by Jinwook Kim Jinux@robotis.com

HACKERS GETTING READY TO SUPPORT STEM EDUCATION

Makers at hacklabs key to our future

WHO ARE THE HACKERS?

Every Tuesday evening, people who have finished the turmoil of daily work sneak into an old building in Brooklyn, New York, or an art studio in the heart of Manhattan, and they are doing the same in a small garage on Staten Island. After arriving at the hackerspace, they just sit down at the couch and start talking about projects they're up to (not TV shows or baseball stats). People buy a breadboard (not bread) at the vending machine and discuss ideas. They dive into how they can make new things, have fun together and, sometimes, how they may grow their projects into a business. This is the typical atmosphere of NYCregister, HackManhattan and MAKE.SI in New York and maybe all the hackerspaces around the world. Hackerspaces are non-profit organizations whose "hacklab" facilities are used by makers, learners, hackers, tinkerers, and artists.

SCHOOLS LOOKING FOR SOLUTIONS

Mike Bloomberg, the mayor of New York City, and also a childhood hacker, earlier this year designated September 24-30 as Maker Week. He did this owing to his firm belief that the new economy can be built on innovative minds.

Despite the rain during the weekends, the 2012 Maker Faire held on September 29 - 30, the 5th held in New York, was a huge success with 650 makers and 55,000 visitors over just two days (though the San Francisco Bay Area Faire is still the biggest). This means parents are eager to have their children learn something by making!

Teachers got together right after the event at the hall of science in Queens to discuss the Maker movement and the Maker Education Initiative (MEI), http://makered.org/about. The Maker Corps program, launched by the MEI, seeks to forge collaborations to promote economic recovery and job creation, as well as hands-on experience for our youth (as in making things) with encouragement from peers. As noted at the Maker Corps web page, http://makered.org/news/maker-corps-empowers-the-next-generation-of-innovators, making things with the encouragement of peers are "key drivers for students who choose to pursue careers in STEM (Science, Technology, Engineering, Math) fields. Making—tinkering, designing, building, playing in a social context—can provide those things."

And the plenary speech by Prof. Louis Gomez (UCLA) began with a very candid confession, "It's already awesome and we've just gotten here." Our public education system and its evolving standards are important to keep up with, but today's teachers want to find something new to motivate their students, who all too often find it easy to get bored when reading the same old textbook stuff.

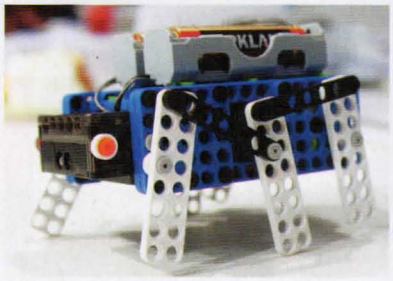
ROBOTIS KIDSLAB WORKSHOP AT HACKERSPACES

On 2 October 2012 at HackManhattan, 23 teachers and hackers got together to find the solution. From their experience with the ROBOTIS KidsLab program, using the OLLO Explorer Kit, it was found that even people without any experience making robots had fun while learning about robot power systems, use of sensors, as well as speed and power and how that translates to robotic walking and running.

Hackers also found out that they can do something for schools and what they need to prepare for when presenting to multiple students in a class (as compared to focusing simply on their own interests).

PHOTOS COURTESY OF HACKMANHATTAN, MAKE.SI

HACKERS, ENGAGE YOURSELF TO STEM



ROBOTIS KidsLab has been actively supporting hackers and makers to start STEM education, mainly by developing an affordable robot kit and curriculum, but also by giving free training at Maker events and similar programs. There is a strong belief in the community that robotics enthusiasts and hackers, especially retired teachers and engineers, can enhance the education of our students beyond that provided by our school systems by facilitating hacker spaces and contributing to events where makers get together. Hackerspaces have paved the way very well.

Now, it's time to share your talent and experience with those around you, especially with students who will make the future a better one, and who will do it with their own hands. ◎

Links

HackerSpaces www.hackerspaces.org

Maker Education Initiative (MEI), http://makered.org/news/maker-corps-empowers-the-next-generation-of-innovators

ROBOTIS www.robotis.com, (949) 333-3635

For more information, please see our source guide on page 80.

HACKER INTERVIEW

NAME: Sarah Benalene Kittinger McArthur (27), Make.SI hackerspace. Organizer

CURRENT JOB: Self Employed Artist and Designer

TEACHING EXPERIENCE: None

Q. What kind of projects do you typically work on?

General building and tinkering with Arduino-controlled projects

Q. If schools want your community to help support STEM education, are you willing to join in?

Absolutely, yes, and I'd give my motivation level a 5-star rating!

Q. What kind of activities could your community do to help schools?

A teacher's workshop, and I'd be interested in teaching an after-school class as a weekday day job. I would also enjoy exhibiting projects at an annual fair or contest (e.g., Maker Faire). I'd like to facilitate creating maker spaces and getting tools together for young makers.

Q. Would ROBOTIS KidsLab class help students engage in STEM?

Absolutely, the classes are well designed and fun for the kids.