



Board of
Behavioral
Sciences

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MEETING NOTICE

Examination Program Review Committee December 8, 2008

Holiday Inn San Diego Downtown
Skyline Room
1617 First Avenue
San Diego, CA 92101
(800) 366-3164
(619) 233-6228

1:30 – 5:00 p.m.

- I. Introductions
- II. Purpose of the Committee
- III. Overview of Examination Development and Validation by Dr. Tracy Montez
- IV. Review of Information Sources and Key Stakeholders
- V. Future Meeting Dates
- VI. Suggestions for Future Agenda Items
- VII. Public Comment for Items Not on the Agenda

Public Comment on items of discussion will be taken during each item. Time limitations will be determined by the Chairperson. Items will be considered in the order listed. Times are approximate and subject to change. Action may be taken on any item listed on the Agenda.

THIS AGENDA AS WELL AS BOARD MEETING MINUTES CAN BE FOUND ON THE BOARD OF BEHAVIORAL SCIENCES WEBSITE AT www.bbs.ca.gov

NOTICE: The meeting facilities are accessible to persons with disabilities. Please make requests for accommodations to the attention of Christina Kitamura at the Board of Behavioral Sciences, 1625 N. Market Boulevard, Suite S-200, Sacramento, CA 95834, or by phone at 916-574-7835, no later than one week prior to the meeting. If you have any questions, please contact the Board at (916) 574-7830.



Arnold Schwarzenegger
Governor
State of California
State and Consumer
Services Agency
Department of
Consumer Affairs

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To: Examination Committee **Date:** November 24, 2008
From: Christy Berger **Telephone:** (916) 574-7834
MHSa Coordinator
Subject: Overview of Examination Development and Validation by Dr. Tracy Montez

Dr. Tracy A. Montez is currently the president of Applied Measurement Services, LLC (AMS). AMS is a private consulting business whose primary function is to provide psychometric services for developing, administering, and maintaining fair, valid, and legally defensible certification, licensure, and selection examinations.

Prior to founding AMS, Dr. Montez worked for the California Department of Consumer Affairs (DCA) Office of Examination Resources (OER). Dr. Montez held the positions of Chief (2002-2006) and Personnel Selection Consultant (1999-2001). As Chief of the OER, Dr. Montez provided technical oversight to staff responsible for developing, scoring, and updating licensing examinations.

Attachments

- A. PowerPoint Presentation
- B. Occupational Analysis Fact Sheet – OER
- C. Test Scoring and Item Analysis Fact Sheet – OER
- D. Examination Development Fact Sheet – OER
- E. Criterion Referenced Passing Score Fact Sheet – OER
- F. Examination Validation Policy – OER (Please Note: This policy is currently undergoing revision. Some of the information may be outdated.)

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Department of Consumer Affairs
Board of Behavioral Sciences

Examination Program Review
Committee

Psychometric Overview

December 8, 2008

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Topics

- o Professional Guidelines & Technical Standards
- o Occupational Analysis
- o Examination Development & Construction
- o Passing Score
- o Test Administration & Information Available to Candidates
- o Examination Performance
- o Examination Program Review Committee Objectives

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Professional Guidelines &
Technical Standards

- o *Standards for Educational and Psychological Testing*
- o *Federal Uniform Guidelines for Employee Selection Procedures*
- o *California Business and Professions Code, Section 139*
- o *Government Code, Section 12944*

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Occupational Analysis

○ Definition:
An empirical method or study for identifying the tasks performed in a profession or occupation; and, the knowledge, skills, and abilities required to perform those tasks

Status of LCSW, LEP & MFT:

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Examination Development

Definition of an Examination Plan:
One possible product of an occupational analysis - describes the most critical knowledge and skills of a profession to be measured by an examination

- Guidelines are followed for developing (i.e., writing and reviewing) examination items
- One guideline requires that items be linked to an examination plan
- Assists measurement of relevant and critical aspects of the profession or occupation (i.e., validity)

Status: LCSW, LEP & MFT

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Examination Construction

Definition:
Selecting questions from an item bank or pool of items to create an examination or forms of an examination

- Guidelines are followed for constructing exams
- One guideline requires that the number of items selected for each content area be based on the examination plan
- Assists measurement of relevant and critical aspects of the profession or occupation (i.e., validity)
- Assists measurement in a consistent manner (i.e., reliability)

Status: LCSW, LEP & MFT

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Passing Score

- Definition:
A score that represents the cut off that divides those candidates for licensure who are minimally competent and those who are not

Status: LCSW, LEP & MFT

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Test Administration & Information Available to Candidates

- Test administration refers to computer-based testing (CBT)
- Information about examination programs should be made available to candidates in a user-friendly manner

Status: LCSW, LEP & MFT

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Examination Performance

- Examination performance refers to evaluating individual item data and overall examination data in terms of functioning

Status: LCSW, LEP & MFT

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Examination Program Review Committee Objectives

- Develop valid and legally defensible examinations based on current occupational analysis data, including stakeholder/subject matter expert feedback and participation
- Ensure a fair and objective examination process that addresses client/consumer needs and does not create artificial barriers to licensure

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Examination Program Review Committee

Successful completion of these objectives requires commitment and collaboration from all partners:

- OER/Psychometric Staff
- BBS Staff
- Licensees/Subject Matter Experts
- Stakeholders

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Wrap Up

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OCCUPATIONAL ANALYSIS

Informational Series, No. 1, June 2003

An occupational analysis is a comprehensive evaluation and description of current practice. The results of the occupational analysis are used to update the description of practice and/or develop a new licensing examination.

Purpose	<p>An occupational analysis (“job analysis”) defines practice of a profession in terms of the actual tasks that new licensees must be able to perform safely and competently at the time of licensure. In order to develop a licensing examination that is fair, job-related, and legally defensible, it must be based solidly upon what practitioners actually do on the job.</p> <p>The occupational analysis should be reviewed routinely every <i>five to seven years</i> to verify that it accurately describes current practice.</p>
Process	<p>Typically, the process begins by selecting and interviewing a sample of practitioners who accurately represent the geographic, ethnic, gender, experience, and practice specialty mix of the profession. During the interview, practitioners are asked to identify the tasks that they perform within major categories of their profession. A questionnaire based on statements of job activities is sent to a representative sample of licensed practitioners. The data are analyzed, and the results are used to update the description of practice and/or develop a content outline.</p>
Content outline	<p>The content outline specifies the tasks that a newly licensed practitioner is expected to perform and a knowledge base that should be mastered by the time of licensure. The relative weight of each major subject area to be assessed represents the <i>overall</i> importance of that area to practice. The content outline is most commonly used to develop questions for examinations.</p>
Content validation strategy	<p>The occupational analysis establishes job-relatedness of the examination and thereby provides empirical linkage of the examination content to the occupational analysis.</p>
Entry-level perspective	<p>To ensure that the description of the profession represents job tasks of practitioners entering the profession, the occupational analysis always includes a number of newly licensed practitioners to provide assistance during the establishment of content and criteria that define the profession.</p>
Legal standards and guidelines	<p>A number of statutes and guidelines, as well as case law, set standards for the licensing process in California. These include the Standards for Educational and Psychological Testing, the federal Uniform Guidelines for Employee Selection Procedures, the Civil Rights Act of 1991, California Government Code, Section 12944 of the California Fair Employment and Housing Act, and the Americans with Disabilities Act of 1990.</p>



TEST SCORING AND ITEM ANALYSIS (TSIA)

Informational Series, No. 2, June 2003

A test scoring and item analysis evaluates the effectiveness of the items within a multiple-choice examination.

Purpose	Test scoring and item analysis (TSIA) evaluates the effectiveness of the items within an examination.
Process	A board, bureau, or program delivers the candidates' scannable answer sheets and the examination key to the Office of Examination Resources (OER). OER optically scans the answer sheets, performs an item analysis, and produces final scores. A test measurement specialist evaluates the analysis and prepares a report.
Test scoring	Typically OER produces the candidates' final scores and descriptive statistics of the final scores such as the distribution of final scores, the mean score, the standard deviation, and the percentage of candidates passing.
Statistical analysis of item quality	<p>OER can perform an item analysis on examinations that have <i>dichotomous</i> formats (correct and incorrect answers). When the examination format is not dichotomous, OER simply scores the examination and produces a roster of the candidates' final scores.</p> <p>The results obtained in the item analysis are most stable when there are a large number of items (questions) in the examination and a large number of candidates taking the examination. If the number of candidates is small, the item analysis should be interpreted broadly because the item statistics may vary widely from administration to administration.</p> <p>The <i>most</i> critical index of the item analysis of an examination is <u>reliability</u>. If an examination is reliable, it produces the same results from administration to administration.</p> <p>The <i>second</i> most important index is the <u>discrimination index</u> for each item on the examination. The discrimination index represents the index of how effectively the item differentiates between examinees who score high on the test and those who score low.</p> <p>The <i>third</i> most important index is the <u>difficulty index</u> for each item on the examination. The difficulty index represents the percentage of candidates who chose the correct answer. An item can be considered difficult if there are a small number of candidates chose the key and a large number of candidates chose the distractors.</p>
The TSIA report	The report evaluates the reliability of the examination and identifies items on the examination that should be replaced, reviewed, or revised before future examinations are constructed. The item analysis and descriptive statistics of the final scores such as the distribution of final scores, the mean score, the standard deviation, and percentage of candidates passing are included as part of the report.



EXAMINATION DEVELOPMENT

Informational Series, No. 3, June 2003

Examination development is an important process that results in licensing examination programs that conform to professional, technical, and legal standards.

Purpose of licensing examinations

The sole purpose of licensing examinations is to identify persons who possess the minimum knowledge and experience necessary to perform tasks on the job safely and competently. A board or committee must understand the purpose of licensing examinations to fully understand the examination development process and its outcomes.

By contrast, the purpose of academic examinations is to assess how well a person can define and comprehend terms and concepts. Another type of examination is the employment selection examination; its purpose is to rank-order individuals who possess the qualifications for a specific job.

Process

Examination development is a *group* process. Each member of the group provides a different perspective of the profession that would not otherwise be objectively considered if the examination were developed by individuals working alone. To ensure that the description of the profession represents the job tasks of practitioners entering the profession, the examination development process always includes a number of newly licensed practitioners.

Examination development begins with training of practitioners by a measurement specialist. While there may be several workshops to develop an examination, any one examination development workshop should be scheduled for a minimum of two days to obtain optimum results. During each workshop practitioners are trained in the technical, professional, and legal standards that serve as specific guidelines for the development of examinations.

For multiple-choice examinations, the distractors in multiple-choice items should be plausible so that an unprepared candidate will seriously consider the incorrect options along with the correct answer. For performance examinations, the activities should be sufficiently complex that an examiner can thoroughly assess a candidate's competence to perform actual tasks on the job. For oral examinations, standardized questions should be designed so that an examiner can thoroughly assess a candidate's ability to apply knowledge to job-related problems.

Basis of the examination

To ensure that the examination conforms to professional, technical, and legal standards, the items on the examination should be based on the specifications of an examination outline developed from an occupational analysis. By linking the items to the specifications of an examination outline, the job-relatedness of the examination can be established.



CRITERION-REFERENCED PASSING SCORES

Informational Series, No. 4, June 2003

A criterion-referenced passing score applies minimum standards for competent practice to all candidates regardless of the form of the examination administered.

Purpose By adopting a criterion-referenced passing score, a board, bureau, or program applies standards for competent practice to all candidates regardless of the form of the examination administered. Adoption of a criterion-referenced passing score may ultimately result in the licensure of candidates who have sufficient knowledge and experience to ensure public health and safety.

Process Standard setting is a *group* process. The group should be composed of practitioners who are representative of all aspects of practice or profession. To ensure that the description of the profession represents the job tasks of practitioners entering the profession, the standard-setting process should always include a number of newly licensed practitioners.

Criterion-referenced standard setting begins with the establishment of a *minimum acceptable level of competence* for safe practice that candidates must possess in order to pass the examination. The panel develops common definitions of different levels of candidate performance by identifying critical work behaviors that contrast the highly effective, the minimally competent, and the ineffective candidate.

Advantages Because licensing examinations are known to vary in difficulty from one examination form to another, a fixed passing score or percentage such as 70% does not represent the minimally acceptable competence for all administrations of an examination.

One important advantage of applying a criterion-referenced methodology is that the passing score is lowered for an examination containing a large number of difficult items and raised for an examination containing a small number of difficult items. Candidates who take the more difficult test are placed at a disadvantage unless a criterion-referenced passing score is established. Thus, the passing score provides safeguards to both the candidate and the consumer affected by the particular profession.

Another advantage of using criterion-referenced methodology is that the passing score is independent of the performance of other candidates who take the examination at the same time. The passing score is not based upon performance with respect to the group. Rather, the passing score is based upon the difficulty of the items within the examination.

**CALIFORNIA
DEPARTMENT OF CONSUMER AFFAIRS**

**EXAMINATION VALIDATION
POLICY**



PREAMBLE

The intent of this policy is to establish guidelines that define psychometrically sound and valid examination development and administration procedures for the Department of Consumer Affairs (DCA). These guidelines, which serve as an examination validation policy, have been developed to meet the mandates of Government Code Section 12944 (a), which requires that all licensing boards, programs, bureaus, and divisions establish job-relatedness of licensing examinations.¹ This document serves to implement the standards promulgated herein, as mandated by Assembly Bill 1105, Chapter 67 (Statutes of 1999), Business and Professions Code Section 139, under the guidance of the Office of Examination Resources (OER)²

The guidelines for examination validation must provide for the variety of practices and professions under the jurisdiction of the DCA, currently numbering approximately 230 in such dissimilar professions as psychology, barbering and cosmetology, and architecture. Another issue that relates to this variety of professions is the diversity of structure and number of occupations regulated by the various boards, programs, bureaus, and divisions. For example, one board regulates forty-two separate license practices, each requiring an individual examination; in contrast, another board regulates just one type of license practice but requires both a state and a national examination. While some boards license as many as 280,000 practitioners, others license as few as 20 practitioners.

For some boards, programs, bureaus, and divisions, the best choice for examination programs is the use of national examinations that are provided by testing vendors. While it is recognized that the boards, programs, bureaus, and divisions have the final responsibility for its examination programs, the testing vendor should apply the standards identified within this policy to ensure that the examination programs comply with California requirements.

It should be noted that California's DCA maintains a designated unit specifically dedicated to ensuring valid and psychometrically sound licensing examinations, unlike most other state government entities that license practitioners. As such, OER is a valuable resource for all parties affected by this legislative mandate. The OER possesses the requisite psychometric expertise to serve as a provider of services for examination development, occupational analysis, standard setting, program review, and evaluation. Therefore, it must be able to acquire resources as needed to provide the level of service requested by the boards, programs, bureaus, and divisions.

¹ See Addendum A.

² See Addendum A.

POLICY

In response to the Legislature's request, pursuant to AB 1105, Chapter 67 (statutes of 1999), this policy shall address examination development and validation and occupational analyses pertaining to the boards, programs, bureaus, and divisions under the jurisdiction of the California Department of Consumer Affairs (DCA).

The following numbered paragraphs describe the activities required to meet testing standards and implement this policy:

1. AN APPROPRIATE SCHEDULE FOR EXAMINATION VALIDATION AND OCCUPATIONAL ANALYSIS AND CIRCUMSTANCES UNDER WHICH MORE FREQUENT REVIEWS ARE APPROPRIATE

Examination Development and Validation:

Each board, program, bureau, and division under the jurisdiction of the DCA should ensure that the content of its licensing examination is validated by basing the content of its examinations upon the results of a current occupational analysis specific to its licensees. Therefore, the distribution of questions should be proportional to the relative importance of subject matter areas of the occupational analysis.

Occupational Analysis:

Each board, program, bureau, and division under the jurisdiction of the DCA should ensure that occupational analyses are conducted and that the practice for its licensees is defined. Occupational analyses and/or validations should be conducted every three to seven years, with a recommended standard of five years, unless the board, program, bureau, or division can provide verifiable evidence through subject matter experts or a similar procedure that the existing occupational analysis continues to represent current practice standards, tasks, and technology.

POLICY

It is recommended that the report resulting from the occupational analysis contain the following content areas:

INTRODUCTION

- Purpose of the occupational analysis
- Content validation strategy
- Participation of licensed practitioners
- Adherence to legal standards and guidelines

EXAMINATION OUTLINES

- Summaries of examination outlines
- Examination outlines
- Description of content areas

DEVELOPMENT OF EXAMINATION OUTLINES

- Critical values for task statements
- Critical values for knowledge/skill statements
- Assignment of job tasks to examination format
- Content area weights
- Linkage of the knowledge/skill statements to tasks

SURVEY QUESTIONNAIRE PROCEDURE AND ANALYSIS

- Interviews
- Task and knowledge/skill statements
- Sampling strategy
- Distribution and return of questionnaires
- Respondent demographics

CONCLUSION

- Application of occupational analysis results

2. MINIMUM REQUIREMENTS FOR PSYCHOMETRICALLY SOUND EXAMINATION VALIDATION, EXAMINATION DEVELOPMENT, AND OCCUPATIONAL ANALYSES, INCLUDING STANDARDS FOR SUFFICIENT NUMBER OF TEST ITEMS

Examination development and occupational analysis should adhere to accepted technical and professional standards to ensure that all items on the examination are psychometrically sound, job-related, and legally defensible. These standards include those found in *Standards for Educational and Psychological Testing* and the *Principles for Validation and Use of Personnel Selection Procedures*. Other professional literature that defines and describes testing standards and influences professionals are produced by the following organizations: The *American Educational Research Association*; the *American Psychological Association*; the *Clearinghouse for Licensure, Enforcement, and Regulation (CLEAR)*; the *Educational Testing Service (ETS)*; the *National Council of Measurement in Education*; the *National Organization for Competency Assurance*; and the *Society for Industrial and Organizational Psychology*.

The *Standards for Educational and Psychological Testing* have been referenced as the “standard” for the basis of all aspects of the policies contained in this document.

California practice should be appropriately represented in occupational analyses conducted on a national level in order for the results of the occupational analysis to be valid for examination development in California.

The number of items in an examination should be sufficient to ensure adequate content coverage and provide reliable measurement. Both subject matter expert judgment and empirical data should be used to establish the number of items within an examination. The empirical data should include results from occupational analysis and item and test analysis. The item bank for an examination should contain a sufficient number of items such that: 1) at least one new form of the examination could be generated if a security breach occurred; and 2) items are not overexposed. Frequent exposure of items may result in candidates who pass because of "practice effect" rather than demonstration of competence.

If changes are made to examination content, methods for administration, or examination format, the examination should be revalidated.

3. STANDARDS FOR REVIEW OF STATE AND NATIONAL EXAMINATIONS

The following standards, at a minimum, should be considered in a review of state and national examinations.

- Description of method to establish content-related validity
- Examination reliability
- Information about the sample of practitioners surveyed
- Item development process (experts used, editing methods, etc.)
- Method to ensure standards are set for entry-level practice
- Occupational analysis report and frequency of updates
- Pass/fail ratio
- Pass point setting methodology
- Right to access information from all studies and reports from test vendors (local or national)
- Right of state agency to review recent examination
- Size of item banks
- Statistical performance of examinations
- Test plan and method to link to occupational analysis
- Test security methods; test administration processes
- The request for proposal (RFP)

If national examinations are used, the suitability of examination content for California practice should be determined by a review of the results of the occupational analyses and the demographics of the practitioners upon which it is based.

4. SETTING OF PASSING STANDARDS

Every board, program, bureau, and division under the jurisdiction of the DCA should ensure that passing standards for its examination(s) are based on minimum competency criteria at an entry level to the profession.

The process of setting standards should adhere to accepted technical and professional standards so that persons who become licensed possess sufficient knowledge and experience to practice safely and competently. The passing standards should be determined by a criterion-referenced passing score methodology that considers the representativeness of subject matter experts used in the standard setting, their training in the standard setting process, and the suitability of statistical analyses.

Boards, programs, bureaus, and divisions that have laws or regulations requiring a fixed passing percent score should seek to change the law or regulation to require a criterion-referenced passing score that is based on the minimum competence criteria.

5. APPROPRIATE FUNDING SOURCES FOR EXAMINATION VALIDATIONS AND OCCUPATIONAL ANALYSES

Ideally candidates for a licensing examination would serve as the source of funding for examination development, administration, and processing. However, experience has shown this practice is not viable for every board. Because the integrity of the examination process is essential in ensuring consumer protection, if candidates are unable to bear the entire cost, it is therefore appropriate for licensees of the profession to also bear part of the cost of the examination development process.

Funding for the examination development process requires a budget that reflects the costs of examination validation and occupational analysis. It is imperative that budget line items be designated for these purposes in a fully funded budget. To assure validity, maintain consistency, preserve security, and ensure the integrity of the examination program, the budget line items need to be continuous appropriations.

Additional budgetary considerations are related to the ability of boards, bureaus, programs, and divisions to contract for activities associated with examination development and occupational analyses. These activities encompass data entry, development and administration of national examinations, electronic examination administration, and expenses associated with travel and per diem for subject matter experts who participate in examination development and occupational analysis workshops.

Moreover, boards, programs, bureaus, and divisions must have the budgetary flexibility to adapt to unexpected or additional program needs. For example, the potential for catastrophic incidents such as a security breach of an examination and loss of an examination should be accounted in determining overall costs.

6. CONDITIONS UNDER WHICH BOARDS, PROGRAMS, BUREAUS, AND DIVISIONS SHOULD USE INTERNAL AND EXTERNAL ENTITIES TO CONDUCT THESE REVIEWS

Internal review occurs when a board, program, bureau, or division develops and administers its own examinations independently or with oversight or administration of the review performed by the OER staff.

External review occurs when a board, program, bureau, or division contracts out for development and/or administration of their examination or relies on a national examination.

A board, program, bureau, or division may choose to use external and/or internal resources for various reasons, depending on its program needs. The program staff

must determine the most logical application of resources based on budget and standard requirements. Issues affecting those requirements include, but are not limited to, specialization, experience, uniformity, expertise, timing, consistency, cost-effectiveness, objectivity, staffing, and security needs.

7. STANDARDS FOR DETERMINING APPROPRIATE COSTS OF REVIEWS OF DIFFERENT TYPES OF EXAMINATIONS, MEASURED IN TERMS OF HOURS REQUIRED

The technical standards are delineated in the *Standards for Educational and Psychological Testing*. These standards define the tasks that must be performed to meet each guideline. Costs can then be applied to the performance of each task; however, the length of time spent in the performance of each task is based on the difficulty in performing the task, coupled with the complexity of the profession.

Addendum B provides examples of the minimum activities that should occur in any occupational analysis or examination development. Costs would include test development staff expenses, subject matter expert related expenses, administrative support activities, travel and per diem, workshop support activities, utilization of technological opportunities to enhance the test development and analysis activities, and funding for the workshop facilities.

Addenda C through F include a sample of an examination schedule, example of costs associated by workshop types (costs vary by board), and a portion of a master task schedule necessary to accomplish both a written and oral portion of an examination, including oral examiner training and proposed implementation dates.

8. CONDITIONS UNDER WHICH IT IS APPROPRIATE TO FUND PERMANENT AND LIMITED-TERM POSITIONS WITHIN A BOARD, PROGRAM, BUREAU OR DIVISION TO MANAGE THESE REVIEWS

The licensing examination is one of the last hurdles that a candidate must face in the licensing process. A board, bureau, program, or division has the ultimate responsibility to ensure that the examination meets technical, professional, and legal standards and protects the health, safety and welfare of the public by assessing a candidate's ability to practice competently. Because examinations are critical to the mandate for consumer protection, it is therefore necessary that if a program provides an examination, it should maintain examination support staff. The number of support staff needed is determined by each program's examination requirements and secured through the budget process. Factors that may affect change in the number of staff support needed include but are not limited to the following:

- 1) An increase in the number of times an examination is offered
- 2) A change of method by which an examination is administered, for example:
 - A change from paper to electronic administration
 - A change from requiring only a written examination to additionally requiring a practical or oral examination
- 3) A change of examination administration, for example:
 - A change from requiring a national examination to an examination based on and developed by California practitioners, or vice-versa
 - A change in examination vendors
- 4) A unique circumstance such as a breach of examination security
- 5) Legislative mandates

9. OTHER

Summary:

Examinations and the inferences made from the resulting scores are validated on a continuous basis, and examination validation is never “finished.” Each examination is based upon the results of an occupational analysis that identifies the job-related critical skills necessary for safe and competent practice. Examinations are designed to assess those skills. To ensure that examinations are job-related, practicing licensees known as subject matter experts must develop the examinations.

ACKNOWLEDGMENTS

In 1999 the policy standards for examination validation and occupational analyses were developed by the board, bureau, and program Executive Officer or his/her representative listed below. A number of these individuals are still engaged in developing standards for examination validation; others have assumed different duties within the Department or have applied their talents to jobs outside the Department of Consumer Affairs. The Office of Examination Resources remains indebted to this group and continues to publish this document for educational purposes.

C. Lance Barnett, Ph.D, Registrar, Contractors State Licensing Board.

Teresa Bello-Jones, R.N., M.S.N., J.D., Executive Officer, Board of Vocational Nurse and Psychiatric Technician Examiners

Cindi Christenson, Executive Officer, Board of Registration for Professional Engineers and Land Surveyors

Georgetta Coleman, Executive Officer, Board of Dental Examiners

Sherry Mehl, Executive Officer, Board of Behavioral Sciences

Patricia Harris, Executive Officer, Board of Pharmacy

Cathleen McCoy, Executive Officer, Respiratory Care Board

Thomas O'Connor, Executive Officer, Board of Psychology

Steve Sands, Executive Officer, Board of Architectural Examiners

Carol Sigmann, Executive Officer, Board of Accountancy

Chairman: Norman Hertz, Ph.D., Office of Examination Resources

The final draft standards were submitted to all the boards, bureaus, and programs that have occupational licensing programs for their review and comment. The final draft standards were also submitted to affected divisions for review and comment. The comments of all who responded were considered for incorporation into this document.

In September 2004, OER made writing style and format revisions to the original publication.

Glossary of Terms

Content-Related Evidence of Validity. Evidence that shows the extent to which the content domain of a test is based upon tasks performed in practice and the knowledge, skills, and abilities required to perform those tasks.

Criterion-Referenced Passing Score. The criterion against which the passing score is established is the concept of minimum competence. The criterion represents an absolute standard not dependent upon the performance of the candidates who sit for the examination.

Entry Level. The perspective that the content of tests should be based on the level of competency required of a practitioner who has been licensed for less than five (5) years.

Minimum Competence. The level of knowledge, skills and abilities required of practitioners that when performed at this level would not cause harm to the public health, safety, or welfare.

Occupational Analysis (Job Analysis). A method for identifying the tasks performed in a profession or on a job and the knowledge, skills, and abilities required to perform that job. For occupational licensing, the term occupational analysis is preferred because the scope of analysis is across a profession, not a solitary job.

Pass/Fail Ratio. The pass/fail ratio is defined as the percentage of candidates who pass compared to those who fail. A fixed pass/fail ratio or an extremely high or low pass rate may indicate a mismatch between education, training, and experience and the examination content. Likewise, a highly fluctuating pass/fail ratio may signal a disparity in the examination process and should be investigated.

Reliability. The degree to which test scores are consistent, dependable, or repeatable; that is, the degree to which they are free of errors of measurement.

Retranslate. The process of assigning existing test questions to a new examination outline. New examination outlines are produced from the results of an occupational analysis.

Revalidation. The ongoing process of affirming that an occupational analysis is valid.

Subject Matter Experts (SMEs). Subject matter experts are practitioners currently possessing an active license in good standing, are active in their practice, and are representative of the diversity of the professional population of the profession in terms of years licensed, practice specialty, ethnicity, gender, and geographic area of practice.

Glossary of Terms, page 2

Validity. The degree to which a certain inference from a test is appropriate or meaningful. Validity is not a property inherent in a test but refers to the degree to which the decision based upon a test is accurate. In the occupational licensing context, validity is interpreted as correctly differentiating between persons who are qualified and those who are not.

ADDENDUM A

Government Code Section 12944 (a)

12944. Licensing boards; unlawful acts based on examinations and qualifications; determination of unlawfulness; inquiries; reasonable accommodations; records

- (a) It shall be unlawful for a licensing board to require any examination or establish any other qualification for licensing which has an adverse impact on any class by virtue of its race, creed, color, national origin or ancestry, sex, age, medical condition, or physical disability, mental disability, unless such practice can be demonstrated to be job related.

Business and Professions Code Section 139

- (a) The Legislature finds and declares that occupational analyses and examination validation studies are fundamental components of licensure programs. It is the intent of the Legislature that the policy developed by the department pursuant to subdivision (b) be used by fiscal, policy, and sunset review committees of the Legislature in their annual reviews of these boards, programs and bureaus.
- (b) Notwithstanding any other provision of law, the department shall develop in consultation with the boards, programs, bureaus and divisions under its jurisdiction, and the Osteopathic Medical Board of California and the State Board of Chiropractic Examiners, a policy regarding examination development and validation, and occupational analysis. The department shall finalize and distribute this policy by September 30, 1999, to each of the boards, programs, bureaus, and divisions under its jurisdiction and to the Osteopathic Medical Board of California, and the State Board of Chiropractic Examiners.... This policy shall address, but shall not be limited to, the following issues:
- (1) An appropriate schedule for examination validation and occupational analyses, and circumstances under which more frequent reviews are appropriate.
 - (2) Minimum requirements for psychometrically sound examination validation, examination development, and occupational analyses, including standards for sufficient number of test items.
 - (3) Standards for review of state and national examinations.
 - (4) Setting of passing standards.
 - (5) Appropriate funding sources for examination validations and occupational analyses.
 - (6) Conditions under which boards, programs, and bureaus should use internal and external entities to conduct these reviews.
 - (7) Standards for determining appropriate costs of reviews of different types of examinations, measured in terms of hours required.
 - (8) Conditions under which it is appropriate to fund permanent and limited term positions within a board, program, or bureau to manage these reviews.

ADDENDUM B

Minimum Activities Necessary to Support a Valid Examination Program

The following activities must be considered as **minimum** in the process of creating and maintaining a valid examination program. Typically, an individual trained in assessment and measurement performs the activities required for the program. Moreover, the board, program, bureau or division provides staff support for most, if not all, of these activities when the Office of Examination Resources or another test vendor performs the review or development. On-going consultation with the board, program, bureau, or division is essential at every stage.

I. Examination Development

- 1) Fulfill Americans with Disabilities Act requirements
- 2) Evaluate item bank
- 3) Conduct workshop(s)
 - a) Item writing
 - b) Item review
 - c) Exam construction
 - d) Passing score
 - e) Others as necessary
- 4) Edit examination
- 5) Score examination and perform item analysis
- 6) Maintain item bank
 - a) Enter information subsequent to workshops
 - b) Enter statistics subsequent to item analysis
- 7) Coordinate activities with computer-based testing vendor
- 8) Provide continuous technical assistance

II. Occupational Analysis

- 1) Conduct research/review of prior analysis and related materials
- 2) Conduct workshop(s)
 - a) Develop content
 - b) Finalize task and knowledge statements
 - c) Review description of practice
- 3) Construct questionnaire
- 4) Develop sampling plan/data entry format
- 5) Distribute questionnaire to licensees
- 6) Analyze questionnaire data
- 7) Develop description of practice
- 8) Prepare examination plan
- 9) Prepare and print validation report
- 10) Retranslate examination item bank

III. Special Projects

- 1) Perform analysis of national or other examinations
- 2) Perform special analyses

Addendum C

ADDENDUM C

Sample Examination Validation/Development Schedule

Workshop
4-Day Item Writing Workshop
2-Day Item Review Workshop
2-Day Item Review Workshop
2-Day Exam Construction Workshop
2-Day Passing Score Workshop
2-Day Passing Score Workshop
2-Day Item Review Workshop

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