

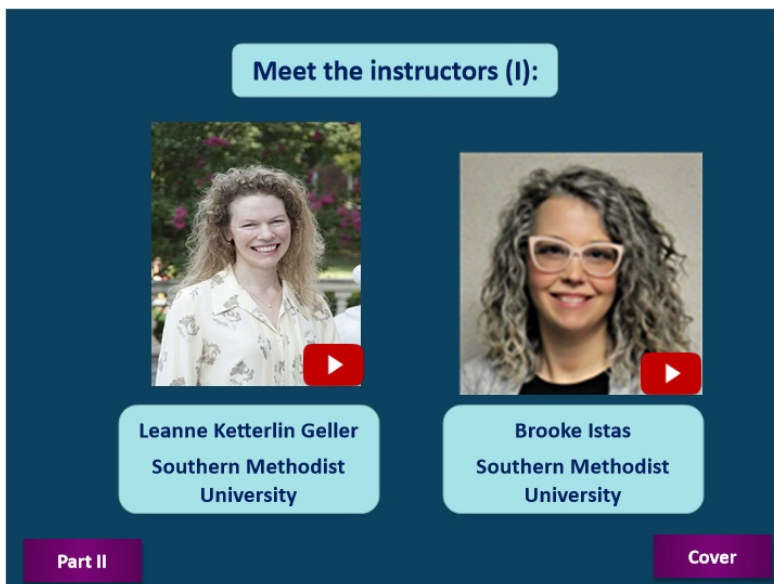
DM15 SLIDES (Accessibility, Version 1.0)

1. Module Overview

1.1 Module Cover (START)



1.2 Instructors (I)



1.3 Instructors (II)

Meet the instructors (II):



Robyn K. Pinilla
Southern Methodist University



Ann Marie Wernick
Southern Methodist University

Part I

Cover

1.4 Designers

Meet the Designers:



Xi Lu
Florida State University



André A. Rupp
Mindful Measurement

Back

1.5 Welcome



**Welcome to the
ITEMS Module!**

The woman to the left is Laura!

Along with the instructors
she will be guiding you
through the module content.

Enter your name here:

Untitled Layer 1 (Slide Layer)



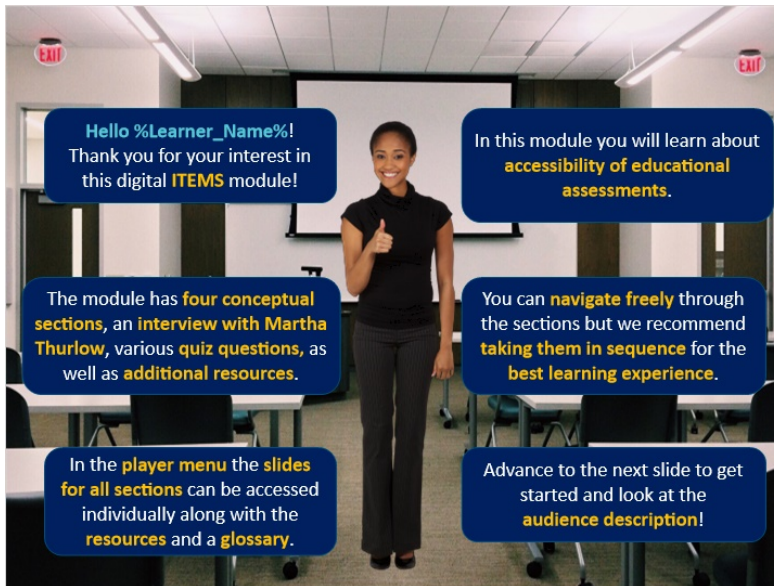
**Welcome to the
ITEMS Module!**

The woman to the left is Laura!

Along with the instructors
she will be guiding you
through the module content.

Enter your name here:

1.6 Overview



1.7 Expectations (I)



1.8 Expectations (II)



1.9 Target Audience

Target Audience

Anyone who would like a gentle introduction to this topic:

- Pre-service teacher preparation educators with a research mindset
- Graduate students in psychometrics, teacher education or educational leadership
- PreK-12 classroom teachers, teacher groups, teacher leaders
- School administrators responsible for teacher evaluation
- School/district assessment and curriculum leaders/facilitators
- Professional developers for in-service teachers
- Educational researchers and test designers



We hope that the module finds other meaningful uses as well no matter what your role in an organization is!

1.10 Objectives

Learning Objectives

1. **Describe** accessibility of educational assessments as related to fairness
2. **Explain** the impact of inaccessible assessments on the validity of the uses and interpretations of test scores
3. **Identify** the impact of test and item features and examinees' personal characteristics on the accessibility of assessments
4. **Know** the legal basis for accessible educational settings in PK-16
5. **Explain** the role that accommodations and universal design for assessment play in enhancing accessibility of assessments
6. **Apply** their understanding of accessibility to situated examples

1.11 Prerequisites

Basic Prerequisites

Learners should have at least a working knowledge of the following:

- Concept of fairness in testing as discussed in professional standards
- Sources of construct-irrelevant variance (CIV)
- Impact of CIV on the validity of test score interpretations and uses
- Test accommodations, modifications, and universal design

1.12 Key Concepts

Key Concepts			
Concept	Definition	Why is it important?	Threats?
Accessibility			
Equity			
Fairness			
Bias			

Pause here and read Chapter 3 of the Test Standards.
You can use this matrix to help organize your notes.

1.13 Resources

Resources
Module Citation Ketterlin-Geller, L., Ista, B., Pinilla, R. K., & Wernick, A. M. (2020). Accessibility of educational assessments [ITEMS Digital Module XX]. <i>Educational Measurement: Issues and Practice</i>, 39, X. Available online at https://ncme.elevate.commpartners.com
 Additional Resources

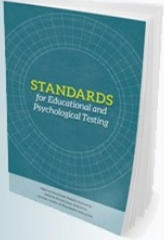
References (Slide Layer)

Resources

2014 EDITION NOW AVAILABLE!

STANDARDS

for Educational and Psychological Testing



Click on the picture to go to learn more.



Back

1.14 Main Menu

**Main Menu**

01 Experiencing Accessibility
[10 Minutes]

02 Understanding Accessibility
[30 Minutes]

03 Accessibility across Platforms
[20 Minutes]

04 Legal Basis for Accessibility
[10 Minutes]

05 Interview: Martha Thurlow
[20 Minutes]

06 Quizzes
[10 Minutes]

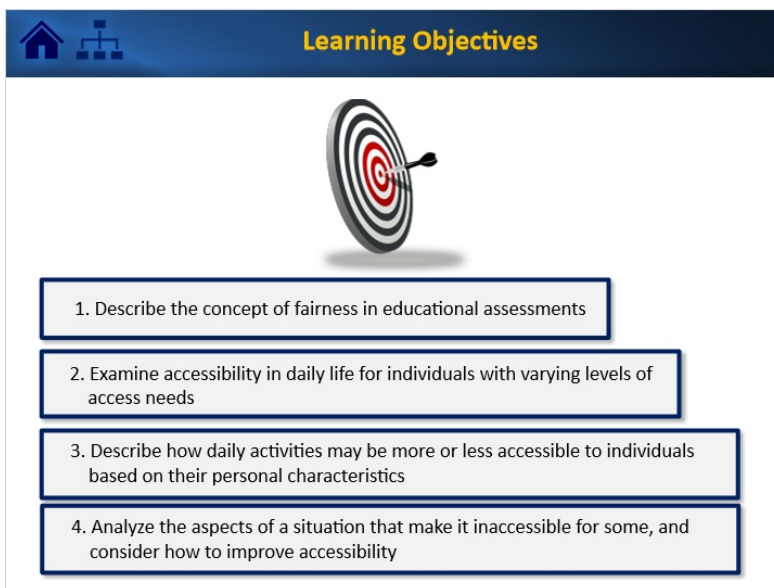
Navigation

2. Section 1: Experiencing Accessibility

2.1 Cover: Section 1



2.2 Learning Objectives

The slide has a dark blue header with a house icon and the text "Learning Objectives" in yellow. Below the header is a large target icon with an arrow in the bullseye. Underneath the target are four white boxes with blue borders, each containing a numbered learning objective.

1. Describe the concept of fairness in educational assessments
2. Examine accessibility in daily life for individuals with varying levels of access needs
3. Describe how daily activities may be more or less accessible to individuals based on their personal characteristics
4. Analyze the aspects of a situation that make it inaccessible for some, and consider how to improve accessibility

2.3 Test Standards: Fairness



Test Standards: Fairness

"Fairness is a fundamental validity issue and requires attention throughout all stages of test development and use" (p. 49).

"...fairness to all individuals in the intended population of test takers is an overriding, foundational concern, and that common principles apply in responding to test-taker characteristics that could interfere with the validity of test score interpretations" (p. 49)

"...equivalence of the construct being assessed is a central issue with fairness" (p. 49)



2.4 Fairness in Testing



Fairness in Testing

Fairness in testing is the impartial use and interpretation of test results:

- Fairness in treatment during the testing process
- Fairness as a lack of measurement bias
- Fairness in access to the construct(s) as measured
- Fairness as validity of individual test score interpretations for the intended uses

Often considered a socio-political concept



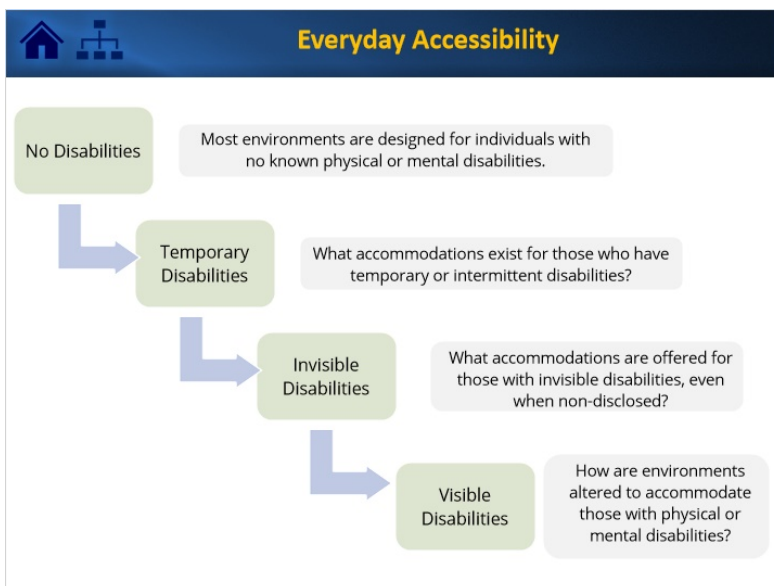
2.5 Example Introduction



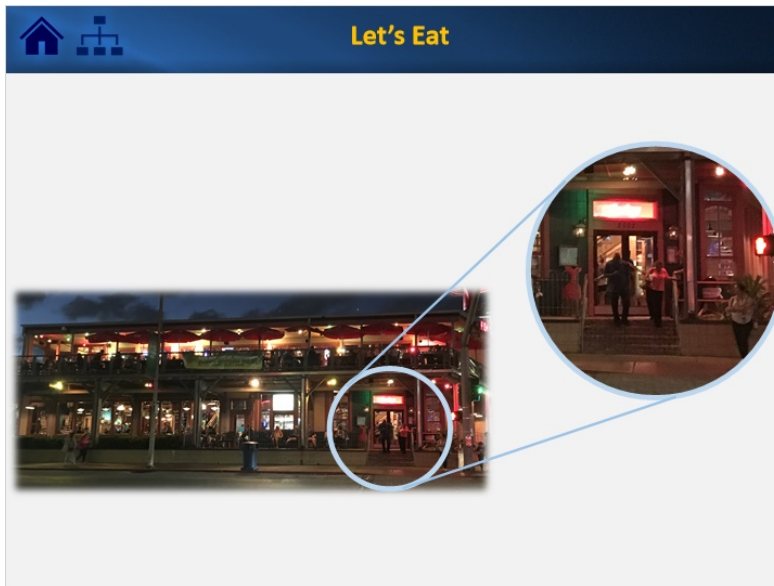


Situated example around ordering in a restaurant

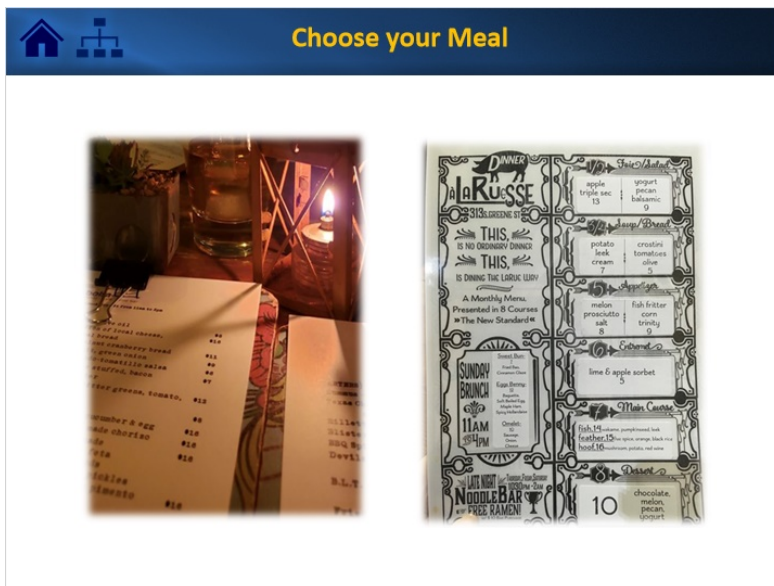
2.6 Everyday accessibility



2.7 Example (I)



2.8 Example (II)



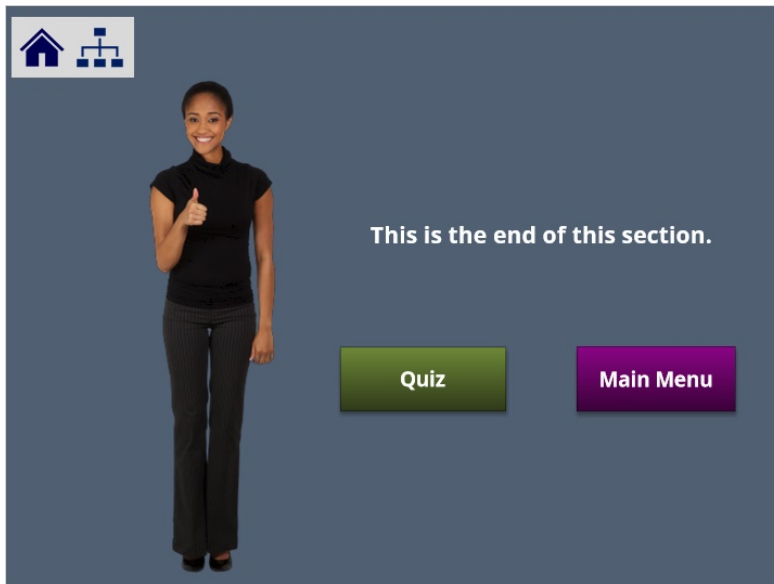
2.9 Example (III)



2.10 Example (IV)



2.11 Bookend: Section 1



3. Section 2: Understanding Accessibility

3.1 Cover: Section 2



3.2 Learning Objectives



Learning Objectives



1. Describe accessibility of educational assessments
2. Explain the impact of inaccessible assessments on the validity of the uses and interpretations of test scores
3. Identify the impact of test and item features and examinees' personal characteristics on the accessibility of assessments
4. Examine the role that accommodations and universal design for assessment play in enhancing accessibility of assessments

3.3 Topic Selection



Accessibility of Assessments

Universal Design

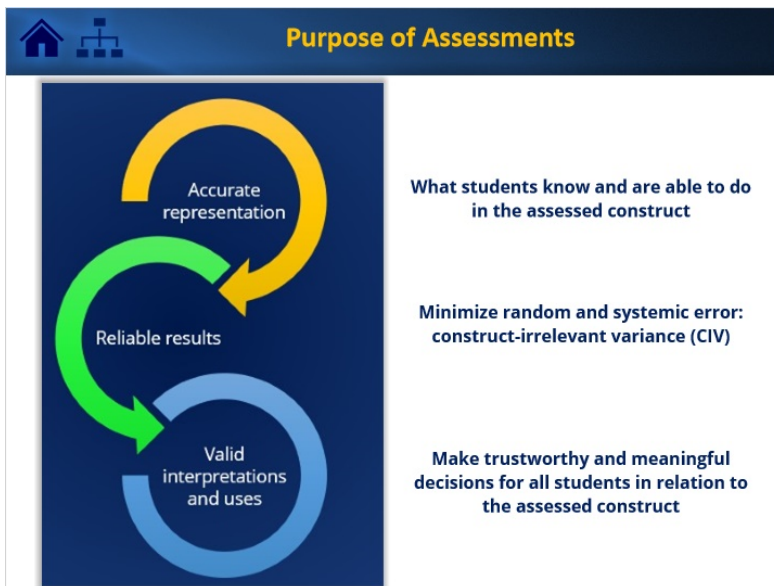
Accommodations

Examples of Accommodations

3.4 Bookmark: Accessibility of Assessments



3.5 Purpose of Assessment



3.6 Accessibility in the Test Standards



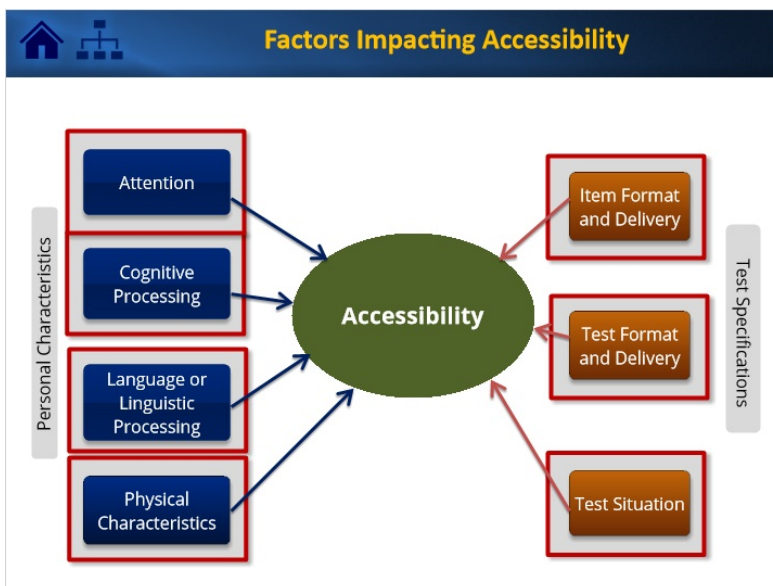
Test Standards: Accessibility

- "Accessibility [is] the notion that all test takers should have an unobstructed opportunity to demonstrate their standing on the construct(s) being measured" (p. 49)
- "...access to the construct the test is measuring can be impeded by characteristics and/or skills that are unrelated to the intended construct and thereby can limit the validity of score interpretations for intended uses for certain individuals and/or subgroups in the intended testing population" (p. 50)





3.7 Factors Influencing Accurate Representation



3.8 Sample test item

Sample Test Item

PSSA MATHEMATICS GRADE 7

OPEN-ENDED QUESTION

17. Archie has a bag of grass seed that he will use to cover a new field. The bag contains information about the area of the ground to be covered and the number of scoops of grass seed needed, as shown in the table below.

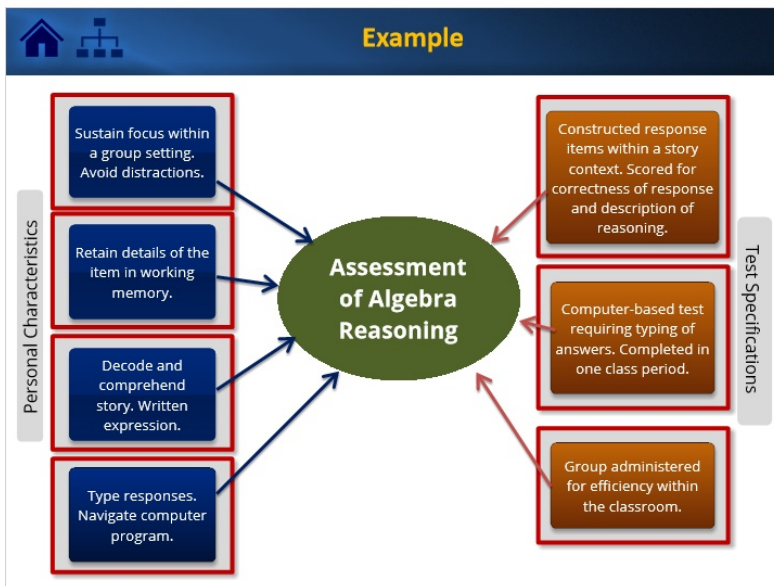
Grass Seed				
Area of Ground to Be Covered (square yards)	50	100	150	200
Number of Scoops	2	4	6	8

A. What is the constant of proportionality between the number of square yards of ground to be covered and the number of scoops of grass seed needed?

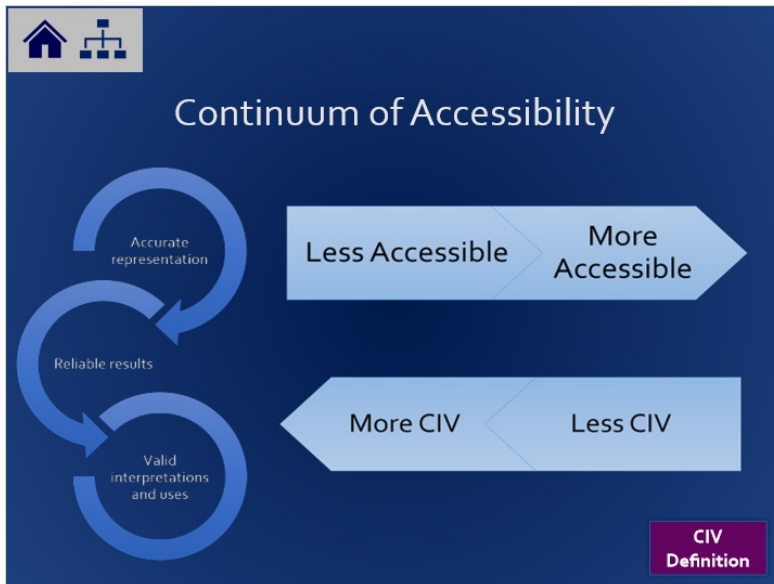
The field Archie will cover with grass seed is rectangular and measures 100 yards long by 60 yards wide.

B. Write an equation that describes the relationship between the number of square yards (x) of ground to be covered and the number of scoops (y) of grass seed needed. Use the equation to determine the number of scoops of grass seed Archie needs to cover the entire field. Show or explain all your work.

3.9 Example



3.10 Continuum of Accessibility



CIV (Slide Layer)

Construct-irrelevant variance (CIV) is "variance in test-taker scores that is attributable to extraneous factors that distort the meaning of the scores and thereby decrease the validity of the proposed interpretations" (AERA, APA, & NCME, 2014, p. 217)

At the bottom of the slide, there are logos for AERA (American Educational Research Association), the American Psychological Association (APA), and NCME (National Council on Measurement and Education). A purple button labeled "Back" is in the bottom right corner.

3.11 Reflection



Reflection Moment

Pause for a moment and consider example grade 7 mathematics test question

- In what ways is this item accessible? And for whom?
- In what ways is this item inaccessible? And for whom?
- What are some possible sources of construct-irrelevant variance?



Test Question

Test Question (Slide Layer)

Test Question

PSSA MATHEMATICS GRADE 7

OPEN-ENDED QUESTION

17. Archie has a bag of grass seed that he will use to cover a new field. The bag contains information about the area of the ground to be covered and the number of scoops of grass seed needed, as shown in the table below.

Grass Seed				
Area of Ground to Be Covered (square yards)	50	100	150	200
Number of Scoops	2	4	6	8

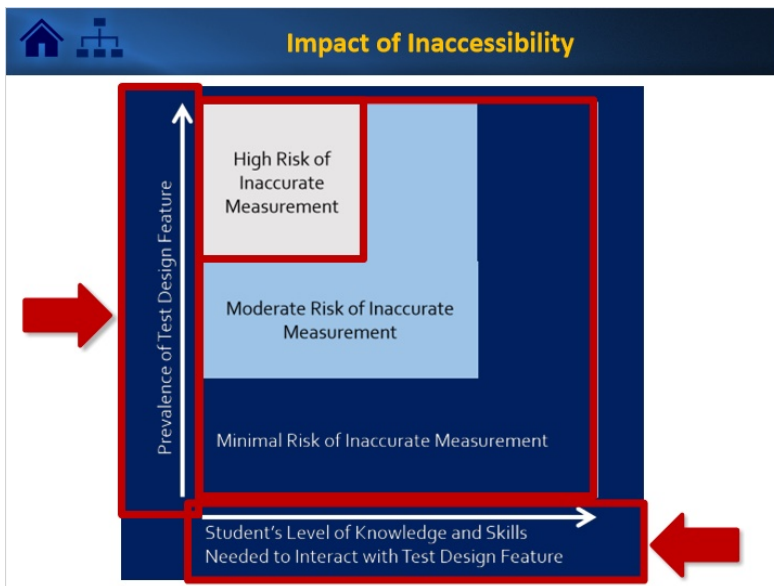
A. What is the constant of proportionality between the number of square yards of ground to be covered and the number of scoops of grass seed needed?

The field Archie will cover with grass seed is rectangular and measures 100 yards long by 60 yards wide.

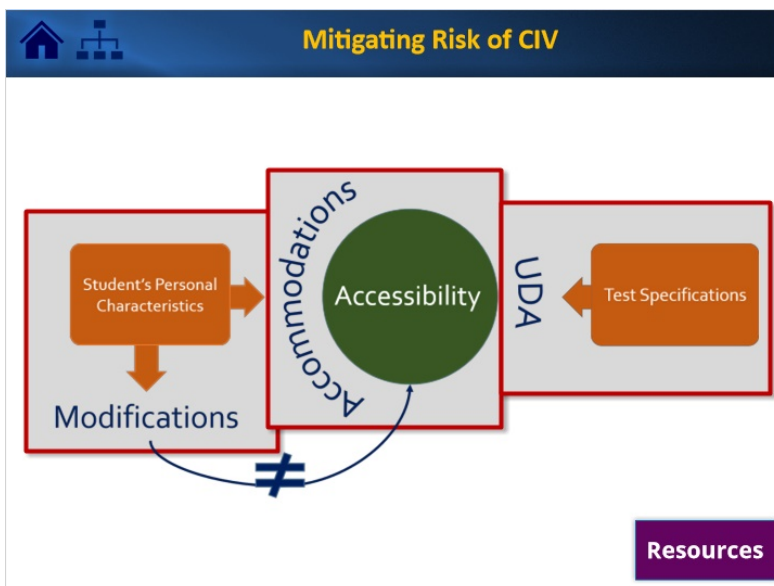
B. Write an equation that describes the relationship between the number of square yards (x) of ground to be covered and the number of scoops (y) of grass seed needed. Use the equation to determine the number of scoops of grass seed Archie needs to cover the entire field. Show or explain all your work.

Back

3.12 Impact of inaccessibility

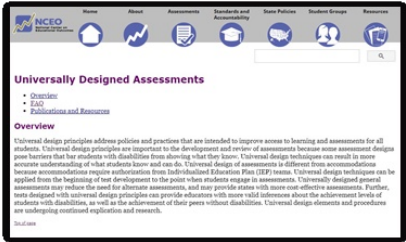


3.13 Mitigating Risk of CIV



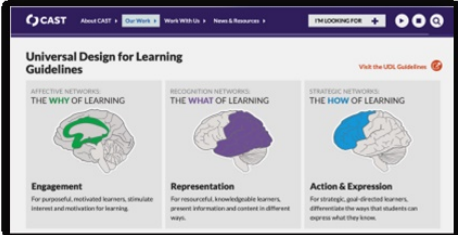
References (Slide Layer)

Resources



Click on each Image to go directly to the websites





3.14 Bookend: Accessibility of Assessments





This is the end of this part.



3.15 Bookmark: Universal Design

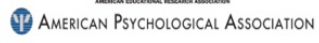


3.16 Universal Design in the Test Standards

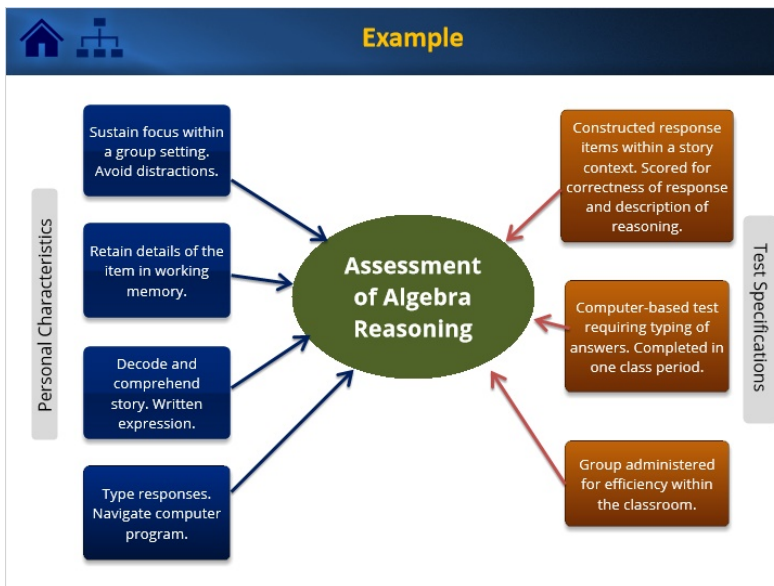


Test Standards: Universal Design

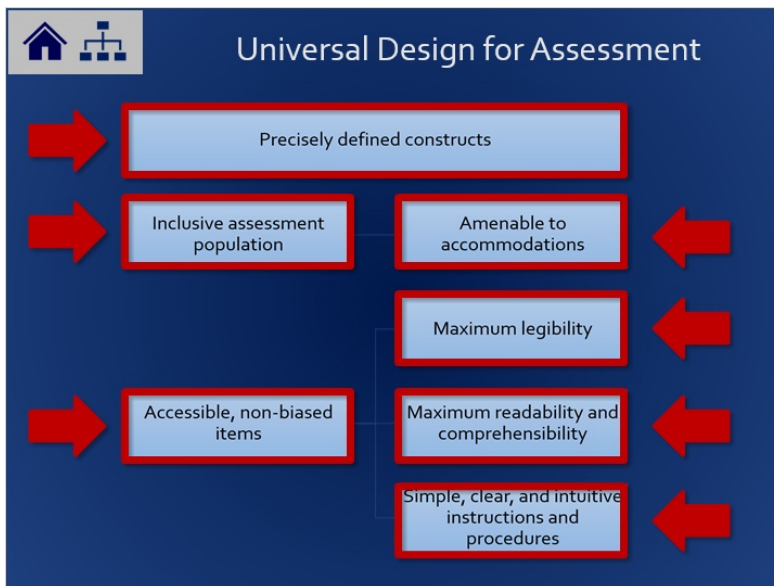
- “Universal design is an approach to test design that seeks to maximize accessibility for all intended examinees” (p. 50)
- “Universal design emphasizes the need to develop tests that are as usable as possible for all test takers in the intended test population, regardless of characteristics such as gender, age, language background, culture, socioeconomic status, or disability” (p. 57)
- “Universal design processes strive to minimize access challenges by taking into account test characteristics that may impede access to the construct for certain test takers...” (p. 58)



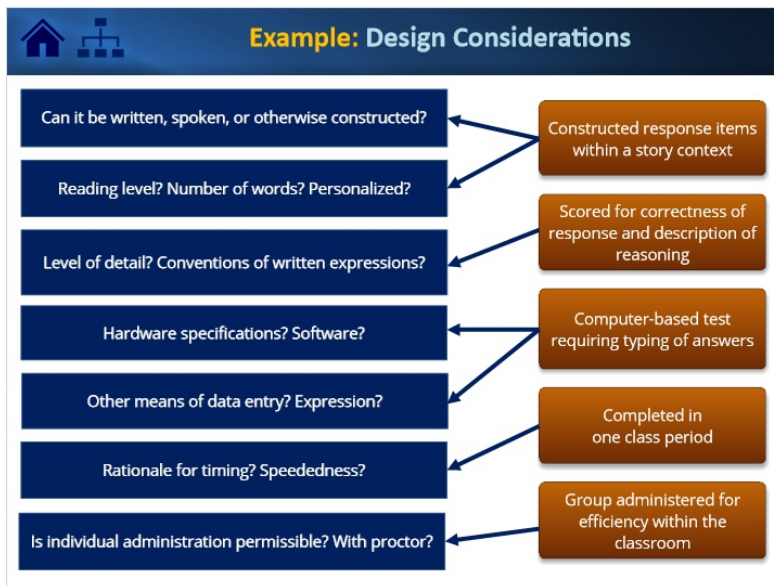
3.17 Example (I)



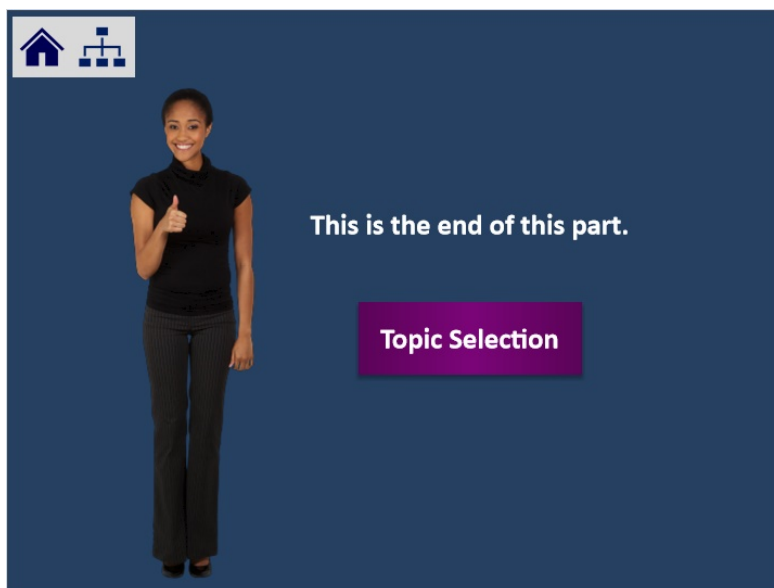
3.18 Universal Design for Assessment



3.19 Example (II)



3.20 Bookend: Universal Design



3.21 Bookmark: Accommodations



3.22 Test Standards: Accommodations

  **Test Standards: Accommodations**

- Accommodations are changes to the original test design “that **do not alter** the assessed construct” (p. 215)
- Accommodations are changes in which the “**comparability of scores is retained**” (p. 58)


AMERICAN EDUCATIONAL RESEARCH ASSOCIATION
 AMERICAN PSYCHOLOGICAL ASSOCIATION

NATIONAL COUNCIL ON MEASUREMENT IN EDUCATION

3.23 Test Standards: Modifications



Test Standards: Modifications

Modifications are changes to the original test design that “affects the construct measured and, consequently, results in scores that differ in meaning from scores from the unmodified assessment” (p. 221)




AMERICAN PSYCHOLOGICAL ASSOCIATION


3.24 Sample test item



Sample Test Item

PSSA MATHEMATICS GRADE 7

OPEN-ENDED QUESTION

17. Archie has a bag of grass seed that he will use to cover a new field. The bag contains information about the area of the ground to be covered and the number of scoops of grass seed needed, as shown in the table below.

Grass Seed				
Area of Ground to Be Covered (square yards)	50	100	150	200
Number of Scoops	2	4	6	8

A. What is the constant of proportionality between the number of square yards of ground to be covered and the number of scoops of grass seed needed?

The field Archie will cover with grass seed is rectangular and measures 100 yards long by 60 yards wide.

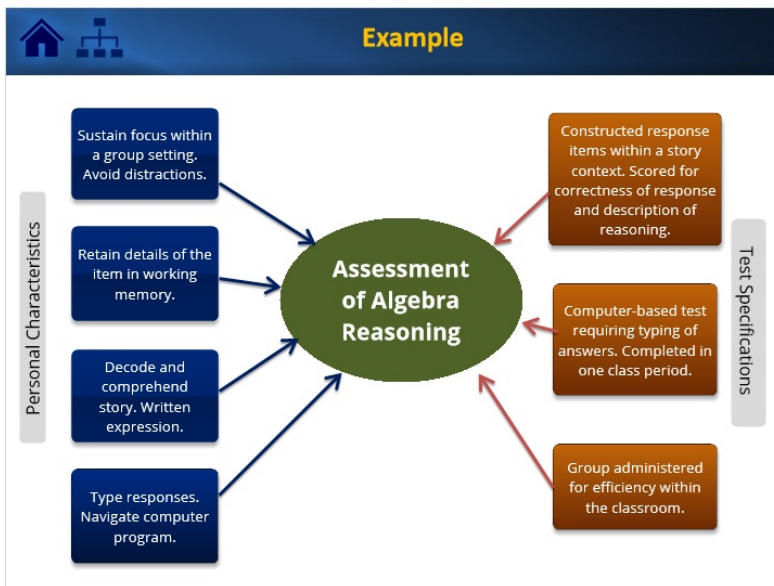
B. Write an equation that describes the relationship between the number of square yards (x) of ground to be covered and the number of scoops (y) of grass seed needed. Use the equation to determine the number of scoops of grass seed Archie needs to cover the entire field. Show or explain all your work.

Content Specifications

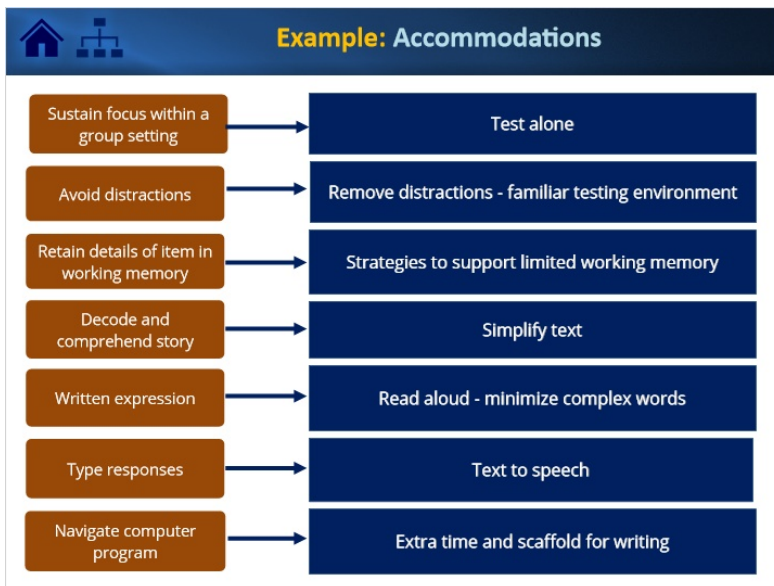
Personal Characteristics

Test Design Specifications

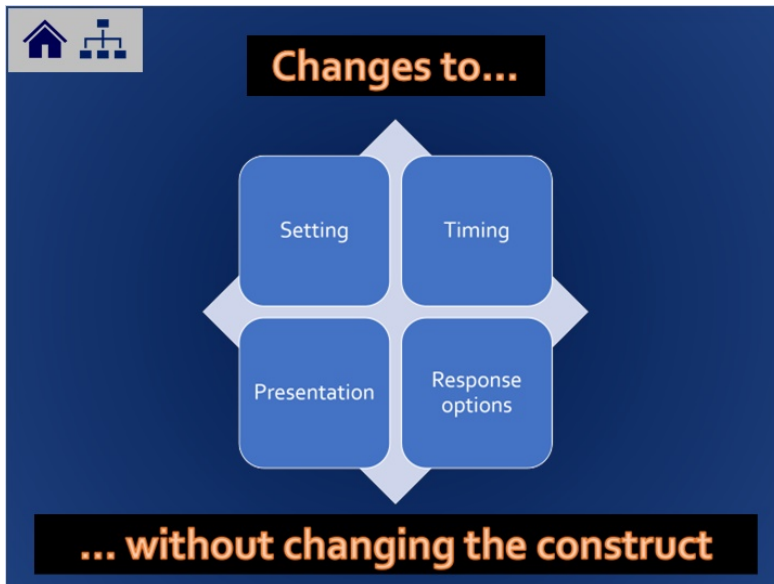
3.25 Example (I)



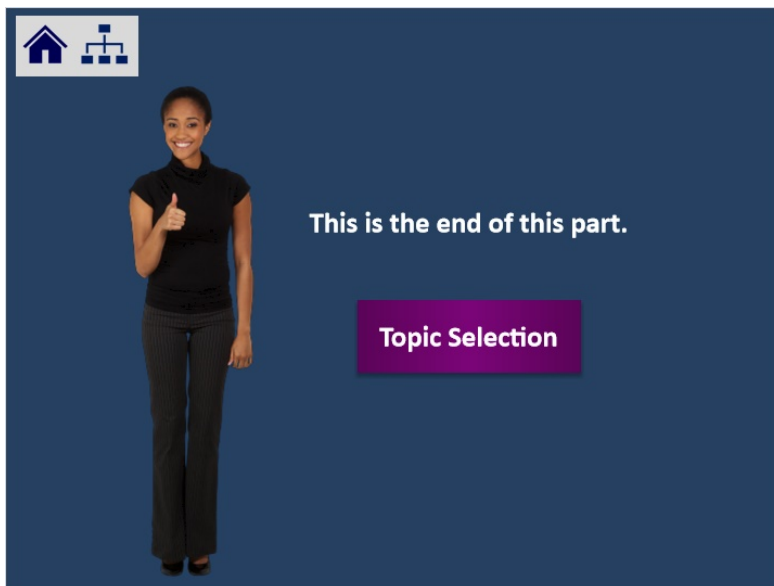
3.26 Example (II)



3.27 Accommodations



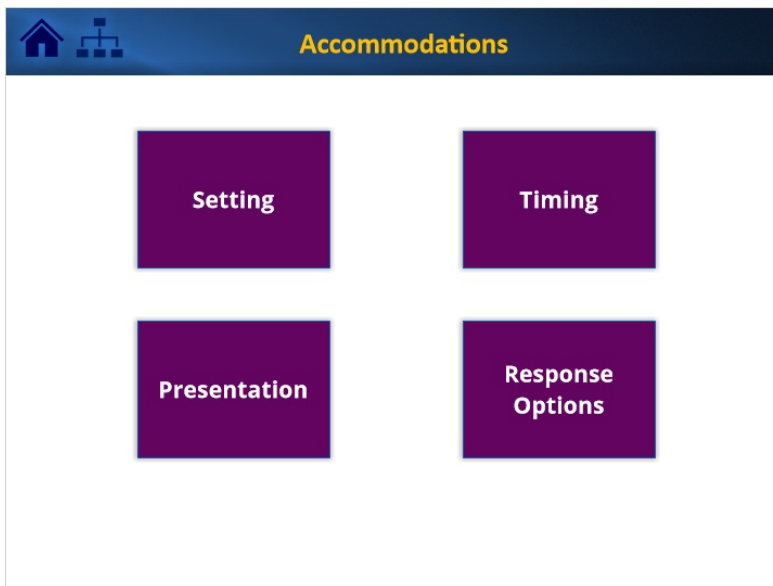
3.28 Bookend: Accommodations



3.29 Bookmark: Grounded Example



3.30 Topic Selection



Setting (Slide Layer)

Setting Accommodations

Changes to the setting or environment of the testing situation

Examples:

- Individual administration in a separate location (for a group-administered test)
- Test administration in an environment that is free from distractions
- Test administration using assistive furniture



Back

Timing (Slide Layer)

Timing Accommodations

Changes to the timing or scheduling of the testing situation

Examples:

- Allocating additional time to complete non-speeded items or test
- Parsing the testing session into multiple, shorter testing sessions (within one day or over multiple days)
- Situating the testing during specific times of the day
- Providing the test taker with frequent breaks



Back

Presentation (Slide Layer)

Presentation Accommodations

Changes to the format of the content or information that is presented

Examples:

- Reading aloud text (incl. instructions, item stem, and/or response options)
- Simplifying language (Incl. Instructions, Item stem, and/or response options)
- Reducing the amount of text on the page
- Presenting the text in Braille or a language other than the original language
- Changing the font size, style, contrast

Back

Response options (Slide Layer)

Response Option Accommodations

Changes to the mechanism through which the test taker responds to items / prompts

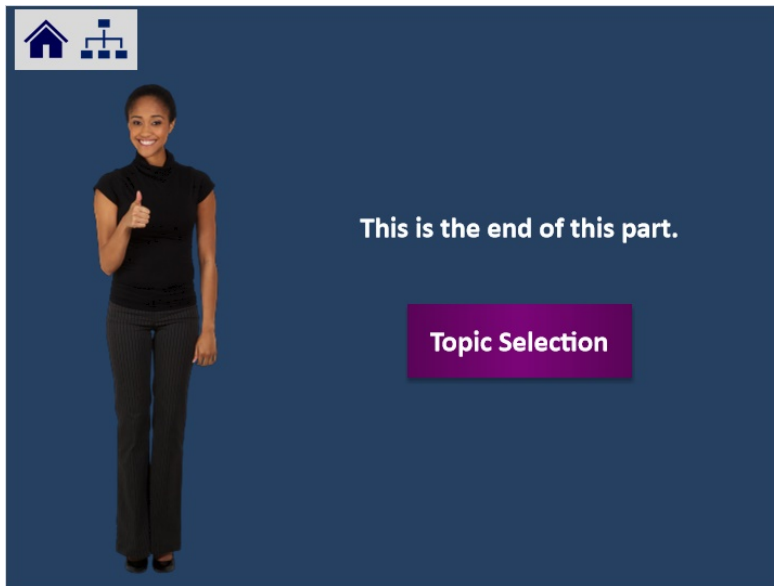
Examples:

- Allowing oral instead of written responses
- Allowing answers directly in a test booklet instead of a separate bubble sheet
- Providing assistive devices such as word processors or Braille

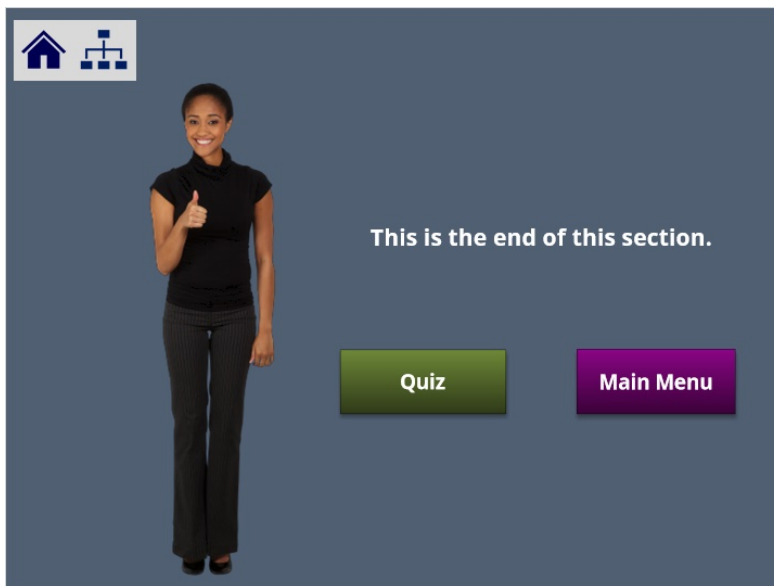


Back

3.31 Bookend: Grounded Example



3.32 Bookend: Section 2



4. Section 3: Accessibility across Platforms

4.1 Cover: Section 3



4.2 Learning Objectives



Learning Objectives

1. Identify features of computer- and paper-based tests
2. Describe how features of computer- and paper-based tests impact accessibility
3. Compare personal characteristics needed to interact with features of computer- and paper-based tests
4. Evaluate the differences in interaction for examinees with computer- and paper-based tests

4.3 Paper-based tests

Characteristics of a Paper-based Test

User Familiarity

Annotation

Written

Elimination of answer choices

4.4 Computer-based tests (I)

Characteristics of a Computer-based Test

Interactive

Colorful

Timer

4.5 Computer-based test (II)

Features of Computer-based Test

Answer Eliminator

Examinees can select **Answer Eliminator** to eliminate answer choices. After clicking on the icon at the top of the screen, a red 'X' will display when they hover over answer choices. They may click on the answer choice or choices they want to eliminate to apply the red 'X'. If they change their mind about the elimination, they can click the red 'X' again to remove it for that answer. Examinees must remove the red 'X' before trying to select that choice as their answer. To turn the feature off, click the icon at the top of the screen or select the pointer icon, .

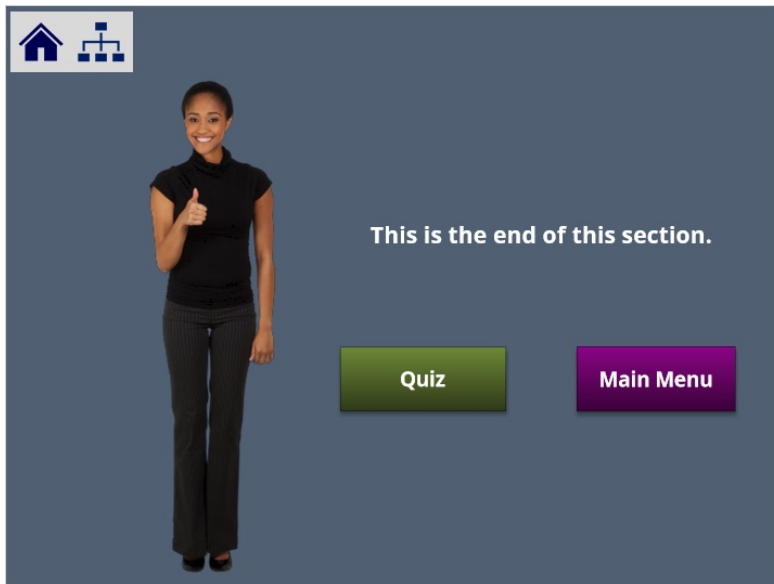
**Answer
Eliminator**

Voice Recording of Question

4.6 Summary

Test	Inaccessibility Features	Accessibility Features	Accessibility Characteristic	Interaction
Paper-based test	Font Size	User familiarity		Personal Characteristics (linguistic processing) & Test Specifications (Item Format)
	Print decoding Limited method for response and navigation	Individual choice in annotation Limited distractions	Item Format and Delivery -- Paper	
Computer-based test	Computer literacy	Audio delivery		Personal Characteristics (linguistic processing) & Test Specifications (Item Format)
	Distractions	Zoom feature Highlighter Answer eliminator	Item Format & Delivery -- Computer	

4.7 Bookend: Section 3



5. Section 4: Legal Basis for Accessibility

5.1 Cover: Section 4



5.2 Learning Objectives



Learning Objectives



1. Identify the legal basis for accessibility in K-12 and higher education contexts
2. Describe the components of IDEA, ADA, 504, and 508
3. Apply concepts of IDEA, ADA, 504, and 508 to different educational settings
4. Identify which laws apply to various educational settings

5.3 Topic Selection



IDEA

ADA

Section 504

Section 508

IDEA (Slide Layer)

IDEA

[Back](#)

- Individuals with Disability Education Act
- Signed into law in 1975 and reauthorized in 2004
- Provides states with federal funding to provide free appropriate public education (FAPE) to children with a disability
- Protects children from birth through high school graduation or age 21 (whichever comes first)
- IDEA covers 13 disability categories
- IDEA is the law that provides students with Individualized Education Program (IEP)
- Having a diagnosis does not guarantee that a child is covered under IDEA
- If a child is denied services under IDEA, they might be able to consider a 504 plan
- It is harder for a student to qualify for IDEA than Section 504
- IDEA doesn't apply to colleges

[IDEA](#)[ADA](#)[504](#)[508](#)

ADA (Slide Layer)

ADA

[Back](#)

- American with Disability Act of 1990
- First comprehensive Civil Rights Law for people with disabilities
- It bans discrimination on the basis of disability in employment, public services and spaces, transportation, and telecommunications.
- Covers people of all ages who have a mental or physical disability that substantially limits a major life activity.
- There are two parts: Title II and Title III.
- Title II prohibits discrimination of state and local governments.
- Services, programs, and activities of schools must be provided.
- No formal written documentation is required.
- ADA extends 504 protections to employers and public spaces.
- ADA and 504 cover the same people.

[IDEA](#)[ADA](#)[504](#)[508](#)

504 (Slide Layer)

504[Back](#)

- Section 504 is part of the Rehabilitation Act of 1973
- A Federal Civil Rights Law that bans disability discrimination
- Is a formal plan for equal access
- Covers students of all ages who have a mental or physical disability that substantially limits a major life activity.
- Reasonable accommodations that allow for equal access to students
- Provide accommodations for college students
- Protections of 504 can overlap with the Americans with Disabilities Act (ADA) and Individuals with Disability Education Act (IDEA)
- The Office of Civil Rights (OCR) enforce Section 504.

[IDEA](#)[ADA](#)[504](#)[508](#)

508 (Slide Layer)

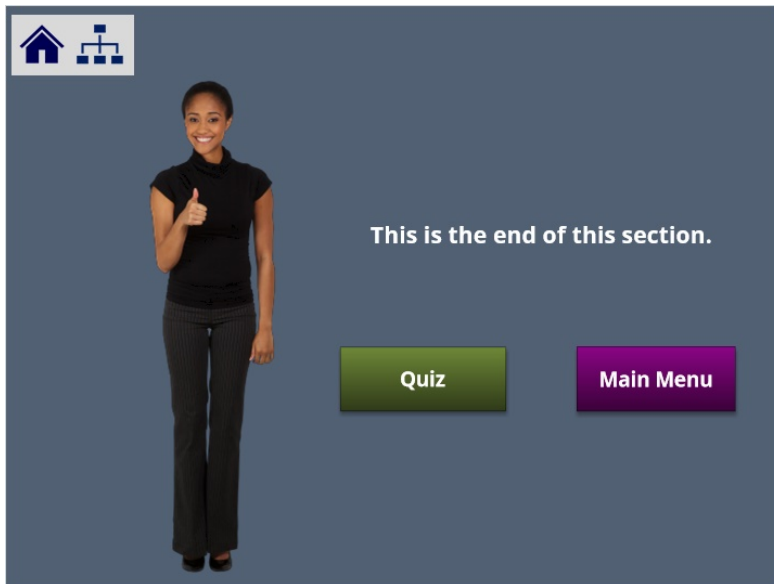
508[Back](#)

- Part of the Rehabilitation Act of 1973
- Adopted in 1998 to require Federal agencies to make electronic and informational communication technology (ICT) accessible.
- 2017 United States Access Board published its final rule for ICT
- Colleges and Universities have begun to implement these standards



[IDEA](#)[ADA](#)[504](#)[508](#)

5.4 Bookend: Section 4



5.5 Module Cover (END)

