In addition to academic and career-related opportunities, connected learning is inclusive of outcomes that engage youths’ civic participation. In contrast to individual service learning projects, those that are asset and action-based include project-based components and make youth feel connected to their local communities (Ito et al., 2020; Ito & Cross, 2022). When learning experiences are designed with connected civic outcomes at top of mind, youth interests and identities are not just a means for engagement, but those interests and identities are matched and intersected with the needs of a community. Furthermore, service learning opportunities can be differentiated to provide multiple entry points that can serve multiple interests simultaneously (e.g., Rivera-Amezola, 2014). Meaningful service learning within a community requires coordination across settings to identify needs to be met as well as creative ways of addressing those needs through coordinated action. For SHINE (Schools and Homes in Education Afterschool Program), service learning is an embedded part of their programming model and the way through which they connect STEM to their core values as an organization.

Background on SHINE

SHINE (Schools and Homes in Education) is an afterschool program operated by Lehigh Carbon Community College in Carbon and Schuylkill counties in Pennsylvania. The program prepares students for success not only in the classroom, but also in their homes, communities and their future careers. The program is focused on a STEAM (Science, Technology, Engineering, Art and Math) curriculum and is designed to promote hands-on, experiential learning. SHINE is offered to students in grades K – 12 from Carbon and Schuylkill Counties in Pennsylvania. The program runs Monday through Thursday for 3 hours immediately following the school day throughout the academic year. Daily programming includes homework assistance, physical fitness, a meal, and participation in a STEAM-focused project. Projects are designed to incorporate multiple disciplines and focus on high priority occupations.

Students in the elementary SHINE program are referred by their classroom teacher, guidance counselor or principal. Middle and high school students in Carbon County may attend the “SHINE Career Academy” with or without referral. SHINE serves approximately 500 students throughout the school year with approximately 75 of those students participating in the Career Academy. This program, held at the Carbon Career and Technical Institute (CCTI), aims to get kids excited about STEAM fields and to expand their perspectives for future career trajectories. Additionally, SHINE and CCTI work jointly to increase enrollment at CCTI. Programming includes homework assistance, a meal, and participation in STEAM-focused projects.

Making Connections through STEAM-Focused Projects

Taryn Stewart, the SHINE Career Academy Coordinator, explained that programming is focused around “rotations” – larger lessons that are designed to incorporate several different STEAM/STEM disciplines into a single project focused around high priority occupations. Projects are hands-on and leverage leading-edge
technologies such as 3D printers, architecture kits, drones, and robotics. Taryn and the SHINE leadership plan to use the stipend from this project to directly invest in high-tech tools. This equipment is especially important to keep students engaged as they graduate into the upper grades. Taryn explains that many students come to SHINE because it is "really well known in the community" and receives positive media attention. However, the Career Academy does compete with other activities like afterschool sports, so it’s important to keep students engaged.

In her role as coordinator for The Career Academy, Taryn works on many aspects of the program. She is responsible for curriculum, student transportation and meals, recruitment and maintaining of student data. Additionally Taryn serves as lead teacher and, perhaps most importantly, is the center of communications between families, SHINE and school administrations.

Taryn explains that many of the Career Academy lessons contain a service learning component. Each of the four rotations includes an element of community involvement and the program tries to work with at least 3 different organizations each year. These service-focused projects have included making blankets for a local children’s hospital and creating and donating a park bench to a local nursing home. The service learning aspect of the rotations is key because it demonstrates to students how their school projects can take on a life of their own in the “real world.”

For example, Taryn described a recent rotation that had students building cat houses for a local animal shelter (see also SHINE, 2022):

We’re doing a community service project for the cat shelter because a few months ago they had a major flood down there, and they lost all their toys, all of their cat houses, cat scratch posts, food, everything. So the students are using lessons in carpentry, math, engineering and architecture to build the houses. Then we add a little bit of art by having them paint the different cat scratch posts. Some of the students made cat toys and now we’re also doing cat blankets. Then the next rotation we’re going to be doing 3D printing up in CCTI’s drafting room where students are using the Tinkercad or MakerBot directly to make cookie cutters out of plastic, printed on a 3D printer. Then the students will come down into the culinary classroom and we’re going to make homemade dog treats with their cookie cutters and then we’re going to take them to the animal shelter and donate them.

In this way, students can directly apply academic lessons to projects that not only interest them but engage them in the broader community around them. SHINE builds its programming model around making connections to civic opportunities that are locally relevant and connected to students’ interests. The meticulous design and planning that Taryn described for the cat shelter project above also requires coordination work and an understanding of local needs that make projects meaningful and community connected.

**How SHINE Prepared for Giving Back to One's Community Through STEM/STEAM Related Activities**

- Find service learning opportunities that fill a need in the local community and coordinate with leaders at those organizations to figure out how to best fill that need
- Build service learning projects around issues and communities about which young people care and are invested
- Bring STEAM to the projects in ways that connect to real-life skills
About the Making Connections Project:
Fostering Connections and Pathways for Youth across STEM Learning Ecosystems

STEM Next and the Connected Learning Lab at UCI have partnered to support state and regional out of school networks as they develop and strengthen an ecological and connected approach to STEM learning. The case studies series represent real world examples that are part of a larger effort to develop and improve connection strategies that strengthen STEM learning ecosystems, centering the experiences, mobility, and futures of individual learners and their families across state and regional networks.

Each case study in this series takes a close look at a partner organization’s approach to one of the eight strategies for connecting: 1) A wraparound approach; 2) Coordinating between in school and out of school; 3) Giving back to one’s community; 4) Near peer or industry mentorship; 5) Translating youth interests in to STEM career opportunities; 6) Building relationships with families; 7) Curating online tools; or 8) Creating open portfolios. These case studies are not exhaustive; they are examples of coordinating and brokering that can be used to spark ideas and inspire growth.

For more information on the project and the strategies, visit https://stemnext.org/stem-pathways and connectedlearning.uci.edu/projects/making-connections/

References


