



BridgeAI Syllabus

Module 4: Ethics, Diversity, and Human Rights in AI

Interactive exercise 2:

Diversity in datasets, representation, and how bias happens

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Interactive Exercise 2 – Bias & Representation in AI

Topic: Diversity in datasets, representation, and how bias happens

Duration: 25–30 minutes

Group size: Small groups (3–4 students)

Objective

Students will understand that **poor representation in AI training data leads to bias**, and they will see how fairness depends on including diverse groups.

Materials Needed

- Scenario Cards (AI tools with missing representation)
- Mini Worksheet: “Spot the Representation Gap”
- Markers & paper OR digital notes
- Timer

Expected Outcome

Each group produces:

- A completed **mini worksheet** showing the representation gap
- A clear explanation of the **bias** that results
- One realistic idea to fix the problem

Students **see the connection**:

Missing representation → unfair AI (bias)

More representation → fairer AI

Instructions

Step 1: Setup

The teacher introduces the exercise and explains:

“AI learns from examples. If the examples only show some kinds of people or situations, the AI will struggle with others.

This is called **poor representation**, and it causes **bias** — unfair results.”



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The teacher gives one example:

Voice AI trained mostly on adult English voices, doesn't understand Somali, Syrian, or Swedish accents from teenagers.

Explain the goal of the activity:

“Your job is to find where representation is missing in each scenario, and how that creates bias.”

Step 2: Activity

Students work in groups and:

Each group receives **one scenario card** (you will get the cards below).

They complete a **mini worksheet** by answering:

Mini Worksheet: “Spot the Representation Gap”

1. **Who is well-represented in the AI training data?**
2. **Who is missing or underrepresented?**
3. **What kind of bias does this create?**
4. **Who might be treated unfairly?**
5. **One way to fix it (add representation)?**

Then groups rotate and present in smaller groups or briefly present their findings in whole class.

Step 3: Debrief

Whole class discussion and teacher leads the discussion:

1. **Which groups were missing most often?**
(children, women, non-English speakers, people with darker skin tones, etc.)
2. **How did missing representation lead to bias in each scenario?**
3. **Why is it important to include people from Sweden, Somalia, Syria, Europe, etc. in datasets?**
→ To make AI fair for your own classroom and community.
4. **How can AI teams reduce bias?**
→ Include more diverse data, test with different groups, ask for feedback.
5. **What happens in society when AI is unfair?**
→ People lose trust, can't access services, get wrongly judged.



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Scenario Cards (for Exercise 2)

Here are **5 scenario cards** specifically focused on representation and bias:

Scenario Card A – The Emoji Skin Tone Problem

An AI suggests emojis for users.

It was trained mostly on images of light-skinned people.

Result: The AI rarely suggests dark-skinned emojis.

→ Who is underrepresented? Who is affected?

Scenario Card B – The “Smart” Classroom Camera

A camera counts how many students raise their hands.

It works well on lighter skin, but struggles to detect darker skin tones.

→ Who is left out? What bias happens?

Scenario Card C – The Voice Assistant

The voice assistant was trained on adult English-speaking voices.

It mishears teenagers, Swedish accents, Somali accents, and Arabic accents.

→ Who is underrepresented? What problem does it cause?

Scenario Card D – The Sports App

A fitness AI was trained mostly on data from adult men.

It gives wrong health advice for girls and younger teens.

→ Who does the AI understand best? Who does it misunderstand?

Scenario Card E – The Translation Tool

An AI translator learned mostly from German, Spanish, and French texts.

It makes big mistakes with Somali and Arabic sentences.

→ Which languages are represented? Which are missing?

