

CALIFORNIA DEPARTMENT OF CONSUMER AFFAIRS

EXAMINATION VALIDATION POLICY

EFFECTIVE: 09/30/99

1ST REVISION: 01/31/00, 2ND REVISION: 09/07/04



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 numbering approximately 230 in such dissimilar professions as psychology 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.

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), 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 as 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.

GLOSSARY OF TERMS

(Continued)

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.

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 from 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 as 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:

**Business and Professions Code Section 139
(continued)**

- (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

ADDENDUM B

(Continued)

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.