Skills Tests (PPST) are required for admission to the teacher education program, step I (TEP-I) and prior to student enrollment in professional courses in education.

Implemented: Fall semester 1985

Competencies assessed: (a) reading - 40 multiple-choice items in 40 minutes, (b) mathematics - 40 multiple-choice items in 50 minutes, and (c) writing - 45 multiple-choice items in 45 minutes and one written essay in 30 minutes.

Test fees: The cost for the three tests taken at the same time is $30. If tests are taken or retaken individually, the cost of taking one test is $20, or $25 for two tests taken in combination at the same administration.

Retaking the test: The student is granted one automatic retake of one or more of the tests. If the student does not pass the test on the second attempt, a review of the student's academic record and efforts toward remediation of skill deficiencies will be required to take the test(s) again.

Frequency of testing: The test is offered by the University Testing Office three times during the fall semester and three times during the spring semester.

Minimum standards: Passing scores were established for fall semester 1985. Modifications of these standards may result from further study of the basic-skills testing.

1. Reading - A raw score of 22 or scaled score of 172. All students scoring below 22 will be administered the Metropolitan Test of Reading to determine grade equivalency. The student is not charged a fee for this test. Students obtaining a post-high-school reading level will be exempted from retaking the reading test (PPST).

2. Mathematics - A raw score of 28 or scaled score of 168. Remediate and retake the test if the score is below that required.

3. Writing - A composite raw score on the multiple-choice and essay-writing tests of 53 or a scaled score of 174. Students scoring below the minimum will write a second essay, which will be scored by the English Department. Unsuccessful performance on the second writing experience requires remediation and retaking of the PPST.

Specifications for the Tests: (a) Reading: comprehension, analysis, and evaluation; (b) Mathematics: competencies including knowledge acquired from having studied mathematics from elementary through secondary school; and (c) Writing: ability to use grammar and language appropriately and to communicate effectively in writing within a limited period of time.

Note: In 1982-1984, the Committee for Competency Assessment of Teacher Education Candidates field tested the MAPS assessment program in basic skills. The evaluation of the assessment program provided information helpful in the development of policies and the selection of basic-skills tests.

Indiana University (Bloomington, Indianapolis, and Kokomo)

Admission to Teacher Education Competency Tests (ATECT)

Implemented: August 15, 1983

Test Development: Indiana University

Competencies assessed: (a) reading comprehension - 50 multiple-choice items in 37 minutes, (b) vocabulary - 50 multiple-choice items in 15 minutes, (c) mathematics - 40 multiple-choice items in 55 minutes, and (d) writing - essay on one of two topics in 45 minutes. Scored on a 60-point scale by two independent readers. If the scores of the two readers differ by 20 or more points, a third reader is utilized and the mean of the two closest scores is reported.

Test fees: $8.00 for all tests

Minimum standards: established by the School of Education

(a) Reading comprehension and vocabulary - a score of 33 or above, or a score between 30 and 33 on the comprehension test and a score of 30 or above on the vocabulary test; (b) Mathematics - a score of 20 or above; and (c) Writing - a score of 35 or above.

Exemptions: Students will be exempted from the ATECT score standards in reading and mathematics if their records show SAT or ACT scores as follows:

Reading: SAT verbal score of 530 or above or ACT verbal score of 21 or above.

Mathematics: SAT quantitative score of 580 or above or ACT quantitative score of 22 or above.

ATECT score standards for writing must be met by all students.

Retaking the test: Students may retake one or more of the tests two times. Special permission is needed from the Director of Undergraduate Studies to take the test more than three times.

Specifications for the Tests: (a) Reading Comprehension measures a variety of skills that are utilized in the comprehension and effective interpretation in reading. The skills encompass three major areas: comprehension, analysis, and variation. The test items measure abilities within each of the three areas, and include items pertaining to: author's purpose, assumptions, and attitude toward subject; strengths and weaknesses of author's argument; inferences; applicability of information to a new situation; emotional or manipulative aspects; relevance and appropriateness of supporting evidence; and relationship to intended audience. Test items also may involve the main idea, definitions, relationships of sequence, cause and effect, and summarizing/paraphrasing, (b) Reading-Vocabulary measures the depth, breadth, and precision of the student's general reading vocabulary. Test tasks require the student to choose the nearest synonym of the stimulus word, (c) Mathematics measures mathematical competencies through test items covering the following areas: interpreting graphs, comparing and ordering numbers, ratio, proportion, percent, estimation, measurement, reading scales, logical reasoning, interpreting formulas, and recognition of more than one way to solve problems, (d) Writing is designed to evaluate the ability to communicate efficiently in writing, including the appropriate use of language and grammar. The test measures the skill with which one can: provide/sustain a focus or theme, attain varied purpose (explanatory, persuasive, and expressive), decide which aim is appropriate, select and maintain the appropriate person, preserve extended coherence, construct sentences in standard written English, use vocabulary and structure appropriate to purpose, and provide agreement between parts of speech.

Purdue University

Admission to teacher education requires basic-skills assessment with standardized and locally developed tests.

Competencies assessed: (a) mathematics, (b) writing, and (3) reading.

Minimum standards: established by the Department of Education

(a) Mathematics - a score no less than a multiple of 10 immediately higher than the state average on the SAT math (quantitative). Remediation requires that a student earn a C or better in a university-level mathematics or statistics course (not algebra or trigonometry), (b) Writing - a 40-minute composition on one of several topics. The composition is written during the

first course in education in which the student is enrolled. The composition must meet the English Department's Writing Lab requirements for an acceptable composition. Remediation in the Writing Lab requirements for an acceptable composition. Remediation in the Writing Lab is targeted to individual needs. When the student meets the minimum level, according to the English Department, the requirement is satisfied, (c) Reading - The Nelson-Denny Inventory of Reading is currently being field tested. During four semesters of testing, between five and six percent of the scores were below grade 11. A proposal has been made to the Teacher Education Council to use the Nelson-Denny Inventory of Reading.

University of Evansville

Basic-skills testing is not required for admission to the teacher education program. A mark of C or better is required in the following four courses to be admitted to teacher education: (a) Education 100 - Career decisions, (b) Education 200 - Foundations of American education, (c) Exposition 104 - Basic composition, and (d) Communications 110 - Public speaking. A committee review is conducted for each candidate for admission to the teacher education program.

Indiana University: Bloomington, Kokomo, and Indianapolis (IUPUI) campuses use the same admission to teacher education basic-skills tests (ATECT). Indiana Central University uses the ATECT that is administered by IU for Indiana Central University.

IUPU at Fort Wayne requires all entering students to take locally developed placement tests in mathematics, English, and reading. IU Northwest requires a 3.0 or better in English composition, and IU South Bend administers an internal writing examination. These institutions, along with IU Soutwest, are considering administration of the PPST. The trend is in the direction of the standardized testing programs. Examples of other partial requirements for admission into teacher education programs follow:

(a) Anderson College requires five hours of coursework (three in writing and two in oral communications) with a letter mark of C or better.

(b) Calumet College requires a teacher education course, including a self-evaluation, prior to formal admission to a teacher education program.

(c) Hanover College faculty judge student writing and speaking ability for consideration to enroll in a teacher education program.

(d) Oakland City College has a locally developed English and math proficiency test.

(e) Saint Mary-of-the-Woods requires a writing sample from all students for placement. A 3.0 GPA in education courses is required.

(f) Taylor University requires a 3.0 GPA in the major area in order to student teach.

Cut-Off Scores

The setting of cut-off scores is the most controversial and difficult task in entry testing for teacher education programs. Several procedures for setting a passing score have been presented in the ETS publication, Passing Scores: A Manual for Setting Standards of Performance on Educational and Occupational Tests. Pages 61-65 in the "Helpful Hints" section of the manual provide information useful in making decisions concerning cut-off scores for any test. Several approaches to setting cut-off scores are available.

The setting of cut-off scores may be accomplished by asking expert judges to determine the minimum level of performance needed to function effectively as a teacher candidate and a teacher. Since this process is somewhat arbitrary, substantiation of the cut-off scores should be ascertained over a period of time by studying the predictive validity of the instrument. Even when norm-referenced test score interpretations are utilized, allowing the students' scores to be compared to the scores of other students, the setting of the actual cut-off score is somewhat arbitrary.

At Indiana State University the cut-off scores were based on the recommendation of experts in the subject areas after their inspection of one form of the PPST test, which had been administered nationally and had data concerning the administration available. Judges independently determined whether the items were appropriate for the subject areas that were tested. Each item was rated on a 4-point scale from easy to very difficult. Judges compared their independent ratings with ratings supplied by ETS, which provided another reference point. Each judge inspected the content, objectives, and coverage of each test that was related to his area of expertise. Judges then determined the number of items that they considered necessary to minimally meet an acceptable level of performance. These judgments were made independently and later shared with fellow judges for a group consensus. Student performance during the two-year field test of the MAPS tests provided another reference point in determination of the cut-off scores. Additional information concerning the reading skills of students below the required score were obtained through the administration of the Metropolitan Test of Reading. Writing skills were further assessed through a written essay scored by the English department.

Several Indiana institutions have reported that cut-off scores were set through debate. Several reported a concern for the impact of cut-off scores on enrollment. Examples of cut-off scores follow:

1. SAT verbal score of 350 and math score of 360. Non-credit remedial courses are required in the areas of deficiency. (Bethel College)

2. PPST cut-off score of 30th percentile. A score between the 20th and 30th percentile requires remediation, and under 20th percentile the student is dropped from the program. (Huntington College)

3. PPST cut-off score of 35th percentile. A student with a grade point average of 2.8 or above is exempted. (St. Joseph's College)

4. STEP listening-skills score of 60th percentile and a Nelson-Denny Reading Test grade placement of 12.9. Remedial programs are available to assist students in remediation efforts. (Taylor University)

5. MAPS tests: sentence structure, English usage, arithmetic skills, and reading scores of 1.5 standard deviations above the mean are required. This score corresponds to a 40th to 50th percentile on national norms. (Valparaiso University)

6. Proposed SAT verbal score of 320 and math score of 340 or a total of 700 minimum score on the SAT. (Ball State University)

7. For reading the cut-off is a raw score of 22 or scaled score of 172, for mathematics a raw score of 28 or scaled score of 168, and for writing a composite raw score on the multiple-choice and essay writing of 53 or a scaled score of 174. (Indiana State University)

8. For reading a comprehension and vocabulary score of 33 or above or a score between 30 and 33 on the comprehension tests and a score of 30 or more on the vocabulary test, for mathematics a score of 20 or above, and for writing a score of 35 or above. Students with an SAT verbal score of 530 (ACT 21) or above and a SAT quantitative score of 580 (ACT 33) will be exempted from the ATECT score standards in reading and mathematics. (Indiana University)

9. Mathematics score no less than a multiple of 10 immediately higher than the state average on the SAT math. Write a composition that meets the English Department's Writing Lab requirement. A reading test currently is being field tested. (Purdue University)

Cost of Basic Skills Testing

The cost of admission testing is the responsibility of the student. Standardized tests are more expensive than institution-developed tests. For example, the fee for the PPST is $30.00 for the three tests. A test taken individually is $20.00, and two tests taken in one test administration is $25.00. The fee for the PPST includes the response sheet, item booklets, scoring, and individual score reports mailed to the student and institution. Indiana University administers, scores, and reports scores for their ATECT for a fee of $8.00. The cost to the student is one of the advantages for an institution-developed test instrument.

The advantages and disadvantages of admission tests vary depending on the factors and conditions pertinent to a particular situation. Reliance on a standardized test may take considerable pressure off an institution in carrying out the numerous tasks in developing a quality test. The choice is between taking the necessary steps in construction of the appropriate test instrument or using the guidelines in selection of a standardized

test instrument. In either case the validity of the test must be judged relevant to the particular university program and the program content. The predictive validity must be determined by the institution.

Certain advantages and disadvantages are associated with standardized and institution-developed tests. In general, the advantages of standardized tests are as follows:

1. Use of a standardized test is convenient for the institution since the time-consuming task of item development related to a table of specifications, field testing the items, other considerations in constructing tests, and the reporting of scores are carried out for the test user.

2. Scoring of writing samples by the test company alleviates the difficulty of locating individuals with the expertise and time to carry out this tedious task.

3. Scoring the multiple-choice and writing samples and reporting the results to the examinees and the institution is carried out by the test company.

4. Providing a secure test and equivalent forms of the various tests is the responsibility of the test company.

5. Normative data may be available for a national sample and additional reference groups.

6. The reliability and standard error of measurement are available based on earlier administrations of the tests.

7. Manuals for administration and test-score interpretation usually are available.

8. Critiques of the test instrument by test experts may be available for perusal.

In general, disadvantages of standardized tests are as follow:

1. The cost for the student to take the test is relatively high.

2. The test specifications may be broad to meet the needs of numerous customers and therefore may not meet local needs as well as a custom-made test would.

3. A lower content validity may result from the use of a broader table of specifications.

Certain advantages and disadvantages are associated with institution-developed tests. In general, the advantages of institutional tests are as follow:

1. Based on the use of facilities, services, and faculty at the institution, tests can be developed with students paying lower test fees.

2. The table of specifications is tailored to the curriculum and expectations of the institution.

3. Higher content validity results from the table of specifications tailored to meet local needs.

4. Higher reliability may result from the local test development.

5. The local institution may be able to provide assistance and direction in remediation of deficiencies based on the locally developed instrument.

6. The norms derived from student performances will be more relevant to the local situation.

In general, the disadvantages of institutional tests are as follow:

1. National and regional norms are unavailable.

2. Interpretation of scores rests totally on an internal criterion.

3. Considerable time must be devoted to the task of item development and the details of test administration and scoring, particularly if a writing sample is utilized.

4. Test security may be difficult to maintain.

5. Alternate forms of the test must be constructed for retests.

6. Technical information regarding the test may be lacking.

Guidelines for Evaluating Standardized Tests

In the selection of a standardized test the relative importance of various aspects of the test must be taken into account. The Joint Committee of the APA, AERA, and NCME set forth essential criteria in evaluating a standardized test in Standards for Educational and Psychological Tests and Manuals (The Joint Committee of the APA, AERA, and NCME, 1974). The information needed in selecting a standardized test for admission to a teacher education program follows:

1. Name of test, date, and author. The type of test should be stated, and a description of the test and subjects should be given.

2. Purpose of the test. The purpose and application for the test should be clearly stated.

3. Grade levels or ages. The students' ages and grade levels and other related information should be described.

4. Equivalent forms. The number of equivalent or alternate forms should be specified. A statement of the comparability should be made.

5. Publisher and cost. The packaging of the test, directions, scoring sheets, specimen sets, and other materials should be stated with the cost for each item specified.

6. Content of the test. The areas of concern of the test and the method of selecting content, along with its applicability to grade levels or ages, should be specified.

7. Time for administration. The length of time needed to administer the test and various alternatives in administration should be clearly stated.

8. Directions for administration. Clear and precise procedures for administration of the test should be available. How are students given directions for taking the test?

9. Validity. A complete validity section should be available, which ensures that the test measures what it is intended to measure. The sample employed in the validity study and the conditions under which the testing is done should be described sufficiently for the user to judge whether the reported validity is pertinent to the situation.

10. Reliability. The methods for obtaining reliability coefficients and standard errors of measurement should be in sufficient detail and should be recorded for comparison to other tests.

11. Norms. The appropriate and accurate norms in the form of age, grade, percentile rank, standard score, or any other type, should be reported. The measures of central tendency and variability should be reported. What norms are reported for the tests?

12. Format of the test. The format of the test should be described in detail.

13. Scoring procedures available. The test items should be relatively objective and simple to score. What procedures are available for hand scoring or machine scoring?

14. Evaluator's judgment regarding the completeness and usability of the manual.

15. Reaction to the whole test.

16. Gives reactions of others who have critically reviewed the test.

These 16 points are minimum considerations for evaluating standardized tests, and test selectors may wish to include other concerns. When information has been gathered on several tests, the data for each should be compared to previously determined criteria established by the committee.

The two standardized instruments now being utilized for screening in basic skills prior to admission to teacher education in the State of Indiana are the Pre-Professional Skills Tests (PPST) and the Descriptive Tests of Language and Mathematics Skills (MAPS). Each instrument is reviewed in relationship to the points of minimum consideration in selection of a standardized test.

Pre-Professional Skills Test (PPST)

1. Pre-Professional Skills Tests (PPST) were developed by the Educational Testing Service as one part of the National Teacher Examinations (NTE).

2. The purpose is to measure basic proficiency in reading, writing, and mathematics. The scores may be used separately or in combination.

3. The tests may be used for high schools, junior colleges, and four-year higher education institutions.

4. Equivalent forms of the tests are available.

5. Cost for a single test is $20, two tests $25, and three tests $30. These prices include the scoring and reporting of scores.

6. There are three areas of concern: (a) reading includes reading skills, literal comprehension, ability to understand how material is organized and how it conveys the message, and ability to make reasoned qualitative judgments about the nature and merits of a written message; (b) writing includes writing skills, ability to use appropriate grammar and language, and ability to communicate in writing with a specific aim or purpose; and (c) mathematics includes mathematical competencies and knowledge acquired from studying mathematics from elementary through high school.

7. Testing requires 40 minutes for reading, 50 minutes for mathematics, and 60 minutes for writing (30 minutes for multiple choice and 30 minutes for essay). Total testing time for the three tests is two hours and 30 minutes.

8. The directions for administration and test taking are clear and precise.

9. The validity section states that completed studies provide evidence of the relationship of the PPST to teacher education curricula or the teaching role in nine states. A test-analysis report provides information concerning the sample administrations of the tests. Validity information should be collected by user institutions.

10. The reliability and standard error of measurement are reported. The Kuder-Richardson-20 reliability is .88 for reading, .91 for mathematics, and .80 for writing. These coefficients are acceptable. No comparison is made with other tests. Scores on PPST reading, mathematics, and writing tests are not comparable.

11. Scaled score norms are provided, as are the mean, standard deviation, median, range, and skewness for the tests and the samples provided.

12. The format of the test is 40 multiple-choice items in reading, 40 multiple-choice items in mathematics, and 45 multiple-choice items and one 30-minute written essay in writing.

13. Machine scoring is carried out by the Educational Testing Service. Essays are scored holistically on a six-point scale by two independent readers. Separate scores are provided for each of the three tests and reported on a scale ranging from 150 to 190.

14. The four PPST publications provided by ETS are usable and provide complete information for interpretation. The documents are:

(1) Pre-Professional Skills Test of Reading, Writing, and Mathematics: 1985-86 Bulletin of Information.

(2) Test Specifications: NTE Pre-Professional Skills Test

(3) Pre-Professional Skills Tests Score Interpretation Guide

(4) Passing Scores: A Manual for Setting Standards of Performance on Educational and Occupational Tests

15. The Pre-Professional Skills Test is a secure test with available test specifications and score interpretation information. With appropriate attention to reliability and validity by a user institution, this standardized test provides an adequate measure of performance in the stated areas. The scoring is done by ETS, and all materials needed for test administration are provided.

Descriptive Tests of Language and Mathematics Skills (MAPS)

1. The Descriptive Tests of Language and Mathematics Skills, developed by the College Board, are part of the College Board service, Multiple Assessment Programs and Services (MAPS).

2. The Descriptive Tests of Language Skills (DTLS) assess student competence in five areas related to language ability. The Descriptive Tests of Mathematics Skills are designed to pinpoint skill deficiencies that need remediation in four areas. The tests are designed to provide information for screening and class placement as well as individual diagnosis for planned instruction.

3. The tests may be used with incoming freshmen and transfer students at institutions of higher education. A competency score is provided, as is descriptive scores information for each test area, which may be utilized in assessing individual strengths and weaknesses in critical skill areas.

4. Equivalent forms of the tests are available.

5. A package of 25 reusable test booklets is $18.75. Self-scoring answer sheets and individual student guides, in units of 25, are $21.25. One copy of support materials is provided free with the initial test order.

6. The Descriptive Tests of Language Skills include five separate tests: reading comprehension, vocabulary, logical relationships, usage, and sentence structure. The Descriptive Tests of Mathematics Skills include four separate tests: arithmetic, elementary algebra, intermediate algebra, and functions and graphs.

7. Testing requires 30 minutes for reading comprehension, 15 minutes for vocabulary, 30 minutes for sentence structure, 30 minutes for logical relationships, and 30 minutes for usage. Thirty minutes are required for testing arithmetic skills, 30 minutes for elementary algebra skills, 30 minutes for intermediate algebra skills, and 30 minutes for functions and graphs.

8. The directions for administration and test taking are clear and concise.

9. The content validity of the tests was developed so the abilities examined by each test would be broadly applicable for placement with typical introductory course sequences. Validity as evidenced by comparison of test scores to other measures, particularly performance in courses, is being carried out.

10. Reliability and standard error of measurement are reported for the total scores of each test and cluster scores. Reliability for separate tests range from .82 to .89 in the five language tests and from .84 to .91 in the four mathematics tests.

11. Scaled scores are provided for each separate test in language and mathematics. Information regarding the pilot study and percentile ranks is provided.

12. Within each test, questions are organized in clusters designed to provide descriptive information regarding strengths and weaknesses in specific skill areas. The multiple-choice items for each test are:

45 Reading Comprehension
30 Vocabulary
40 Usage
35 Elementary Algebra Skills
30 Functions and Graphs
50 Logical Relationships
35 Sentence Structure
35 Arithmetic Skills
35 Intermediate Algebra Skills

13. Self-scoring answer sheets are available and easy to use.

14. The support materials are useful and provide complete information for interpretation. Available documents include:

(1) Guide to the Use of Descriptive Tests of Language Skills

(2) Guide to the Use of Descriptive Tests of Mathematics Skills

(3) DTLS examination set, which includes test and support materials for all five tests.

(4) DTMS examination set, which includes test and support materials for all four tests.

15. The language skills and mathematics skills tests provide the information needed concerning aspects of testing and score interpretation, as well as technical information pertaining to the instruments. All materials and information needed by the test user are provided. Appropriate attention to reliability and validity should be given to a specific use of the instruments by a user institution.

In reference to the PPST and the MAPS tests, the PPST has the advantage of providing norms for comparison of local student scores with national student norms. The MAPS test advantage is that the information provided concerning specific areas of student strength and weakness can be utilized in remediation; however, normative data are not provided.

Any test of basic skills being considered should be evaluated carefully in reference to the guidelines described.

Concluding Statement

Basic-skill tests that are appropriately developed or selected based on the discussed guidelines can provide valid and reliable test scores. When utilized appropriately, basic-skills tests can identify students who do not demonstrate the skills deemed necessary to function in an academic setting or to perform adequately as a teacher. For valid teacher competency testing to occur, attention must be given to the knowledge, skills, and characteristics necessary to perform in a teacher education program. Methodical academic analysis and occupational analysis of the role of teachers should be carried out to provide an adequate definition of what should be measured. Through this process the necessary competencies can be adequately defined, measurement devices developed or selected, and validity ascertained.

In the State of Indiana it may be advantageous to form a council or board composed of representative teachers and educators in order to develop a custom-made test or to select a standardized test instrument to be uniformly administered at all teacher education institutions in the state. Identical minimum cut-off scores for all teacher education institutions

would alleviate the expressed concern that the enrollment at a particular institution may be based partially on the minimum score acceptable to that institution. A statewide minimum cut-off would ensure that minimum standards would be maintained and not lowered to attract enrollment. Flexibility could be provided by allowing any institution to establish a cut-off score higher than the statewide minimum.

An agreement among the institutions in Indiana to contribute information regarding test scores for each testing could provide valuable data for the development of the basic-skills testing program. Pooled information concerning demographic data and available student test scores on all types of competency and basic-skills tests could be carefully analyzed and reported to all institutions. The criterion-related validity could be based on a large population of students. One or more external variables that are considered to provide a direct measure of the desirable characteristics or behaviors could be correlated with basic-skill test scores. With such cooperation a vigorous validation plan for teacher education institutions could become a reality. Based on the pooled information, the standards (cut-off scores) could be altered when necessary to reflect the continued input of information and validation of the instrumentation.

The use of basic-skill test scores for diagnostic purposes should be supported as a means of motivating students to maintain standards. Institutions desiring to institute remediation (refresher or review) programs can base the curriculum on valid test information. Not only can the quality of teacher education candidates be upgraded through basic-skills testing, but additional curricula and educational program reform can result from extensive study of the results of competency testing.

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