

**IITG Project Outcomes Form - Report Outcomes :
Entry # 889****Name of person reporting outcomes**

Ana Jofre

Emailjofrea@sunypoly.edu**IITG Project Title**

2019-SUNY Polytechnic Institute-Jofre-CITE Table for Edu

Have you applied for, or received additional funds? (choose all that apply):

- Other (please specify in text box below)

In 1-3 sentences, how would you describe how your project helps advance the SUNY mission?

This project supports SUNY's mission to provide broad access to education with the development of a technology that expands modes of inquiry to foster a culture of inclusivity. CITE (the Collaborative Interactive Tabletop for Education) is a tangible user interface (TUI) that allows users to physically interact with data. Studies show that TUI measurably increase collaborative behaviour, and that, compared with screen-based interfaces, they offer increased accessibility to those with visual impairments and to those with alternative learning styles. Furthermore, CITE is affordable and open source.

1st Choice:

Instructional Technologies

Instructional Technologies

- Open Source Programs and Apps

2nd Choice:

Learning Environments (Physical)

Learning Environments (Physical)

- Augmented Reality

3rd Choice:

No further selection

What recommendations would you make to scale-up or share your project more broadly (within an educational sector, or perhaps SUNY-wide)?

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Unfortunately, our project was cut short due to COVID-19, and we were not able to do any user testing or to deploy the finished project. We had planned to deploy it in classrooms and in shared student spaces (such as our maker space). We had also planned to ask people at the association for the blind and visually impaired to test it and give us feedback. Since the project consists of a collaborative tabletop in which users share tokens and work together over a tabletop, it is unlikely that we will be able to deploy and test it anytime soon.

Unsure at this time

Do you wish your current abstract to be used?

No

If you wish to re-word the abstract to reflect updates or outcomes, you may do so in this text box (please keep it brief – less than 150 words - you can expand on this in your files and links)

We have developed CITE (the Collaborative Interactive Tabletop for Education), which is a tangible user interface (TUI) that allows users to physically interact with data. Specifically, it allows users to manipulate on-screen data visualizations through the manipulation of hand-held tabletop objects. The system includes sound and touch features that considers users with visual impairments. Research has shown that TUI, such as CITE, enhance collaborative behavior, strengthen learning, and improve user experience. Unlike other systems of the same kind (such as the Microsoft Surface Hub 2 that starts at \$3500), our model avoids using specialized hardware, making the technology adaptable and affordable. We constructed a prototype for CITE using commodity hardware and open-license software, and we created a website where we posted detailed instructions and links to our software so that anyone can build it. The website is at <https://datablocks.org/>.

File One Upload and Brief Description

All our work can be accessed at this link: <https://datablocks.org/>

This includes instructions on how to build the system, our 3d models for the tokens, and the software we developed.

Project Website Address (Hyperlink 1)

<https://datablocks.org/>

Any additional comments or resources you wish to share?

Unfortunately, our work was interrupted by COVID-19 (since it is a tool for hands-on collaboration), and we weren't able to deploy and test our prototype. Without being able to test it, we had to delay publishing in a peer reviewed journal. Once the pandemic is over, we hope to start user-testing, implement campus-wide deployment, and publish our findings.

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