The Robot League: Lego Mindstorms RIS in Schools

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The Robot League is a bootstrap initiative of Kansas State University. The concept is to encourage interscholastic and intramural competition using Lego® Mindstorms™ Robotic Invention Systems™, RIS, kits. Participants, in classes, clubs, other school groups or homeschool groups, build autonomous robots that compete in pre-defined events. While all students are invited to participate, special emphasis is given to members of groups traditionally underrepresented in engineering, including females, minorities and low SES students.

Membership in the league is self-selecting. An open invitation was sent to area schools and those who asked to join were admitted. Teachers signing up were provided with one or more RIS kits. The two main requirements for accepting the kits were participating in one or more interscholastic competitions hosted by Kansas State and a 1-2 page written evaluation at the end of the year.

Participation ranges from 5th grade to high school. Some teacher initiatives pair high school students as leaders with middle and elementary school groups. Some participants are identified as gifted while most are not. At least one participant has been identified as marginally learning disabled.

The fundamental purpose of the league is to change attitudes among students. Many of the participants do not view school as particularly relevant or engaging nor do they view fields requiring higher education as viable options. By providing manipulables that require higher order thinking to accomplish well defined goals in a competitive environment, the league hopes to encourage students to take more math and science classes in high school and be better prepared for college. In addition, the league hopes to foster better feelings towards the school and encourage school spirit by having both intensely competitive but also light-hearted competitions.

This presentation will focus on how to set up a robot league and what were the short-term effects on the students participating. Other issues include multi-age classrooms and the relevance of technology in schools. The hands-on workshop includes building and programming a robot and participating in one of the league tests.