Project Summary

- Lego robotics is now taught in grade 7 and 8 with a view to including robotics and coding in grade 9 media next year. This will involve the use of raspberry pi and arduino.

- We maintained the inquiry based learning approach at both grades with increasingly complex challenges given demanding greater skills from the students

- Teachers have become mentors for the FLL team and have used the Carnegie-Mellon university mindstorms program to develop a wide range of skills in both building, programming and testing.

- We have reached out and made informal links with a large number of schools within our Board, and have presented our progress to the wider community at Laval Junior last October

Project Goals

- Introductory Video Tutorials - these are a work in progress. Students have made good use of existing tutorials on Youtube and are currently making their own video as an evaluation of their latest challenge. The aim has morphed into making videos for our specific challenges as there are already a lot of very good basic videos available. Student videos are not yet ready to publish but should be available by September.

- Teacher training - we now have 3 staff trained to the point where all are comfortable teaching the class. This has been achieved through meetings, carrying out the challenges we give the students and using the Carnegie Mellon training software. All teachers have also got involved with the FLL team and the 2 senior teachers are also involved with the FRC team.

- Training tools for other schools - this has been the most problematic area of progress. The school we had planned to collaborate with most heavily to develop this has had a large staff turnover so we no longer have an established link. Despite this we have made some progress by holding a workshop for schools in the Board that are interested in lego at which we offered to host web chats with students and staff of other schools, but as yet no group has taken us up on this. The potential remains for this, but requires a stable staff in at least 2 schools to get it going

- Hosting a Robotics Event - on top of hosting the training day for interested staff we are also holding an FLL style tournament on Friday April 13th. The event will follow an FLL type format but without the pressure of competing against other schools for qualification places to other events. The purpose is simply to give a taster to the participating schools about what the FLL is really like and gain some experience and confidence.

Project Outcomes

- We have moved from one member of staff teaching a single class to three teachers teaching across two grades. Staff are much more confident with the content and method of delivery, the flipped classroom approach lends itself well to this style.

- There is a lot of interest in the potential of the program and we are looking at hosting a dozen schools at our competition

- Our students often say that it is one of their favourite classes and that being able to work in groups in a very hands on fashion appeals to them.

Reinvestment

- It is clear that STEM is playing a larger and larger role in the education system

- Our course provides a flipped classroom model that any school with willing staff and sufficient kits could incorporate into their program.

- The fact that we have deliberately stuck to challenges which can be achieved using the basic Lego Mindstorm education kits and the widely available FLL framework mean that our experience is applicable to all

- The students themselves have progressed a lot over the year. The course is challenge based and extremely hands on, which allows some students who have good skills but not necessarily great literacy to excel. Also the team work element has quickly brought students into the need for communication skills and reliability. Shortcomings quickly become apparent, and how students deal with these is an important part of the program

- There is no reason why other centres should not develop their own challenges to suit themselves, but the principle is certainly proven

We hope that by continuing to spread the word, by hosting competitions and training events and by having the team present their achievements in a variety of ways that the model will spread further.

Thank you for your support in this, our progress would not have been possible without it.