

SPiRiT: Silicon Prairie Initiative for Robotics in IT

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Website: <http://www.ceen.unomaha.edu/TekBots/SPiRiT2>



The "Silicon Prairie Initiative for Robotics in IT" (SPiRiT), a collaboration between the University of Nebraska and area schools, was a three-year Comprehensive NSF ITEST Project for Students and Teachers, that has expanded into a NSF Discovery K12 Learning Project. SPiRiT targets science and mathematics teachers in grades 7-8, each of whom receives extended professional development and follow-up support in developing in-school curricular activities related to educational robotics. More than 10,000 students have participated through in-school and summer

programs. The centerpiece of the project is a university level CEENBoT (TM) learning platform that has been adapted to the middle school level. This platform can be used to demonstrate basic applications in wireless, video and signal processing, sensors, video displays, electronics, control systems, embedded systems, digital logic and introductory programming. The curriculum being developed in the project employs CEENBoTs as a fundamental strategy for problem-based instructional activities. It is adaptable, expandable and cost-effective, providing learning experiences that can extend into high school and college. Results are being disseminated through publications and presentations, teacher workshops, displays prepared for school districts and collaborations with other universities using robotics platforms. An interactive, dynamic website has been created with modules and tutorials, uploadable programs, videoclips and links to research. As of Fall 2010, more than 200 teachers have been trained in extended workshops and graduate courses and more than 150 Internet-based lessons have been created. Teacher surveys and assessments have documented significant teacher growth in problem-based learning, robotics, electronics, and engineering design.

