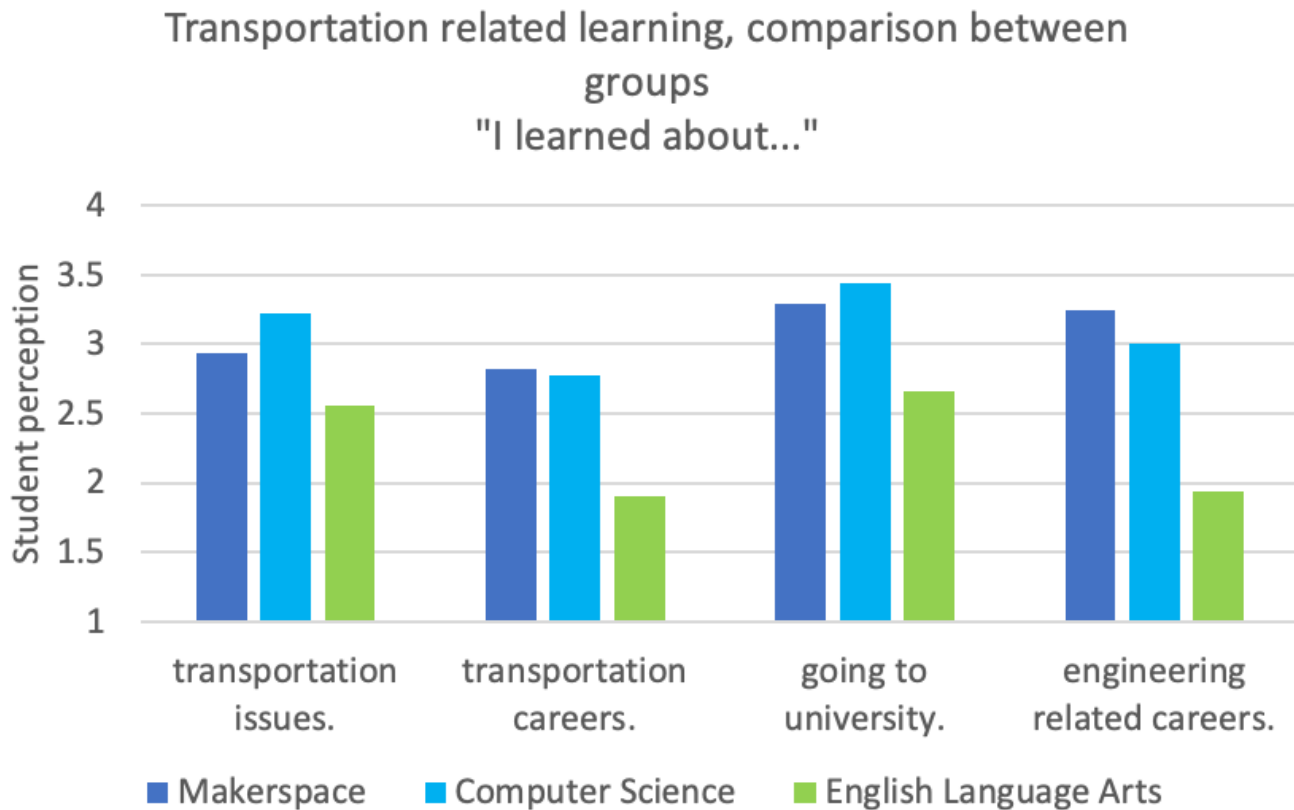


The Fresno State Transportation Challenge

Project 1955
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The “Fresno State Transportation Challenge” engages students in transportation-related projects that make exciting contributions to improving their community. The challenge enables them to learn about transportation and experience efficacy in having a positive impact on their community. The present study examined the impact of the “Fresno State Transportation Challenge” on K-8 students, K-8 teachers, university students, and community members. The participants worked on a project to make a meaningful contribution toward solving a transportation-related issue in the community. The project culminated in a showcase where students presented their work to the community. We focused on three innovative pedagogical approaches. First, we used an action civics

pedagogy for setting the broader context of the project. The action civics pedagogy is rooted in service-learning, civic advocacy, and youth participatory. Second, we used design thinking and engineering thinking processes to emphasize the needs of the community, develop, test, and improve solutions. Third, we used eduScrum as a tool to make learning and the project visible and facilitate the collaboration in self-managing teams.

Study Methods

Our research design consisted of a quantitative and a qualitative study. In the quantitative study, we compared three groups in a survey at the end of the project to assess the impact of the Fresno State Transportation Challenge on student learning and motivation. In the qualitative study, we

captured some of the rich comments of students, teachers, and community members.

Findings

The quantitative data indicated participants in the project demonstrated transportation-related learning and development in the 21st century skills: critical thinking, collaboration, communication, and creativity. Furthermore, these students reported to be more motivated than usual to attend school, persist, and learn from failure. Counter to expectations, they did not report more civic engagement.

The qualitative data captured some of the rich impact of the project. This impact included concrete indications of transportation-related learning, through interactions between K-8 students and the university students and faculty. The richness of the field of transportation enables authentic learning with connections to various content in the curriculum and the students' life experiences. The program exposed K-8 students to a variety of careers related to transportation. Through the interactions with the university students and faculty, they also were encouraged to consider higher education options. In general, students reported this project provided them the opportunity to think about their futures.

A student wrote: "I liked that we got to show people our ideas and what kids can come up with."

Policy Recommendations

Projects like the Transportation Challenge effectively engage K-8 students in transportation-related topics and connect them to university resources. The pedagogical approaches of action civics and eduScrum engaged students and enabled them to make choices on their project, thus boosting their interest. Working in teams also encouraged a highly engaging experience. The eduScrum method, paired with university faculty and student support made it possible for the students to work in different teams and work on multiple different topics according to their interests. This approach assured students had voice and choice, while at the same time covering a wide range of transportation-related topics.

About the Authors

Dr. Christian Wandeler is an associate professor in research methods and statistics at California State University, Fresno. He got a Ph.D. in personality and positive psychology at the University of Zurich, Switzerland. He currently is researching the use of agile learning methods and design thinking in action civics projects. He is a certified trainer of teachers in the eduScrum method.

Dr. Steven Hart is a full professor and has served as the principal investigator for a subgrantee award from the Learn and Serve "Civic Minor in Urban/Metropolitan Education" grant and co-principal investigator for the California State University Chancellor's Office "Preparing a New Generation of Educators for California" grant. Dr. Hart is an expert in service-learning and has served as the service-learning fellow at Fresno State. He has engaged in participatory research with youth exploring literacy practices in service-learning contexts, with community centers developing afterschool programs, and with classroom teachers implementing service-learning pedagogy.

To Learn More

For more details about the study, download the full report at transweb.sjsu.edu/research/1955



The California State University Transportation Consortium (CSUTC), led by the Mineta Transportation Institute, fosters synergies across the entire California State University system to conduct impactful transportation research and engage in workforce development initiatives that increase mobility of people and goods and strengthen California's economy.