

Alana Robinson & Qianhui Vanessa Zou
Final Project: Unit Plan
SEDC 73600 Curriculum Design
Hunter College, Fall 2022

Impacts of Artificial Intelligence and Machine Learning: How the A.I. BOTS in Our Lives Learn

Lesson 4: Teaching an A.I. Bot, Zhorai through Interaction, (Understanding Knowledge) part 1 (Alana):

Learning Target:

- Students will practice training the A.I. Bot Zhorai, an artificial intelligent conversational agent, and learn how A.I. learns through interaction.
- Students will interact with the conversational A.I. Bot, Zhorai.
- Students will identify what A.I. can learn
- Students will brainstorm the implications of bias in A.I.

Standards:

K-1.CT.2 Computational Thinking - Data Analysis & Visualization

Identify different kinds of data that can be collected from everyday life.

2-3.IC.1 Impacts of Computing

Identify and analyze how computing technology has changed the way people live and work.

2-3.IC.3 Impacts of Computing

Discuss and explain how computing technology can be used in society and the world.

2-3.IC.5 Impacts of Computing

Identify and discuss how computers are programmed to make decisions without direct human input in daily life.

4-6.CT.1 Computational Thinking - Modeling & Simulation

Develop a computational model of a system that shows changes in output when there are changes in inputs.

Sources: Adapted from MIT's Raise AI Curriculum for Grades 3 - 5.

- [*Teacher Video that Introduces how to interact with Zhorai*](#)
- [AIK12MIT - Zhorai](#)
- https://github.com/jessvb/zhorai/blob/master/Report-Materials/6_S898_Zhorai_K12_Education.pdf

Introduction/Hook (I do):

The teacher asks the class to think about how they think Alexa or Siri learn and what they know about how A.I. learn.

- Let's brainstorm how we think Alexa or Siri works?
- Do you think Alexa or Siri can learn new things?
- Do you think we can teach Alexa or Siri new things?

Mini-Lesson (We do): What does Zhorai know?

This activity demonstrates Understanding and Knowledge Representation in Machines.

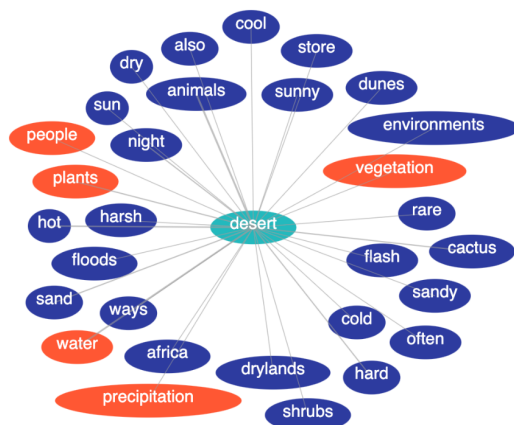
The teacher introduces Activity 1 [What does Zhorai know:](#)

- The teacher demonstrates interactions with the conversational A.I. agent, Zhorai. This is a demonstration of small talk. Then students interact with Zhorai
- After students interact with Zhorai and familiarize themselves with the controls (record and listen buttons), the teacher then explains that Zhorai is visiting earth for the first time and has made a lot of observations about Earth's ecosystems.

- The teacher asks the class if they know what an ecosystem is. (Zhorai knows about the desert, ocean, grassland, forest, and tundra). The teacher says let's look inside Zhorai's brain and see how it thinks!
- The teacher guides students into making observations about the ecosystem mindmaps. The teacher records students asking, "Zhorai, what do you know about deserts?"
- The teacher shows the students what Zhorai's mental map or representation of the ecosystem is (below is an example of these mindmaps from Zhorai)

Ask Zhorai about earth's ecosystems by saying things like, "What do you know about the desert?"

I didn't quite understand that. Pardon?



- ☐ The teacher shows students the sentences that Zhorai's model was trained on. These are some of the sentences that created the desert mindmap

"The desert has lots of sand"

"The desert is very dry"

"Deserts have cactus"

"The desert is very hot and sunny"

"Deserts don't have much water"

"Deserts have few people"

"Deserts have flash floods"

Independent Activity (You do):

Working with elbow partners, students then engage with Zhorai and ask it about other ecosystems and discuss their observations about which ecosystems Zhorai was able to answer and which ecosystems Zhorai was unable to answer:

Students make and develop 2 -3 predictions with their elbow partner about why Zhorai was able to answer about some ecosystems and not others.

- Students ask Zhorai about several different ecosystems and discuss:
 - students ask Zhorai about **tundra** ecosystem
 - students ask Zhorai about **grasslands** ecosystem
 - students ask Zhorai about **rainforest** ecosystem
 - students ask Zhorai about **oceans** ecosystem
 - students ask Zhorai about **plains** ecosystem

Wrap-Up-Debrief/Reflection: How do you want to be assessed? Peer or Self Assessment
Conversation Talk about the activity with your peer (Peer Assessment)

- What did you learn about A.I. from this activity?
- What are you still confused about or have a question about?
- What did you enjoy about the activity?

Exit Ticket (Self-Assessment)

Choose one question to answer

- What did you learn about A.I.?
- What did you enjoy about this activity?
- List 3 examples of A.I. in your life and what makes it A.I.
- What do you still have a question about or are confused about?