Selection Bias: Lesson Plan

<table>
<thead>
<tr>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Selection bias is a phenomenon that occurs when research subjects in studies are chosen improperly or nonrandomly, which creates a sample that isn't representative of the actual target population of the study.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Possible subjects/classes</th>
<th>Time needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Statistics</td>
<td>30-45 minutes</td>
</tr>
<tr>
<td>• Psychology</td>
<td></td>
</tr>
<tr>
<td>• Sociology</td>
<td></td>
</tr>
</tbody>
</table>

Video link: [https://academy4sc.org/topic/selection-bias-dont-forget-about-me/](https://academy4sc.org/topic/selection-bias-dont-forget-about-me/)

Objective: *What will students know/be able to do at the end of class?*

Students will be able to...
- Define selection bias
- Explain representation in samples of target populations.
- Identify selection bias if given an example of a study's recruitment steps.

Key Concepts & Vocabulary

Selection Bias, Sample Population vs. Target Population, Representation, Random vs. Nonrandom Sampling

Materials Needed

Computer to search for an example of a scenario to read aloud to the class

Before you watch

**Turn & Talk:** Students should turn to the person next to them and discuss what they think selection bias is and where they think it occurs.

While you watch
1. Is a sample population and target population the same? Explain.
2. What is the type of selection bias that occurs as a result of an unequal probability of being recruited for a study?
3. In the example of the study about White Americans and African Americans, what type of selection bias is this? Self-selection or sampling bias? Explain.

After you watch/discussion questions

1. Why does selection bias occur?
2. Can selection bias be avoided? If so, explain how you would avoid it if you were a recruiter for a study.
3. Can you think of a study you have learned about that utilizes selection bias?

Activity Ideas

- Role play activity: Two students act as the recruiters of a study and demonstrate selection bias by “recruiting” other students in class for their study
- Students work in pairs or small groups and imagine that either their class, grade, or whole school is their target population for study. Each group thinks of 4 recruitment methods that would lead to selecting a representative sample for their study. The teacher can apply other parameters to the study design based on what else students have been learning.
- Teacher reads a scenario of a study they find from the internet and students have to identify if selection bias occurred in the scenario, as well as state the type of selection bias.

Sources/places to learn more