Barker College
An Anglican School

Participating in a Robotics Competition to Build Perseverance in Boys

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TEAM 4613
BARKER COLLEGE ROBOTICS

For Inspiration and Recognition of Science and Technology

The *FIRST® Robotics Competition (FRC®)* combines the excitement of sport with science and technology to create a unique varsity Sport for the Mind™.

FRC helps high school students to discover the rewarding and engaging world of innovation and engineering

http://www.usfirst.org/roboticsprograms/frc/2015-game


Our Maker Space
The Robotics Centre

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Team 4613 Results

- ## Australian Regional

Innovation in Control Award sponsored by Rockwell Automation:

Team 4613 – Barker College

Regional Finalists:

Alliance Captain, Team 4613 – Barker College, and their partners: Team 3132 Thunder Down Under, and Team 5333 Can't C#

- ## FRC World Championships, St Louis (600 Teams)

- Curie Division (76 Teams)
- Semi-finalist
- Ranked in the top 20 robotics teams in the world

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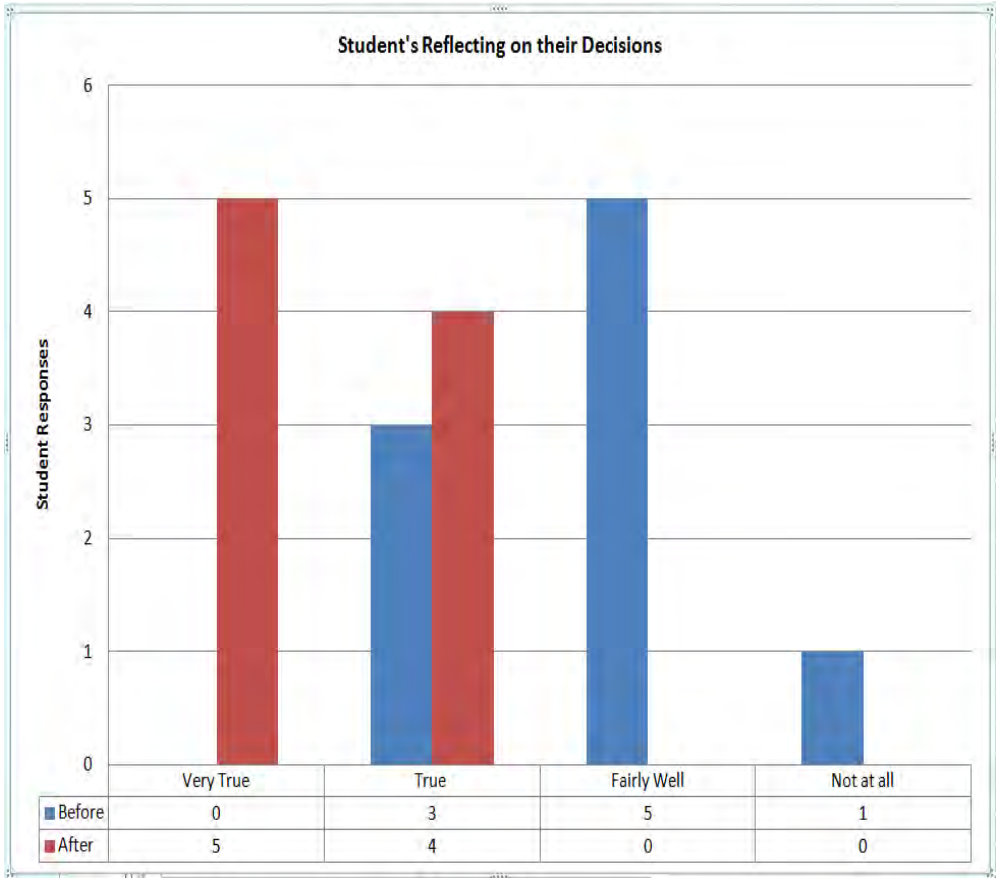
Meta-cognition Increased

- Significant development of student's meta-cognition.
- Students openly reflected on their own thinking practises and the processes they used to develop products



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Trial and Error

- The constructive environment of trial and error created a learning domain that encouraged creativity, with students viewing mistakes as a valuable pathway to the ideal solution.

- Inhibitions related to fear of failure were overcome by students self-efficacy.

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Perseverance= Ownership + Usefulness

- High expectation of themselves and the team for their goals despite failure and setbacks.
- Sense of gratification and pride in the product
- Actions demonstrate mindset

International Communication between teams asking for help and giving suggestions.

Hi Team 4613!!

We (team 971) just had an great time watching your robot throughout playoffs. We were all sitting around the projector checking out the webcast! We were rooting for you!

You guys have a super creative solution to the game, that is clearly incredibly powerful. I'm pretty sure you are one of a single digit number of teams to complete 3 stacks of 5+ totes with containers in a match!

You are a world class team, and I'm sure will have lots of great years to come.

We would love to see you at championship, and hope to get the chance to compete with you guys!

Hope to see you there, (and see you get that auto mode figured out)
Edward, Team 971

P.S. Feel free to share this with the rest of your team.

P.S.S. I'm sure you figured this out, but it looks like one of the few weaknesses in your game is turning. I think omni-wheels in the back would be huge, both lining up the hp station and the scoring platform.

Hi Sean and Sarah,

OK, so my team and I have agreed this is pure and utter genious!!!

Thank you for sharing such a thorough description of your tote-coralling system. Based on this descrption and the attached video we think we have an undertsanding of the magic you are doing.

For several weeks MakeShift has been trying various arrangements of ropes wrapped around the base of the yellow totes for autonomous tote retrieval (while our main robot remains stationary). We were so fixated on looping around the tote base that we never even considered attaching to the hole in the upper part of the tote. You have us all excited and inspired! We will be heading to our workshop this evening with renewed energy to see if the Red Crusader's method could be adapted to our winch. This may prove difficult as we must pull downwards on the R-clip (rather than upward) due to our geometry/sequence but we will give it a try.

You mention this system was "fiddly". Do you recall how many times you ran this in a match and how many times it was successful? Did you receive a Creativity Award for this (or at least honourable mention)?

It is great to make contact with you. Thanks again for sharing - we really appreciate it. We'll keep you informed if we can incorporate some of these design elements prior to our competition. If it works out, you can stay up late watch the IRI live webcast to see your Crusader magic in action!

Good luck at your competition next weekend. Please let us know if there is ever anything we can help you with from Canada.

Matt at MakeShift

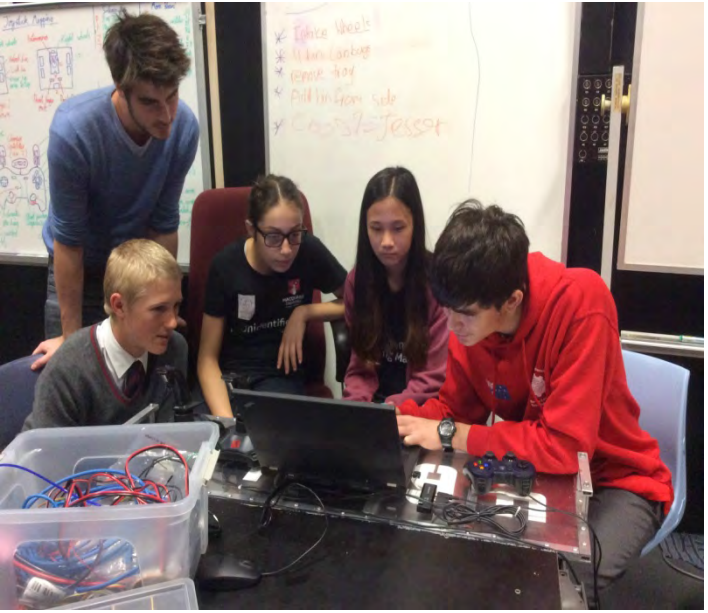
Just wanted to drop you a note and say 'Thank You' for coming to the Championships and showing us an different way to do the 3-tote Auto!!!

Wish we could have competed with you on Curie, but we only had the chance to compete on the other side of the field....

My daughter, driver for NRG 948, and I came over to your pit and spoke with one of your team members. He was very polite and told us about your robot. I wish I would have asked his name. If any of your team remembers talking with a father and daughter from Seattle, WA, tell him 'Thank You' for taking the time to talk to us.

Also wanted to 'Thank You' for introducing me to the Cosby Sweater song, has been stuck in my head since your upgrade video.

Good luck with next years robot. If we both play our cards right, and have some luck, maybe we can both make it back to the Championships next year!!!



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Outreach

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Whole School
Robotics Program

- The team's outreach program extended beyond Australia to provide international support.
- The usage of these global forums for communication and collaboration provide students the opportunity to transition from the classroom to the global stage.
- Team 4613 Invited to China in August to promote STEM

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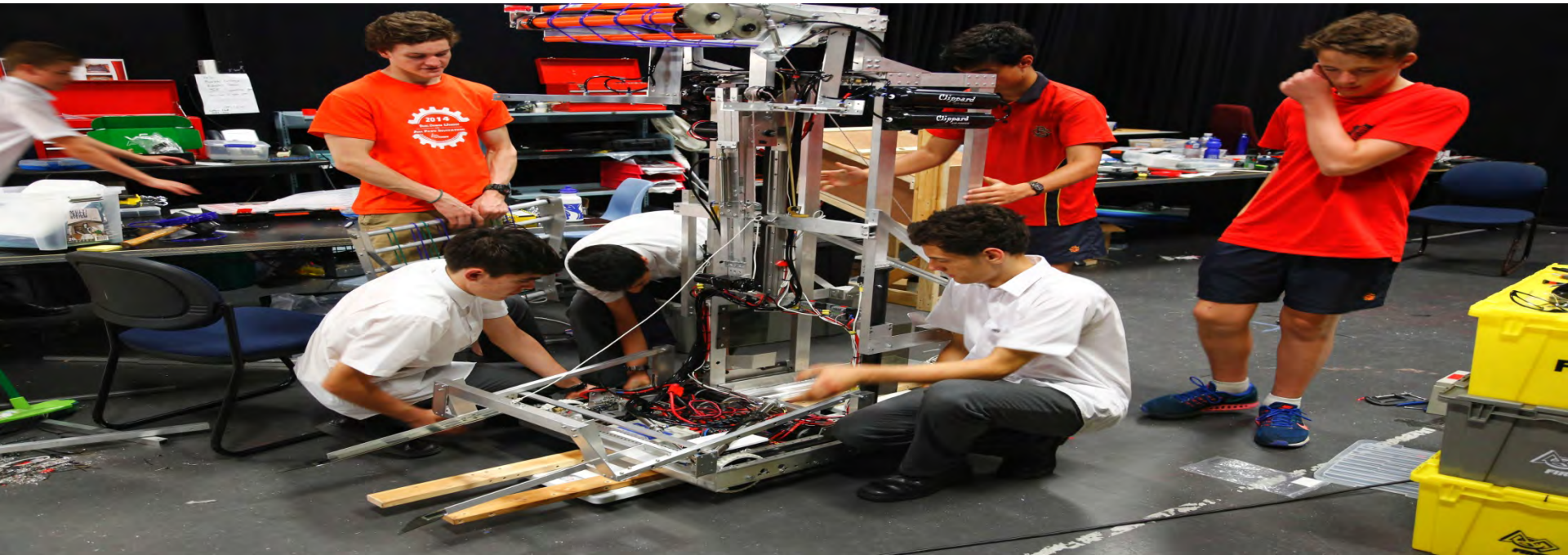
21st Century Learner

- The process of construction was able to accommodated a unique, personalised and meaningful experience for each learner.

- Learning by doing in utilising robotic technology, provided a framework for creative innovation.

- Inquiry based learning does enhance student's perseverance as the learning environment that is created is agile and student directed, with a focus on technology, collaboration and open ended challenges.



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Action Research

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