

Teaching Young Learners Computational Thinking

In order to achieve *broadening participation* in computer science and other careers related to computing, we should provide students opportunities (tasks) to *think computationally*. For the purposes of this project, we developed tasks that aim to elicit students' computational thinking (CT) competency. We delivered instructional sessions for young learners using a *hands-on minds-on* approach with different forms of scaffolding. In addition, we provided information related to innovations (e.g., Boeing's autonomous flight). The hope is that young learners may become more engaged in computing and technology if they see connections to the real world. The team reached out to a group of diverse young learners by contacting a youth pastor in Lafayette area. Moreover, we also partnered with Lafayette Tecumseh Junior High School where 75% of students are eligible for free or reduced-price lunch (i.e., a high poverty school, according to the definition provided by US Department of Education).

At the end of the project, we provided the following research product to our community partners, so they will be able to re-use them in future:

- 1) a set of tasks for students to solve in a pencil-paper mode;
 - 2) we translated the tasks into Spanish and Chinese, in order to help English language learners engage with the tasks. Our community partners possess the translated versions as well.
- Finally, with the support from Office of Engagement at Purdue University, we were able to purchase multiple Cozmo robots for the community partners and they will be re-used by the community partners in future.