Alice in Roboland: Inclusive K 12 Outreach Programs for Typical and Special Needs Children

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Students with disabilities are often overlooked when it comes to having a career in STEM disciplines. It is well known that innovative hands-on computing activities increase the content knowledge and confidence of students with disabilities thereby increasing their likelihood of majoring in STEM discipline. Two inclusive K12 outreach programs, Comp Camp and Robo Camp, designed to enhance computer knowledge for typical and special needs children, were developed at Auburn University. On the first day of each camp, children are introduced to Alice, using a dynamic and creative Alice program and Lego Minstorm Robots. Children are captivated by the Alice demonstration and instantly become interested in learning more about Alice. The main categories of Alice assignments that are completed included Alice Basics, Control Structures, Key Object Oriented Programming Terms and Advanced topics like Inheritance. Children complete pre computer background surveys indicating their academic grade, interest and knowledge in computers, previous usage of computers and goals they wanted to achieve. Children’s progress is evaluated after each class allowing instructors to adjust the lesson and teaching methods to enhance learning. Instructors use this evaluation period to identify children that were having difficulty following directions and attending to tasks, to evaluate children’s strengths and weaknesses and determine how children’s individual interest could be used to encourage an aptitude for computer literacy. A post program survey is administered to measure the effectiveness of the program. Feedback obtained from various participants and the results of the post program evaluations clearly indicate these camps as a success.