

# How do Elementary Students Conceptualize Artificial Intelligence?

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## ABSTRACT

There are few examples of AI education at the primary level. We have started to develop our own elementary AI curriculum and needed to explore what students already knew about AI. We conducted a study to examine how 10 nine- and ten-year-old students conceptualized artificial intelligence: (1) How do elementary students conceptualize artificial intelligence? (2) What are elementary students' experiences with artificial intelligence? Students' definitions of AI tended to focus on programming and robotics. Students described examples of AI that included robotic vacuums, Siri/Alexa, and search engines. They showcased misconceptions around AI.

## CCS CONCEPTS

- Social and professional topics → Computer science education

## KEYWORDS

Artificial intelligence, elementary education, perceptions

## ACM Reference format:

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## 1. Overview

We used semi-structured interviews to gather information on 4th grade students' understanding of artificial intelligence. We selected two contrasting participating teachers' classrooms to provide a greater range of student experiences: one urban with ethnically diverse students and the other rural with predominantly White students. Students' definitions of AI tended to focus on programming and robotics. Students described examples of AI that included robotic vacuums, Siri/Alexa, YouTube, and search engines. They also showcased misconceptions around AI designs and implementations. We plan on using these ideas to construct our curriculum for 3rd - 5th graders, by using relevant examples for students to conceptualize AI and ethical considerations.

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