A Funds of Knowledge Approach to Computational Thinking in Second Graders

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The purpose of this project is to design interactive games that assess computational thinking concepts such as conditional statements, decision making, scheduling, graph traversal, matchings, etc. The games are based on existing cultural knowledge of the 2nd graders that were interviewed by the team from the College of Education. Through these games, the teachers will have a more profound understanding of the students' computational abilities as well as how they incorporate concepts learned in their daily lives while making these decisions.

To accomplish this task, our team implemented four games:
1. A bus game, in which students choose an optimal route to pick up and drop characters and take them to school.
2. An avatar design game, in which students a) create an avatar that satisfies a given set of constraints, and b) classify abstract face parts into given or self-defined categories.
3. A matching game, in which students match churchgoers to church activities in a way that satisfies their preferences. This is the game that is demonstrated in the video.
4. A calendar game, in which students create a schedule for themselves and the people around them in a way that satisfies scheduling constraints.

3-minute video demo: https://bit.ly/3q9JrUM

Games: https://bit.ly/3qajsg2

Documentation: https://bit.ly/3B9uE2Q