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## Science, Technology, Research and Innovation for Development (STRIDE)



### Low Cost Intelligent Steam Education Robot (LISER)

**GRANTEE:** University of Science and Technology of Southern Philippines (USTP) - formerly MUST

**PRINCIPAL INVESTIGATOR:** Engr. Diogenes Armando Pascua

**INDUSTRY PARTNER:** Abba's Orchard Maria Montessori School

**GRANT PERIOD:** September 1, 2016 to August 31, 2017

**CONTRACT AMOUNT:** Php 1,021,800 (approximately USD21,750)

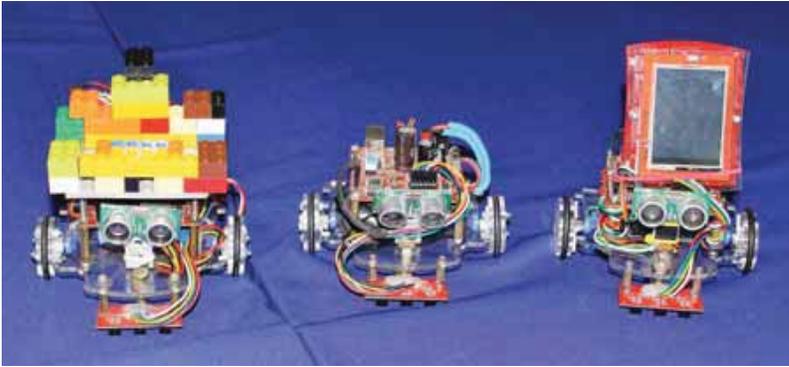
#### Teaching with robots

Local schools in the Philippines usually lack determination and means to implement STEAM (science, technology, engineering, arts and math) education. Typically, math, science, and arts are taught as separate subjects, with little emphasis on their applications. This prevailing educational system has to be changed to produce critical thinkers who can help create and drive a technology-based economy.



*A student creates his own LISER robot accessory after the workshop conducted by the LISER Robotics team*

In response, a research team from USTP, in collaboration with Abba's Orchard Montessori School and with assistance from USAID STRIDE, will create a prototype of LISER STEAM-based educational robot kits for secondary schools. The programmable robot kits will serve as novel teaching tools to strengthen STEAM disciplines and computer coding at an early age. Coding is an essential skill that must be developed for modern digital professionals due to enormous demand where current information and communications technology supply is meager. The LISER STEAM programmable robots will bridge the gaps among the core subjects of math, science, and arts for application in the real world and inculcate experiential learning through tangible means, not just plain theory. Teaching with



*LISER Prototypes for testing*

robots mainstreams effective and inexpensive education. Faculty members of partner institutions will be trained to integrate the robot kits in their classes with and provide immediate feedback to further refine and enhance the robots.

According to plans for commercialization, the production facility will be housed at the USTP in Cagayan de Oro City. Training in using of the robot kits will be conducted in various schools that are using LISER as a platform to expand the reach of the project. The successful implementation of the project is expected to demonstrate the capability of Philippine engineers to design and produce commercially relevant robotic products.