

NAVLE Orientation for Licensing Board Members

September 13, 2018

AAVSB Meeting
Washington, DC



NBME®

BACKGROUND AND OVERVIEW

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NAVLE Collaboration

Background and Overview

- Co-sponsored and co-owned by the International Council for Veterinary Assessment (ICVA) and the National Board of Medical Examiners (NBME)
- NAVLE developed through contracts between the ICVA and the NBME from 1998 until 2014.
- February 2014 - the ICVA entered into a collaborative relationship with the NBME with regard to the NAVLE.



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NAVLE Collaboration Governance

Background and Overview

Governed by the Collaboration for Veterinary Assessments
Governance Committee

- Equal representation by ICVA and NBME
- Eight voting members and two alternates
- Chair appointed by ICVA
- Administrative officer appointed by ICVA
- Meets twice annually



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NAVLE

Background and Overview

- Developed to replace the National Board Examination (NBE) and the Clinical Competency Test (CCT)
- Requirement for licensure in all jurisdictions in the US and Canada
- November – December 2000 – First Administration of NAVLE
- 3,640 examinees took NAVLE during the 2000-2001 cycle
- 5,832 examinees took NAVLE during the 2017-2018 cycle



NAVLE

Background and Overview

- Content based on blueprint developed through practice analysis
- Two primary domains on examination
 - Species
 - Competency
- One-day, computer-delivered examination
- 360 multiple choice questions
 - 300 Live, 60 Pretest (unscored)
- Two annual testing windows
 - November-December, April



ITEM DEVELOPMENT AND FORM CONSTRUCTION

Melissa Dudlick
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Developing an Exam: A Collaboration

- International Council for Veterinary Assessments (ICVA)
- Assessment Development Committee (ADC)
- Subject Matter Experts (SMEs)
- NBME Editors and Psychometricians

The Exam Cycle: An Overview

1. Item Writing

- Train new writers
- NBME uses pool analysis to develop item-writing suggestions
- SME writers write items for specific species, organ systems, and competencies
- SME writers submit items to NBME editor

2. Item Editing and Review at the NBME

- NBME editors review and edit items
- SME writers complete interim editing
- SME writers review all items at a meeting held at the NBME

3. Exam Construction

- NBME constructs initial version of exam
- Forms Review Committee reviews exam and makes changes
- NBME Editor incorporates changes to develop final exam

4. Exam Administration

- Candidates for NAVLE certification take the exam
- Pool Review Committee evaluates all pretest items
- Pretest items added to item bank to be used on future exams, sent for rewrite, or deleted from item bank per Pool Review Committee decisions

Part I: Item Writing

What Items Do We Need in the Pool?



NBME produces and reviews an updated pool analysis to identify item-writing needs across content areas.

SPECIES	New Items	Used Items with Good Stats	# needed for exam		Competency	New Items	Used Items with Good Stats	# needed for exam
01.BIR	3	59	7		01.A	401	399	205
01.BOV	35	642	40		01.B	97	259	94
01.CAN	68	351	77		01.C	26	54	73



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Item Writing

- NBME sends item writing assignments to SME writers
- SME writers submit items through online tool
- Items are written to specific species, organ systems, and competencies
- Item writers provide and confirm codes for all items and provide relevant images or videos
- SME writers notify NBME editor that assignment is complete and ready for editing



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Part II:
Item Editing and Review with the
NBME

Item-Review Meeting

Items are reviewed by the SME item writers at a meeting held at the NBME in Philadelphia in November of each year.



Items that are approved at this meeting are added to the item pool.



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Part III: Exam Construction

Initial Construction by the NBME

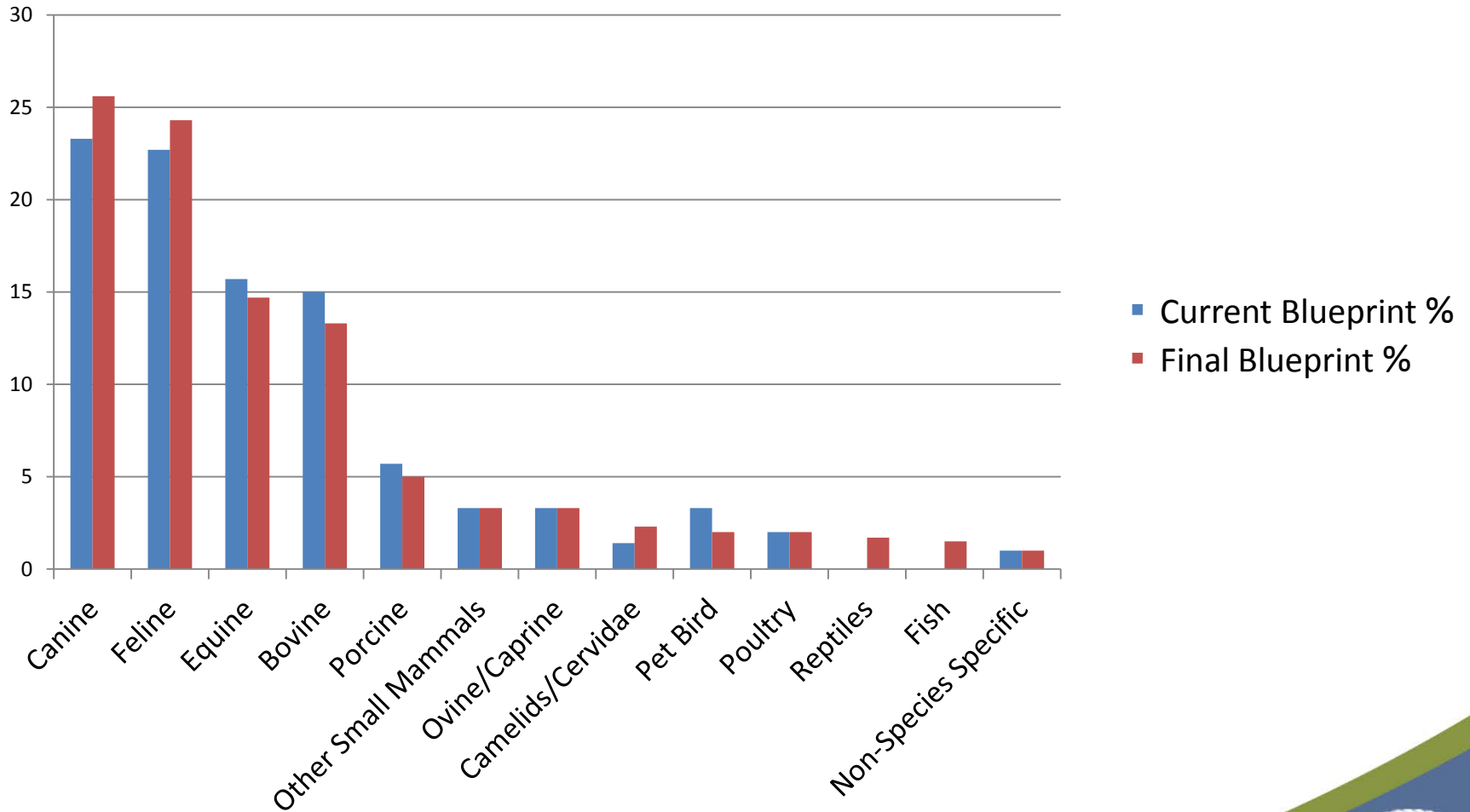
NBME creates an initial version of the 300-item exam.

- ✓ Exam Blueprint
- ✓ Statistical Specifications
- ✓ 300 live, scored items per form

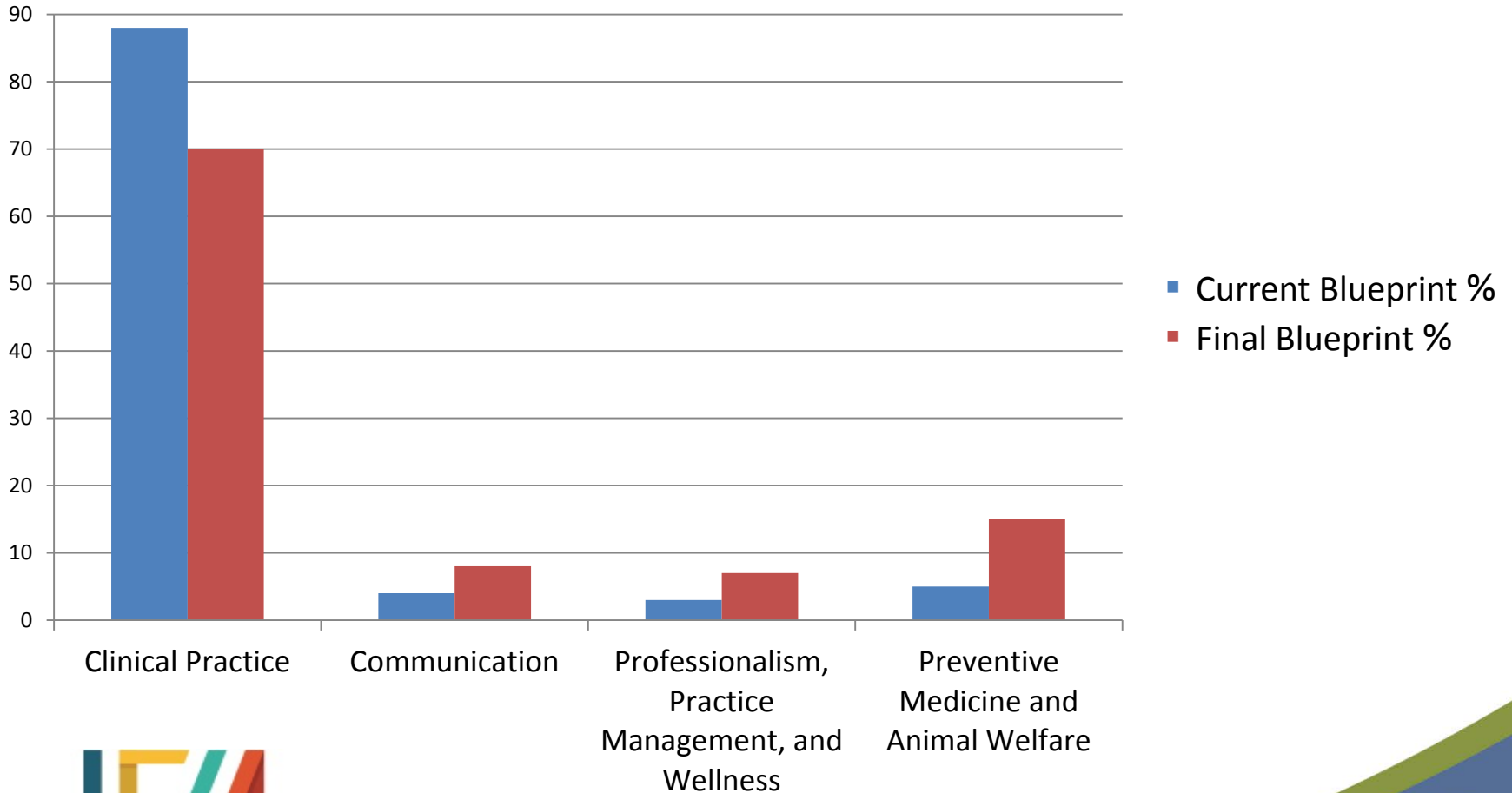
**Examinees see 360 items (300 scored items and 60 pretest items)*



Current vs New Blueprint - Species



Current vs New Blueprint - Competencies



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Form Review, Finalization, and Exam Production

Committee Review

Exam is reviewed as a whole for quality, accuracy, and content overlap.

Problematic items are replaced with items of similar specifications.



NBME editor updates the exam based on Committee decisions.



Exam Production

NBME Editors prepare exam for computer-based test delivery... Multiple rounds of QC checks are completed. Resource file is sent to the vendor to be deployed at test centers.

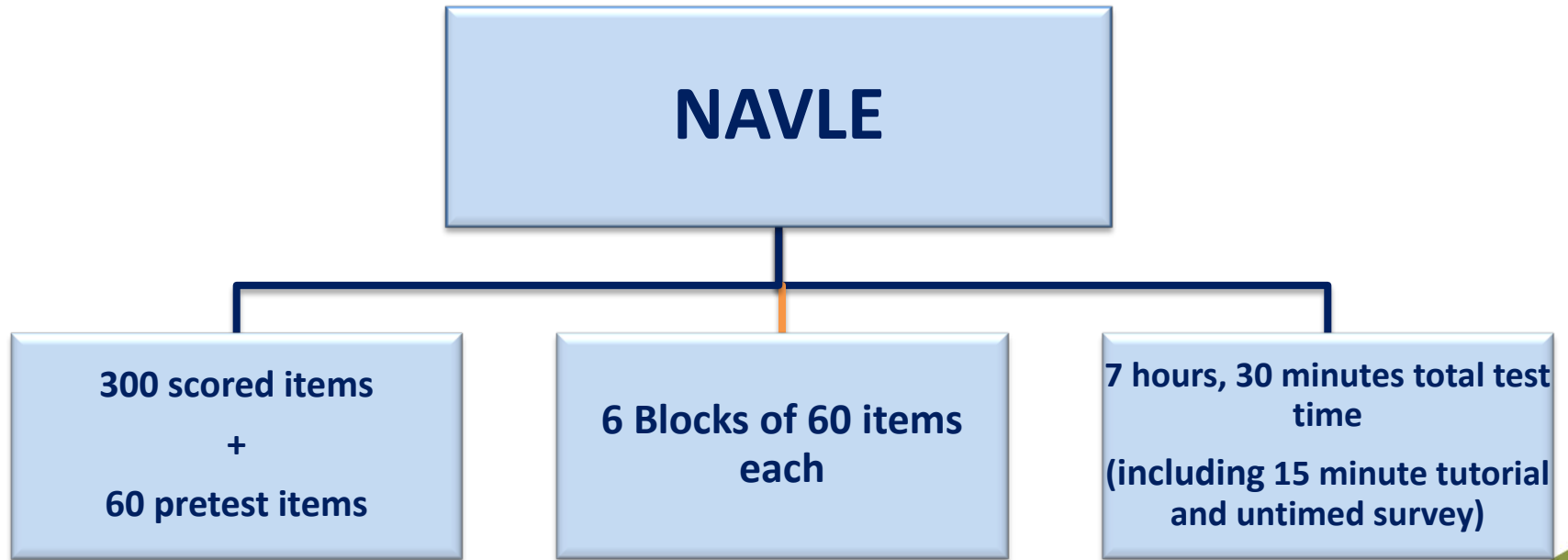


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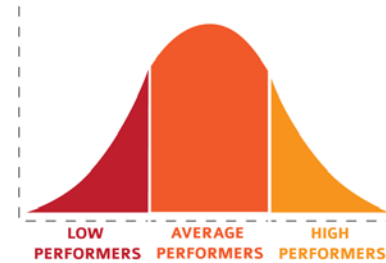
Part IV: Exam Administration

Exam Administration



Pool Review

- Pool review committee reviews all items pretested on exam
 - ✓ Performance statistics
 - ✓ Content accuracy
 - ✓ Key accuracy
- Assign designation per item
 - ✓ Keep and add to the NAVLE item bank
 - ✓ Rewrite to be pretested again
 - ✓ Send item to another ICVA exam bank
 - ✓ Delete item
- Pool analysis is updated and the process begins again



Questions?



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NAVLE SCORING AND STANDARD SETTING OVERVIEW

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Senior Psychometrician
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Pre-Administration



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Psychometric Considerations for Examination Development

Before a test can be scored or even developed, the construct(s) to be measured need to first be defined by addressing questions such as:

- What will the test measure?
- Who are the stakeholders/users of the scores to be produced by the test?
- How will the scores be used?

Psychometric Considerations for Form Building

One or multiple forms can be created by meeting specific form building:

- **Content constraints**
- **Statistical constraints**
- **Policy constraints**



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Post-Administration



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Examination Data Processing

- Initial scoring
- Additional review
- Score conversion
- Score feedback

Score Types

- Raw
- Percent Correct
- Scale Scores
- Equated Percent Correct

Examinee Score Report

The Score Report contains the following:

- Pass/Fail decision
- Total test scale score and Minimum Passing Score
- Equated percent correct for each content area

Score Reports are distributed directly to examinees w/copies sent to:

- Licensing Agencies
- Schools for examinees who gave permission for scores to be released to school

* A file containing examinee demographic and score information is also sent to AAVSB to be added to the VIVA database.

School Reports

- Annual school reports created following the April administration
- Reports contain the following:
 - Mean (SD) total test and sub scores of the senior students who took the NAVLE[®] for the first time during that year
 - Passing rate of the senior students from their school
 - Normative information based on all senior students from accredited schools taking the NAVLE during that cycle year

SETTING THE PASSING STANDARD



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What is a Standard?

A value that answers the question “*How much is enough?*”



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Standard Example

Standards are set in nearly every industry and profession, for example:

Minimum length of a feature film: 40 minutes per the Academy of Motion Picture Arts and Sciences

Minimum passing score on an exam: 425 on NAVLE

Standard Setting Purpose

The purpose of standard setting is to generate information to inform a valid and fair passing standard

Standard Setting Overview

Standard Setting Frameworks:

- **Norm-based**: A passing score is determined based on performance of the group of examinees
- **Content-based**: A passing score is determined by establishing the content that must be mastered in order to pass the examination

Norm-Based Standards

- Examinees
- Ability
- Examples of norm-based standards
 - Specifying a failure rate of 10% & adopting a cut score that fails 10%
 - Adopting a cut score that is one SD below the mean of the group

Content-Based Standards

- Amount of content
- Pass or Fail

*Note: A content-based standard does not depend on the ability of the current group of examinees.

We Use a Content-Based Procedure

How much must a candidate know to pass?

Angoff method (1971):

- Subject matter experts
- “Minimally Proficient Candidate” (MPC)
- Review X’s 2
- Earlier judgments and Revise

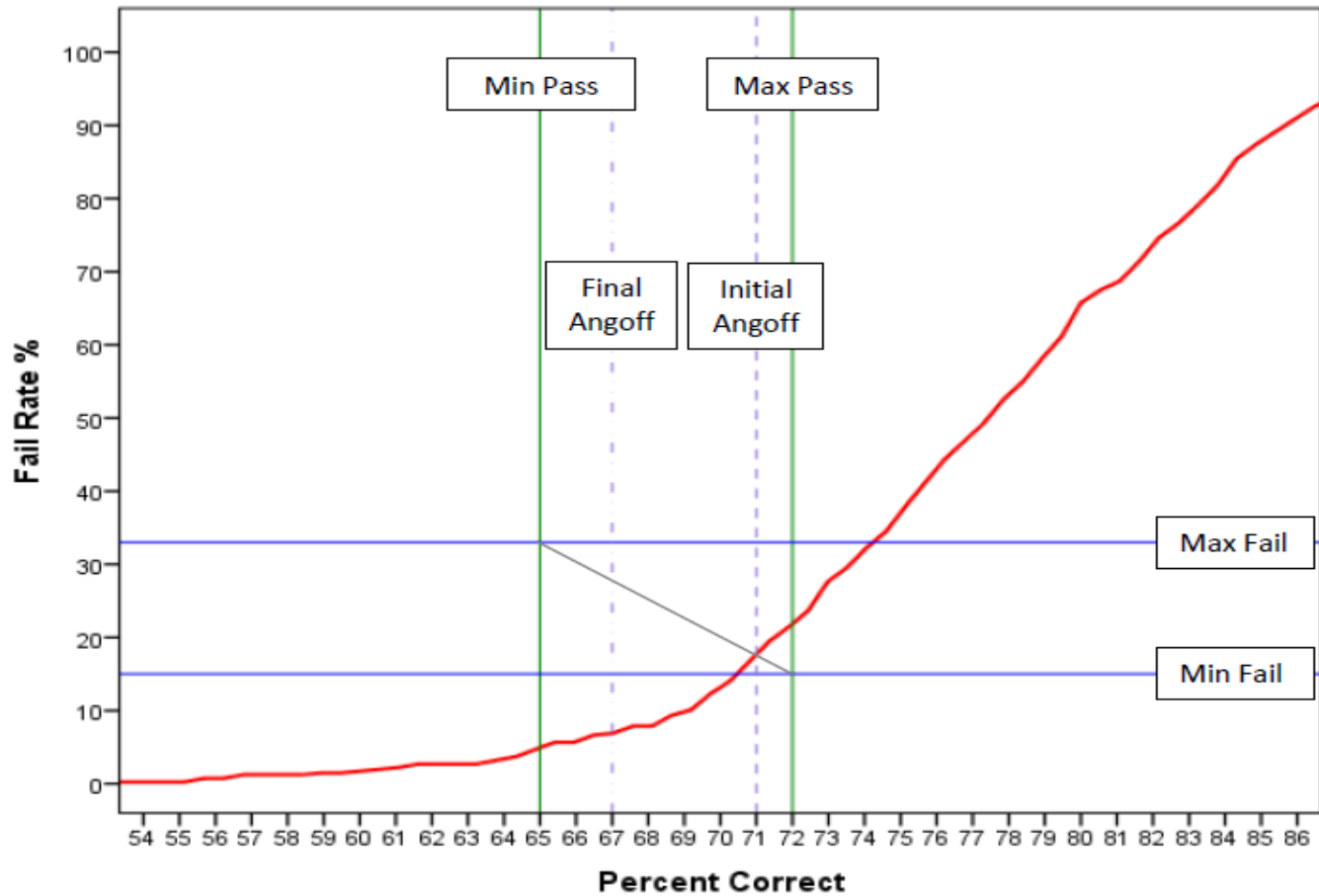
Logic of Angoff Process

- Judgments
- Individual item estimates
- Cut score

...and a Compromise Method

- Hofstee Method (1983)
- Combination
 - Norm-referenced (relative)
 - Content-based (absolute) methods
- Other considerations
- Standard Setting

Example of Angoff-Hofstee Plot



NAVLE Standards

- Current Standard was set in 2011
- Score Equation
- Standard Setting Exercise (summer/fall 2019) to implement starting with the 2019 November/December administration

QUESTIONS?



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