

The DLOSCE:

A National Standardized High-Stakes Dental
Licensure Examination

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Overview

- Background and overview of the DLOSCE
- Test development and the construction of a high stakes OSCE for Dental Licensure
- Q & A

Objective Structured Clinical Examinations (OSCEs)

- Objective Structured Clinical Examinations (OSCEs) were developed to assess clinical competence in the medical field
- OSCEs are now widely used in the health sciences
 - Part of the US Medical Licensing Examination for all US medical graduates
 - The NDEB Canada uses an OSCE for dental licensure in Canada
- OSCEs can measure clinical skills such as communication, clinical examination, knowledge of procedures, prescriptions, etc.
- Typically, examinees rotate through a circuit of short standardized stations (e.g., 5 to 10 minutes each)
- Stations can focus on different elements of clinical competence

OSCE Benefits

- OSCEs offer many potential benefits (Harden, Lilley, and Patricio, 2016):
 - Can assess a broad range of clinical skills
 - All examinees are assessed using the same stations, on the same competencies and the same tasks
 - Allows for more reliable skill assessment
 - Can assess candidate skills without endangering patient health
 - Capable of assessing clinical and theoretical knowledge
 - Improved candidate perceptions of fairness

DLOSCE Background

- At the request of the Council on Dental Education and Licensure (CDEL), a business plan was developed by the ADA Department of Testing Services (DTS) under the direction and guidance of CDEL.
- Both CDEL and the ADA/ADEA Joint Licensure Task Force strongly endorsed the business plan.
- As recommended by the ADA Board of Trustees Budget and Finance Committee, in February 2017 the Board of Trustees approved the requested funds to begin examination development in 2017.
- The ADA Board of Trustees authorized formation of a DLOSCE Steering Committee, charged with the task of developing and validating the DLOSCE.
- **The DLOSCE pilot exam will be available in late 2019, with anticipated deployment in 2020.**

DLOSCE Steering Committee Composition

Per the directive of the ADA Board of Trustees, the composition of the DLOSCE Steering Committee includes:

Number of Members	Representing Stakeholders
2	ADA Board of Trustee members
2	Council on Dental Education and Licensure (CDEL) -- general practitioners
2	Dental educators -- experience in teaching comprehensive clinical dentistry
2	Current state dental board members -- practicing dentists

DLOSCE Steering Committee

- Dr. Gary L. Roberts, former ADA president, has appointed the following individuals to the DLOSCE Steering Committee:

BOT Directive	Appointee
ADA Board of Trustees members	Dr. Richard Black- Chair (TX) Dr. Roy Thompson (TN)
CDEL members who are general dentists	Dr. Edward J. Hebert (LA) Dr. Prabu Raman (MO)
Educators with experience teaching comprehensive clinical dentistry	Dr. Michael Kanellis (IA) Dr. Frank Licari (UT)
Current state dental board members	Dr. David Carsten (WA) Dr. Mark R. Stetzel (IN)

DLOSCE Steering Committee Charge and Activities

- Identify governance structure for DLOSCE administration
 - Governance structure must avoid conflicts of interest; potential means of accomplishing this could be through a Commission.
- Identify and establish examination content areas and test specifications (using results from a practice analysis).
- Establish general structure for examination and permissible item formats (multiple choice, manikin, haptic feedback device, etc.).
 - Contract key vendors (e.g., technology, testing vendors) to support examination administration.
- Establish test construction team (TCT) structure.
 - Call for Test Constructor applications
- Identify state(s)/region(s) for the DLOSCE field test(s).
- Develop an examination guide.

ADA Policy and OSCE Acceptance

- DLOSCE development supports ADA policy calling for the elimination of patients from the dental licensure examination process.
- The DLOSCE will serve as another tool that state boards can use to help determine candidate qualifications for licensure.
- Each dental board will make its own choice on whether or not to use the DLOSCE.
- Currently Colorado and Washington accept an OSCE for initial licensure, with no restrictions.
- Currently Minnesota accepts the Canadian OSCE for initial licensure. Canadian OSCE is administered annually at the University of Minnesota, for UM graduates only.
- Other states currently considering an OSCE for initial licensure, with no restrictions.

Department of Testing Services (DTS)

DTS is working with the Steering Committee to implement the DLOSCE. DTS is a shared service of the ADA that implements high-stakes admission and licensure testing programs for:

Joint Commission on National Dental Examinations (JCNDE)	Council on Dental Education and Licensure (CDEL)
<ul style="list-style-type: none"> • National Board Dental Examinations (NBDE) <ul style="list-style-type: none"> • Part I • Part II • INBDE (under development) • NBDHE 	<ul style="list-style-type: none"> • Dental Admission Test (DAT) • Advanced Dental Admission Test (ADAT)
Outside clients	ADA Board of Trustees
<ul style="list-style-type: none"> • Optometry Admission Test (OAT) • Canadian Dental Admission Test (CDAT) • Additional clients 	<ul style="list-style-type: none"> • Dental Licensure Objective Structured Clinical Examination (DLOSCE)

DTS Units

Examination Content, Scoring, Analysis, New Development

Test Development

Conducts Test Construction Team (TCT) meetings for seven examination programs (80+ meetings annually)

Research & Development - Psychometrics

Oversees analysis and scoring of examinations (45,000+), professional investigations, and technical publications in support of examination programs

New Psychometric Development & Innovations

Provides psychometric support in the development of new testing programs.

DTS Operations

Test Administration

Oversees application processing and test vendor administrations (40,000+ examinations)

Responds to phone calls, live chats, emails, faxes (nearly 70,000 annually)

Resolves testing day problems

Test Security and Fraud Prevention

Test security policies, procedures, and candidate appeals; risk assessment

Communications

Provides communications for stakeholders and communities of interest

Client Services/Special Projects

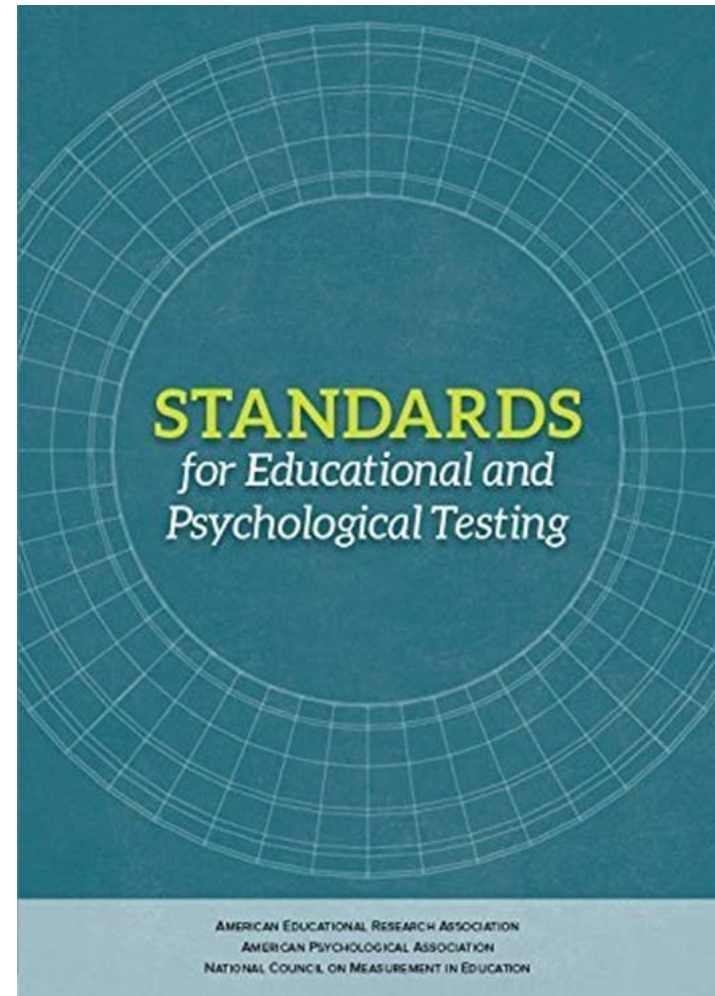
Project management and services to outside clients

Volunteer and Meeting Coordination

Oversees volunteer activities and meeting logistics for TCT and governance meetings.

Standards for Educational and Psychological Testing (2014)

- DLOSCE development efforts are informed by the *Standards for Educational and Psychological Testing*
- The *Standards* provide considerations for developing, implementing, and evaluating tests
- The *Standards* were developed by the American Educational Research Association (AERA), American Psychological Association (APA), and the National Council on Measurement in Education (NCME)



Validity

- The concept of *validity* is the most important fundamental consideration in developing and evaluating tests (AERA et al., 2014, p. 11)
- Validity refers to the degree to which evidence and theory support a specific interpretation of a test score for a proposed use (AERA et al., 2014, p. 11)
- A *validity argument* lays out the evidence in support of a specific interpretation of a test score
- **Standard 1.0.** Clear articulation of each intended test score interpretation for a specified use should be set forth, and appropriate validity evidence in support of each intended interpretation should be provided (AERA et al., 2014, p. 23)

Validity: An Example

- An example...
- **Intended test use:** A testing organization might propose that its examination can be *used* by dental boards to identify candidates who do NOT possess the clinical skills required for safe practice
- **Proposed score interpretation:** The organization might propose that scores from the examination can be *interpreted* as representing “competence” with respect to the clinical skills required for safe practice
- Validity is the degree to which evidence and theory support that specific score interpretation

The Validation Process

- *Validation* is the process of developing a validity argument and collecting evidence to support that argument
- Kane (2013) has indicated that validation involves evaluating the coherence and completeness of arguments supporting the interpretation of test scores for a given purpose
- When acquired validity evidence reveals weaknesses or deficiencies, the testing organization is expected to take steps to address the deficiencies to strengthen the validity argument
- The validation process is an ongoing one – validity should not be thought of as being dichotomous (yes/no)

Content-related Validity Evidence

Content-related Validity Evidence

- According to the *Standards*, “Validation of credentialing tests depends mainly on content-related evidence, often in the form of judgments that the test adequately represents the content domain associated with the occupation or specialty being considered” (AERA et al., 2014, p. 175)
- “Construct underrepresentation” – a threat to validity – occurs when test content does not fully represent the relevant content domain (AERA et al., 2014, p. 175)

Content-related Validity Evidence: Practice Analysis

- Typically, some form of *practice analysis* provides a basis for defining the content domain covered by a licensure test (AERA et al., 2014, p. 182)
- A practice analysis is a systematic study of the tasks performed by members of a given occupation or profession (e.g., general dentistry)
- Often, a practice analysis involves surveying members of the profession regarding the frequency with which they perform certain tasks, and the criticality of those tasks in practice
- The results of a practice analysis help test developers establish “a close link between test content and the job or professional/occupational requirements” (AERA et al., 2014, p. 178)

Content-related Validity Evidence: Expert Judgment

- Typically, decisions about examination content are informed by judgments from *subject matter experts* who are familiar with the requirements of the profession/occupation (AERA et al., 2014, p. 175)
- Subject matter experts often provide judgments regarding the appropriateness or representativeness of the content appearing on a licensure examination (AERA et al., 2014, p. 25)
- Expert judgment can provide a rationale and evidence in support of the inclusion or exclusion of certain content from an examination

Reliability

- In testing, *reliability* refers to the consistency of scores across replications of a testing procedure (AERA et al., 2014, p. 33)
- **Standard 2.0.** Appropriate evidence of reliability/precision should be provided for the interpretation for each intended score use (AERA et al., 2014, p. 42)
- Reliability is reduced by random error, which can be caused by such things as fluctuations in candidate attention or memory, momentary distractions present in the testing environment, and inconsistencies in examiner ratings
- Evidence of high score reliability strengthens a validity argument

Standard Setting

- *Standard setting* is the process of determining a cut score for an examination
- **Standard 5.21.** When proposed score interpretations involve one or more cut scores, the rationale and procedures used for establishing cut scores should be documented clearly (AERA et al., 2014, p. 107).
- **Standard 5.22.** When cut scores defining pass-fail or proficiency levels are based on direct judgments about the adequacy of item or test performances, the judgmental process should be designed so that the participants providing the judgments can bring their knowledge and experience to bear in a reasonable way (AERA et al., 2014, p. 108).

Documentation of Validity Evidence

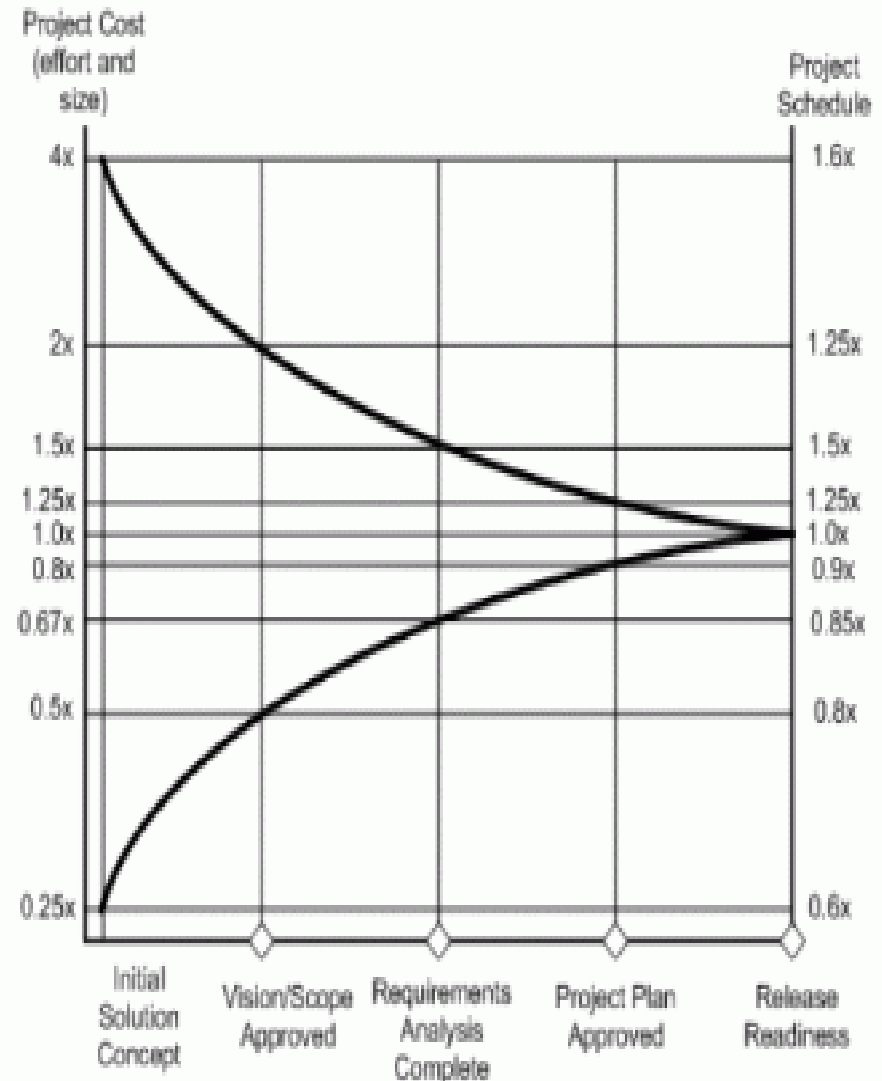
- “Supporting documents for tests are the primary means by which test developers, publishers, and other providers of tests communicate with test users” (AERA et al., 2014, p. 123)
- “The objective of the documentation is to provide test users with the information needed to help them assess the nature and quality of the test, the resulting scores, and the interpretations based on the test scores” (AERA et al., 2014, p. 123)
- **Standard 7.4.** Test documentation should summarize test development procedures, including descriptions of the results of the statistical analyses that were used in the development of the test, evidence of the reliability/precision of scores and the validity of their recommended interpretations, and the methods for establishing performance cut scores (AERA et al., 2014, p. 126)

Twelve Steps for Test Development (Downing, 2006)

1. Planning	7. Test Administration
2. Content Definition	8. Test Scoring
3. Test Specifications	9. Standard Setting
4. Item Development	10. Reporting Test Results
5. Test Design and Assembly	11. Item Banking
6. Test Production	12. Technical Reports / Validation

The DLOSCE and the Cone of Uncertainty*

- We are in the beginning phases of a very complex undertaking.
- Cognitive skills assessment vs. performance based assessment.
- Development of a DLOSCE represents an innovative research endeavor.
 - Research findings can sometimes perplex.
 - Planning has to be flexible to address project needs and stay as close as possible to schedule.



DLOSCE Website and Resources

www.ada.org/dlosce

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Dental Licensure Objective Structured Clinical Examination (DLOSCE)

Dental Licensure Objective Structured Clinical Examination (DLOSCE) FAQ

Volunteer Test Constructor Information

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Dental Licensure Objective Structured Clinical Examination (DLOSCE)

The Dental Licensure Objective Structured Clinical Examination (DLOSCE) is envisioned as a high-stakes licensure examination consisting of multiple, standardized stations, each of which will require candidates to use their clinical skills to successfully complete one or more dental problem solving tasks.


The DLOSCE will be designed to provide information to US dental boards concerning whether a candidate for dental licensure possesses the necessary level of clinical skills to safely practice entry-level dentistry.

The DLOSCE is currently underdevelopment. The following presentation provides additional information.


- [Southern Conference of Dean's and Dental Examiners \(January 2018\)](#)

It is anticipated that a pilot examination will be available in late 2019, with deployment occurring in 2020.

DLOSCE



Frequently Asked Questions



Volunteer Test Constructor Information

Questions?

Thank you!