

DENTAL BOARD OF CALIFORNIA

REVIEW OF THE REGISTERED DENTAL ASSISTANT IN EXTENDED FUNCTIONS CLINICAL AND PRACTICAL EXAMINATIONS



OFFICE OF PROFESSIONAL EXAMINATION SERVICES



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EXECUTIVE SUMMARY

The Dental Board of California (Board) requested that the Department of Consumer Affairs' Office of Professional Examination Services (OPES) complete a comprehensive review of the Registered Dental Assistant in Extended Functions (RDAEF) Clinical and Practical Examinations. The purpose of the review was to determine whether the Board's RDAEF Clinical and Practical Examinations meet professional guidelines and technical standards.

Licensing boards and bureaus within the California Department of Consumer Affairs (DCA) are required to ensure that their examination programs comply with psychometric and legal standards. The public must be reasonably confident that an individual passing a licensing examination has the requisite knowledge and skills to competently and safely practice in the corresponding profession.

On October 7, 2017, OPES staff observed the RDAEF Clinical and Practical Examinations held at the University of California, Los Angeles (UCLA) School of Dentistry in Los Angeles. On October 14, 2017, OPES staff observed the examiner training and scoring of the RDAEF Clinical and Practical Examinations held at the University of California, San Francisco (UCSF) School of Dentistry in San Francisco.

The observations included discussions with Board staff, testing staff, dentists (examiners), and the RDAEF chief examiner. The purpose of the observations was to evaluate the process of the clinical and practical examinations with regard to reliability of measurement, examiner training and test scoring, administration, and test security and fairness to determine if the examinations meet professional guidelines and technical standards.

Based on the discussions and observations, OPES has concluded that, in general, the examinations meet professional guidelines and technical standards. However, OPES recommends that the Board implement additional slides during examiner training to enhance the level of examiner calibration, and that the Board institute minor improvements to the testing procedures and the testing environment to further improve the test administration process for all candidates. OPES believes that these small recommendations would increase the reliability and validity of the examinations.

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CHAPTER 1. INTRODUCTION

PURPOSE OF THE REVIEW

Licensing boards and bureaus within the California Department of Consumer Affairs (DCA) must ensure that their examination programs comply with psychometric and legal standards. The public must be reasonably confident that an individual passing a licensing examination has the requisite knowledge and skills to competently and safely practice in the corresponding profession.

The Office of Professional Examination Services (OPES) performed a review of the California Dental Board's (Board) Registered Dental Assistant in Extended Functions (RDAEF) Clinical and Practical Examinations. The purpose of the review was to determine whether the RDAEF Clinical and Practical Examinations meet the professional guidelines and technical standards outlined in section 139 of the California Business and Professions (B&P) Code and the Standards for Educational and Psychological Testing (2014) (Standards).¹

CALIFORNIA LAW AND POLICY

Section 139 (a) of the California B&P Code states:

The Legislature finds and declares that occupational analyses and examination validation studies are fundamental components of licensure programs.

It further requires that DCA develop a policy to address the minimum requirements for psychometrically sound examination validation, examination development, and occupational analyses, including standards for the review of state and national examinations.

DCA policy, OPES 12-01, specifies the *Standards*¹ as the most relevant technical and professional standards to be followed to ensure that examinations used for licensure in California are psychometrically sound, job-related, and legally defensible.

FORMAT OF THE REPORT

The chapters of this report provide the relevant standards related to various aspects of the RDAEF Clinical and Practical Examinations and contain the findings and recommendations of OPES.

¹ *Standards* references information taken from: American Educational Research Association, American Psychological Association, and National Council on Measurement in Education. (2014). *Standards for Educational and Psychological Testing*. Washington, DC: American Educational Research Association.

CHAPTER 2. RELIABILITY OF MEASUREMENT

OBSERVATION OF CLINICAL AND PRACTICAL EXAMINATIONS

OPES observed two administrations of the Board's RDAEF Clinical and Practical Examinations to determine whether the examination programs meet professional guidelines and technical standards. On October 7, 2017, OPES staff observed the RDAEF Clinical and Practical Examinations held at the University of California, Los Angeles (UCLA) School of Dentistry in Los Angeles. On October 14, 2017, OPES staff observed the examiner training and scoring of the RDAEF Clinical and Practical Examinations held at the University of California, San Francisco (UCSF) School of Dentistry in San Francisco.

The observations included discussions with Board staff, testing staff, and dentists (examiners) involved with the clinical and practical examinations, as well as with the RDAEF Chief Examiner. The purpose of the observations was to evaluate the process of the clinical and practical examinations with regard to reliability of measurement, examiner training and test scoring, administration, test security, and fairness.

The following standards are most relevant to reliability and precision of measurement for licensing examinations, as referenced in the *Standards*.

STANDARDS

Standard 2.1

The range of replications over which reliability/precision is being evaluated should be clearly stated, along with a rationale for the choice of this definition, given the testing situation. (p. 42)

Comment: For any testing program, some aspects of the testing procedure (e.g., time limits and availability of resources such as books, calculators, and computers) are likely to be fixed, and some aspects will be allowed to vary from one administration to another (e.g., specific tasks or stimuli, testing contexts, raters, and, possibly, occasions). Any test administration that maintains fixed conditions and involves acceptable samples of the conditions that are allowed to vary would be considered a legitimate replication of the testing procedure. As a first step in evaluating the reliability/precision of the scores obtained with a testing procedure, it is important to identify the range of conditions of various kinds that are allowed to vary, and over which scores are to be generalized.

Standard 11.14

Estimates of the consistency of test-based credentialing decisions should be provided in addition to other sources of reliability evidence. (p. 182)

FINDINGS

The Board typically administers the RDAEF Clinical and Practical Examinations five or more times per year in two or more locations. On each administration date, the clinical examination is administered once in the morning while the practical examination is administered once in the afternoon. Examiner training occurs simultaneously with examination administration.

On October 7, 2017 the Board held one administration of the RDAEF Clinical and Practical Examinations at UCLA School of Dentistry, with simultaneous examiner training. On October 14, 2017, the Board held one administration of the RDAEF Clinical and Practical Examinations at UCSF School of Dentistry, with simultaneous examiner training. OPES could not be physically present at both examination administrations and both examiner trainings to compare them directly. At UCLA, OPES staff observed the test administrations; at UCSF, OPES staff observed the examiner training.

However, based on observations at both test locations, it appears that the locations are equal with regard to standardized check-in and registration procedures, candidate instructions, examination administration, test security protocols, and examiner training and scoring. OPES staff was able to reach this conclusion for the following reasons:

- OPES staff was able to observe the site and layout of both testing environments.
- OPES staff was able to observe the scoring of the examinations at both testing environments.
- The same individuals (Board staff and testing staff) administer the Board's examinations at both locations.
- At both locations, examiner training is conducted by the same Chief Examiner.

Finding 1: The standardization of administrations with regard to replicating the administrations of the tests between multiple site locations meets professional guidelines and technical standards.

CHAPTER 3. EXAMINER TRAINING AND TEST SCORING

STANDARDS

The following standards are most relevant to examiner training and test scoring for licensing examinations, as referenced in the *Standards*.

Standard 4.20

The process for selecting, training, qualifying, and monitoring scorers should be specified by the test developer. The training materials, such as the scoring rubrics and examples of test takers' responses that illustrate the levels on the rubric score scale, and the procedures for training scorers should result in a degree of accuracy and agreement among scorers that allows the scores to be interpreted as originally intended by the test developer. Specifications should also describe processes for assessing scorer consistency and potential drift over time in raters' scoring. (p. 92)

Standard 4.21

When test users are responsible for scoring and scoring requires scorer judgement, the test user is responsible for providing adequate training and instruction to the scorers and for examining scorer agreement and accuracy. The test developer should document the expected level of scorer agreement and accuracy and should provide as much technical guidance as possible to aid test users in satisfying this standard. (p. 92)

Standard 6.8

Those responsible for test scoring should establish scoring protocols. Test scoring that involves human judgment should include rubrics, procedures, and criteria for scoring. When scoring of complex responses is done by computer, the accuracy of the algorithm and processes should be documented. (p. 118)

FINDINGS

Examiner Orientation/Training

On October 14, 2017, the examiner orientation/training session at the UCSF test site occurred twice – once for the clinical examination in the morning, and once for the practical examination in the afternoon. Both training sessions included clear instructions for how to perform candidate scoring. The grading sheets and the criteria for grading were discussed in detail. In addition, the RDAEF Chief Examiner provided information about what to look for during scoring [REDACTED].

Both morning and afternoon training sessions included standard exercises for the training of examiners on scoring procedures and for the anchoring/calibrating of examiners. [REDACTED]

[REDACTED] Thus, the Chief Examiner ensured that all examiners met the minimum standards for being allowed to score candidate performance.

Finding 2: Standard exercises for training examiners on scoring procedures, for anchoring/calibrating examiners, and for assessing the results of examiner training and calibration were evidenced.

Test Scoring

Before the scoring process, examiners were instructed to follow the scoring protocols and to direct questions to designated staff or to the Chief Examiner as needed. [REDACTED]

[REDACTED] Examiners were also instructed that scoring should be performed based on the specific scoring criteria and should not be based on what is “perfect” or on a given examiner’s opinion.

[REDACTED] Therefore, it appeared that the scoring process met professional guidelines and technical standards.

Finding 3: The scoring criteria are applied equitably to ensure the validity and reliability of the examination results. The test scoring process meets professional guidelines and technical standards.

[REDACTED]

RECOMMENDATIONS

Although there was evidence of standard exercises for training examiners on scoring procedures, for anchoring/calibrating examiners, and for assessing the results of examiner training and calibration, more exercises should be included. [REDACTED]

[REDACTED]

Recommendation 1: Include more slides during examiner training to improve calibration [REDACTED]

[REDACTED]

[REDACTED]

Recommendation 2: Include a few visual examples for each scale point [REDACTED]

[REDACTED]

CHAPTER 4. TEST ADMINISTRATION

STANDARDS

The following standards are most relevant to standardizing the test administration process for licensing examinations, as referenced in the *Standards*.

Standard 3.4

Test takers should receive comparable treatment during the test administration and scoring process. (p. 65)

Standard 4.15

The directions for test administration should be presented with sufficient clarity so that it is possible for others to replicate the administration conditions under which the data on reliability, validity, and (where appropriate) norms were obtained. Allowable variations in administration procedures should be clearly described. The process for reviewing requests for additional testing variations should also be documented. (p. 90)

Standard 4.16

The instructions presented to test takers should contain sufficient detail so that test takers can respond to a task in the manner that the test developer intended. When appropriate, sample materials, practice or sample questions, criteria for scoring, and a representative item identified with each item format or major area in the test's classification or domain should be provided to the test takers prior to the administration of the test, or should be included in the testing material as part of the standard administration instructions. (p. 90)

Standard 6.1

Test administrators should follow carefully the standardized procedures for administration and scoring specified by the test developer and any instructions from the test user. (p. 114)

Standard 6.3

Changes or disruptions to standardized test administration procedures or scoring should be documented and reported to the test user. (p. 115)

Standard 6.4

The testing environment should furnish reasonable comfort with minimal distractions to avoid construct-irrelevant variance. (p. 116)

Standard 6.5

Test takers should be provided appropriate instructions, practice, and other support necessary to reduce construct-irrelevant variance. (p. 116)

FINDINGS

Test Administration – Directions and Instructions to Candidates

The *Registered Dental Assistant in Extended Functions Candidate Handbook* is mailed to each candidate. This handbook provides candidates with information regarding RDAEF examination requirements and prohibitions, general descriptions and examination administration procedures, required materials, grading and scoring criteria, and appeals.

Throughout the administration process, candidates are presented with standardized instructions from testing staff. Testing staff and proctors are strategically placed in specific areas on the floor to assist candidates and to provide instructional information during candidate check-in registration. Once candidates are checked in, they are escorted into an orientation room along with their patients and employer dentists, and they are provided with a scripted orientation speech. Following orientation, the candidates, patients, and dentists proceed to the examination clinic. In the examination clinic, the candidates are provided with scripted instructions over the PA system. The candidates are also notified over the PA system when they have a specific amount of time remaining to complete the examination and when they must stop. These instructions are provided in a clear and uniform manner consistently in both clinical and practical testing sessions.

Finding 4: The directions and instructions provided to candidates appear straightforward. The information available to candidates is detailed and thorough, clearly stating the Board's policies where necessary.

Test Administration – Standardized Procedures

Testing staff and proctors follow standardized scripts, instructions, and checklists throughout the test administration process. Responses to candidate questions are standardized, where applicable. Checklists are used to evaluate site preparedness, to document candidate compliance with infection control procedures (i.e., personal protection equipment [PPE]), and to document candidate apparel and equipment. Operating procedures are also in place, if needed, for emergency preparedness, sexual harassment/misconduct, and other unprofessional conduct – including candidate and examiner/staff dismissal.

The test facility has some signage directing candidates where to go, and the directions to the check-in area are minimally marked and monitored. Additional signage could help further guide candidates because the examinations are administered on very large college campuses.

The testing staff maintain a professional appearance and demeanor. Their roles and responsibilities are well-evidenced, and the check-in process is well-organized. However, candidates should be reminded about prohibited items during check-in. They receive a reminder during the orientation speech, but they should be given an earlier reminder at check-in before entering the orientation room. In addition, even though

patients are reminded to keep their phones off or on silent during the clinical examination, they should be reminded during orientation to keep their phones out of sight during the entire examination.

The timing schedule for test administration is objective and standard, and candidates are able to monitor time remaining. However, the practical examination room at UCLA only has one clock. Additional clocks should be provided in the practical examination room so that all candidates can easily monitor the time remaining.

Finding 5: The policies and procedures established for the test administration process meet professional and technical standards and guidelines. However, minor additions to the existing procedures could benefit the candidates.

Test Administration – Testing Environment

The testing environment was well-lit and set at a comfortable temperature. However, at UCLA the temperature felt slightly warmer in the practical examination room than in the clinical examination room.

Candidate testing stations are identical for each candidate and are evenly spaced to permit confidential performance between candidates. The testing stations allow for the proper placement and anchoring of typodonts in the practical examination, and there is sufficient room to perform the procedures and to place the armamentaria in both the clinical and practical examinations. Testing staff are easily able to monitor communication between candidates, and proctors are able to walk through the testing area to make unobtrusive observations.

Finding 6: The testing environment meets professional guidelines and technical standards.

RECOMMENDATIONS

Although the RDAEF Clinical and Practical Examinations meet professional and technical standards and guidelines with regard to the testing environment and to the policies and procedures for test administration processes, the examinations could benefit from some minor improvements.

Recommendation 3: In the test facility, include more signage directing candidates where to go, and more signage indicating areas that are restricted to candidates and testing personnel only.

Recommendation 4: Remind candidates during check-in about prohibited items, and remind patients during orientation about keeping phones out of sight throughout the entire clinical examination.

Recommendation 5: Provide additional clocks in the practical examination room to ensure all candidates can see a clock.

Recommendation 6: Check the temperature of the testing environment and if possible, adjust as needed to ensure comfort.

CHAPTER 5. TEST SECURITY

STANDARDS

The following standards are most relevant to the test security of licensing examinations, as referenced in the *Standards*.

Standard 6.6

Reasonable efforts should be made to ensure the integrity of test scores by eliminating opportunities for test takers to attain scores by fraudulent or deceptive means. (p. 116)

Standard 6.7

Test users have the responsibility of protecting the security of test materials at all times. (p. 117)

Standard 8.9

Test takers should be made aware that having someone else take the test for them, disclosing confidential test material, or engaging in any other form of cheating is unacceptable and that such behavior may result in sanctions. (p. 136)

Standard 9.21

Test users have the responsibility to protect the security of tests, including that of previous editions. (p. 147)

FINDINGS

During test administration, the following security policies, procedures, and protocols are adhered to and implemented:

- Candidates must provide a current and valid government-issued photo identification for entry into the test site.
- Candidates are prohibited from bringing any personal belongings into the testing rooms other than the required materials.
- Candidate identification numbers are used to designate candidates on all examination and scoring materials and testing stations.
- Areas of the test facility are marked, blocked, or monitored by staff (i.e., only candidates and designated staff are allowed in the testing area).
- Testing staff and proctors are clearly identified (i.e., badges, attire).
- Examiners remain in a separate room away from candidates during testing and do not intermingle with candidates outside the testing area.

- Testing area layout permits the monitoring and observation of candidates.
- All scoring materials remain in a secure, designated area.
- Candidate score sheets are maintained in a confidential and secure manner.
- Only designated staff have access to testing and scoring materials.
- Procedures for candidate dismissal upon completion prevent sharing of information between candidates.
- Candidates leaving the test area during the exam are monitored, and procedures are followed with regard to candidate movement and activity.
- Following administration, all test and scoring materials are accounted for, secured, and prepared for conveyance.

In addition to these security measures, the Board's *Registered Dental Assistant in Extended Functions Candidate Handbook* also provides information to candidates regarding general requirements and prohibitions during the examination.

Finding 7: The Board, through its internal test administration and security protocols, provides a robust framework of test site and examination security policies and procedures.

CHAPTER 6. TEST FAIRNESS

TEST FAIRNESS

The concept of fairness as it relates to testing is applied by the *Standards* in four primary areas: fair and equitable treatment of all test takers during the testing process, fairness as the lack or absence of measurement bias, fairness as access to the construct being measured, and fairness as validity of individual test score interpretations for the intended use(s) (p. 51). One way of characterizing all of these areas is to consider that fairness in testing requires that individuals not be advantaged or disadvantaged in any facet of the testing process because of characteristics that are irrelevant to the construct being tested. Standards 3.1 and 3.4, below, should be understood within the context of individuals from the intended test population from diverse racial, ethnic, gender, age, socioeconomic, and educational backgrounds who have met the eligibility requirements to take the RDAEF Clinical and Practical Examinations.

STANDARDS

The following standards are most relevant to test fairness for licensing examinations, as referenced in the *Standards*.

Standard 3.1

Those responsible for test development, revision, and administration should design all steps of the testing process to promote valid scores for the widest possible range of individuals and relevant groups in the intended population. (p. 63)

Standard 3.4

Test takers should receive comparable treatment during the test administration and scoring process. (p. 65)

Standard 9.14

Test users should inform individuals who may need accommodations in test administration (e.g., older adults, test takers with disabilities, or English language learners) about the availability of accommodations and, when required, should see that these accommodations are appropriately made available. (p. 145)

FINDINGS

Special accommodation requests are included in the Board's individual letter to candidates for admittance to the examination. Candidates are informed that they may also call the Board to request a special accommodation. In addition, they are informed that if their religious beliefs preclude them from taking the examination on Saturday or Sunday, they must include a note indicating the day on which they cannot take the

examination and the reason why. The Board approves any necessary accommodations under the Americans with Disabilities Act.

In addition, as noted previously in Chapter 4, the Board has policies and procedures for standardizing the test administration. These procedures contribute to fairness in that all candidates receive the same instructions in the same way. Candidates have opportunities to ask questions in a group setting so that all candidates present hear the question and the response together. The candidate orientation prior to the examination, as well as the scripted instructions provided during the examination, ensure that all candidates have the opportunity to hear the instructions and to hear any clarifications by the administration's facilitators of potential areas of confusion.

Finding 8: The Board takes measures to ensure that the examination is fair for all candidates with regard to special accommodations and equitable treatment.

CHAPTER 7. CONCLUSIONS

Information about the RDAEF Clinical and Practical Examinations was gathered from Board staff, testing staff, dentists (examiners), and the RDAEF Chief Examiner. This information, coupled with OPES' observation of two test administrations at two different locations, established that the examinations meet professional guidelines and technical standards with regard to reliability of measurement, examiner training and scoring, test administration, test security, and fairness.

However, OPES recommends that the Board include additional slides during examiner training to enhance the level of examiner calibration, and that the Board institute a few minor improvements to the testing procedures and the testing environment to further improve the test administration process for all candidates (i.e., provide additional signage and clocks, provide additional reminders about prohibited items during check-in, and check room temperature). OPES believes that these small recommendations would increase the reliability and validity of the examinations.

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