

# BIAS

## INTRODUCTION AND PURPOSE

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**  
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.<sup>1</sup> 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. The item in the example above 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.

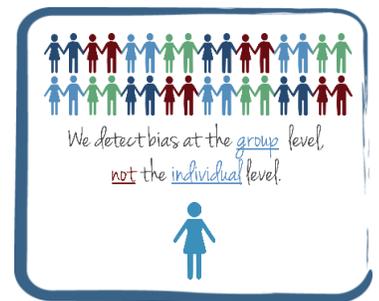
### How to Detect Bias

Let's try an 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
- d. because<sup>2</sup>



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: *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
- d. 10 percent<sup>3</sup>

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, 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 the module about precision.

## CHECK FOR UNDERSTANDING

### Assessment Item

1. 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.

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### Answers

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

*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.*

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<sup>1</sup> 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).

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

<sup>3</sup> Ibid.