WPI

Robotics: Motivating Students in STEM

Kim Hollan, Worcester Polytechnic Institute

Creating Interest

- STEM education is often perceived as:
  - Tedious
  - Difficult
  - Boring
  - Only for the highly intelligent

- Robotic Clubs can help
  - Team work – Project Based Learning and communication skills
  - Problem solving
  - Creative thinking

FIRST Robotics

1989 Dean Kamen developed the FIRST Foundation

For

Inspiration and

Recognition of

Science and

Technology

1992 held the inaugural FIRST Competition: 26 teams

2017 FIRST Competition: 3400 teams!

FIRST Robotics

- FIRST appeals to students:
  - Compelling student involvement
  - Emphasizing the thrill and commitment of team sports while using real STEM skills
  - Team activities culminate in high energy, exciting tournament play that balances athletic-type strategy/effort with unprecedented teamwork

- Does it work?
  - Reports say that FIRST alums are twice as likely to enter into Science and Engineering in higher education
  - 89% of alums end up in STEM careers

Vex Robotics

MS4SSA
Math and Science for Sub-Saharan Africa

- Vex Robotics clubs have been around since 2007
- Now 16,000+ teams in 40+ countries

The world faces an **unprecedented need** for new innovators, thinkers, and problem solving leaders.

Robotics can create engaging and powerful solutions that **immerse students in STEM** through the excitement of building and programming robots

Vex Robotics

Vex Robotics:

Vision:

"We envision a world where every student has the opportunity to be inspired by the excitement of hands-on STEM learning and knows the feeling of creating something with technology. We want people of all ages and backgrounds to recognize that creative problem solving is fun and see its importance in shaping a better future."

Robots/STEM

- Robots are a fun way to help get and keep our students interested in STEM
- They can help us inspire students to come up with creative solutions for competitive competitions
- From design to programming, there are many challenges to fuel the students' curiosity and build their confidence and team work skills

Thank You!