

BIAS

NARRATOR'S SCRIPT

CONTENTS

Introduction and Purpose	1
Key Concepts	1
Bias	1
How to Detect Bias	2
Check for Understanding	4
Sources	5

INTRODUCTION AND PURPOSE

The focus of this module is the fourth element of assessment design—bias.

By the end of this module, you should be able to describe what “bias” means for the purpose of these modules and detect potential bias in assessment items.

KEY CONCEPTS

Bias

Now, let's get started.

Bias occurs when an assessment provides an advantage or disadvantage to groups of students because of their personal characteristics, such as race, gender, socioeconomic status or religion.¹ Avoiding bias is important because a biased assessment can mask real learning that is taking place. Writing or selecting unbiased assessment items helps to ensure that you are measuring all of your students' learning on a level playing field and that your items have measured what you actually taught your students.

For example, let's imagine that you intend to measure reading comprehension, and you write an item about a sailing trip. The item will provide information about students' reading comprehension if it is well designed in terms of the other elements of assessment design. The item may also provide information about students' familiarity with sailing—something you do not intend to measure. Typically, sailing is an expensive activity, which means that you may also measure students' socioeconomic status.

Although bias results from *personal* characteristics, we detect bias at the *group* level, not at the *individual* level. This distinction is important because an assessment can provide an advantage or disadvantage to individual students without being biased.

¹ Kansas State Department of Education, “Assessment Literacy Project”; Ohio Department of Education, “Assessment Literacy: Identifying and Developing Valid and Reliable Assessments” (2013); Relay Graduate School of Education, *Designing and Evaluating Assessments* (2014); and Rhode Island Department of Education, “Deeping Assessment Literacy”; Gerunda Hughes, interview with the Reform Support Network, (July 22, 2014).

Consider the example we just referenced. The item may be biased because it measures a difference between groups, that is, their socioeconomic status. It would not be biased because some students simply may know more or less about sailing.

How to Detect Bias

Let's use a few examples to explore this element in greater depth.

Consider this assessment item.

Which of the following measures could be the length of a typical hole in a golf course?

- a. 300 inches;
- b. 300 feet;
- c. 300 yards; or
- d. 300 miles;

Do you think this item may be biased? Why or why not?

This item is similar to the example we just discussed. Typically, golf is an expensive activity. The item may provide an advantage to students who come from more affluent backgrounds and are thus more familiar with the sport of golf.

Let's try another example that we also discuss in the module about precision.

*Choose the **conjunction** that completes the sentence.*

Quarterbacks are often sacked during games _____ they do not have a good offensive line.

- a. even though;
- b. although;
- c. in spite of; or
- d. because²

Do you think this item may be biased? Why or why not?

The item may be biased because it requires students to know facts unrelated to the skill it intends to measure and that may be related to gender. Specifically, the item requires students to know the role of a quarterback and the meaning of the verb "sacked." Boys are more likely than girls to know these facts because football is predominantly played by boys (unlike many other sports).

We could remove the potential bias in this item by adding to the prompt the missing facts. For example:

² New Jersey Department of Education. *SGO 2.0—From Compliance to Quality*. (2014).

Football quarterbacks, **who line up directly behind the offensive line**, are often **tackled** during games _____ they do not have a good offensive line.

Let's try another. Is this assessment item biased?

Choose the **one** answer that best solves the problem.

If one card is taken at random from a deck of playing cards, what is the probability that the card will be an ace?

- a. 8 percent;
 - b. 50 percent;
 - c. 25 percent; or
 - d. 10 percent
-

This is a tricky one. You may have thought, "This item may be biased because some students may not know that a deck of cards has 52 cards and 4 aces, and students who *do* know these facts will have an advantage."

However, bias occurs when assessment provides an advantage or disadvantage to groups of students because of their personal characteristics, such as race, gender, socioeconomic status or religion. We detect bias at the *group* level, not at the *individual* level.

This item is an example of how an assessment can provide an advantage or disadvantage to individual students without being biased. Although this item is not biased, it will still measure something it does not intend to measure. We should consider this assessment item unclear, a concept that we address in a separate module.

How about this item about baseball and football cards that we use in the module about alignment? Is this item biased?³

No, this assessment item is not biased. The item references baseball and football cards, which may be more familiar to boys than girls, but boys will not have an advantage answering this item *based on their gender* because it includes all of the information that students need to construct the correct answer.

These examples highlight the subtlety of bias. Bias does not mean that assessment items cannot include *any* references to topics that may interest some groups of students and not others. That would make designing assessments nearly impossible. It's also unlikely that you will be able to examine assessment results and detect bias for a single classroom of students, but this does not mean that the concept is not important at the classroom level. The key takeaway is that you should spend a *reasonable* amount of time examining assessment items for references that might provide an advantage or disadvantage to groups of students.

³ Oregon Department of Education, "Grade 4 Mathematics Sample ER Item Claim 2."

CHECK FOR UNDERSTANDING

We have addressed the key concepts in this module, so let's review our goals.

At the outset of the module, we set goals that you would be able to describe what "bias" means for the purpose of these modules and detect potential bias in assessment items.

To determine whether we have achieved our goals, let's check your understanding with an assessment item.

Here's the item:

Which of the following is most likely an example of bias in an assessment item?

- a. An assessment item that is too rigorous for some students;*
 - b. An assessment item that assumes knowledge of religious traditions;*
 - c. An assessment item that includes typos and grammatical mistakes; or*
 - d. A social studies assessment item with a political cartoon.*
-

Pause this video if you want a few moments to think about your answer or discuss it with colleagues.

The correct answer to the assessment item is "b": An assessment item that assumes knowledge of religious traditions. While the other examples might provide either an advantage or disadvantage to students, choice "b" is the only one that might provide an advantage to students based on their personal characteristics, such as their religion.

Good work! Thank you for completing the module on bias. Please view additional modules to continue your learning.

SOURCES

Gerunda Hughes, interview with the Reform Support Network, (July 22, 2014).

Kansas State Department of Education. "Assessment Literacy Project." <http://www.k-state.edu/ksde/alp>.

New Jersey Department of Education. *SGO 2.0—From Compliance to Quality*. 2014.

Ohio Department of Education. "Assessment Literacy: Identifying and Developing Valid and Reliable Assessments." 2013. <http://education.ohio.gov/getattachment/Topics/Teaching/Educator-Evaluation-System/How-to-Design-and-Select-Quality-Assessments/AL-Training-PPT-FINAL-for-Distribution.pdf.aspx>.

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Student Achievement Partners. "Mini-Assessment for *Who Was Marco Polo?* by Joan Holub and *The Adventures of Marco Polo* by Russell Freedman." 2014. <http://achievethecore.org/page/502/mini-assessment-for-who-was-marco-polo-by-joan-holub-and-the-adventure-of-marco-polo-by-russell-freedman-detail-pg>.