

SUCCESS STORY

Prototype Device Faculty Training to Spur Moroccan Business Productivity Students Gain Employable Skills in Manufacturing Process Rapid Prototyping *Gateway Technical College / Ecole Supérieure de Technologie d'Oujda*



Photo courtesy of ESTO, mechatronics class 2014

Faculty and students learned to use rapid prototyping and created plastic models of products using a 3-D printer.

“There is a need for some tools used in surgical operations and they are very expensive. We can achieve them for a low cost using our 3-D printer.”

*— Jamal Yousfi,
Mechanics teacher at Ecole Supérieure
de Technologie d'Oujda, Morocco*

Getting a new product idea from the conceptualization phase to a physical model can be a slow and expensive process for entrepreneurs leading start-up companies as well as established businesses. This process can stall business growth but 3-D printing offers a fast-track method to a tangible product. The higher education collaboration project funded by the U.S. Agency for International Development between Gateway Technical College (GTC) and Ecole Supérieure de Technologie d'Oujda (ESTO) in Morocco calls this process rapid prototyping. The project has been training ESTO faculty to use the special printer to support entrepreneurship and business development.

Through a 3-D printing training, more than 30 students and teachers involved in the Higher Education for Development partnership are able to produce their designs or industrial models, initially developed on their computers in design software. They become very motivated to invent and dream of new 3-D models. “The whole team is excited to use the 3-D printer for teaching and student projects,” said M. Smail Zouggar, head of the Applied Engineering department at ESTO.

Furthermore, because the plastic-like material that the partners are using is of medical grade, ESTO is beginning to receive proposals to manufacture medical components used directly in human bodies. “By talking to specialists, there is a need for some tools used in surgical operations and they are very expensive, we can achieve them for low cost using our 3-D Printer,” said Jamal Yousfi, a teacher of mechanics at ESTO. Other professionals in Oujda, Morocco also expressed interest in rapid prototyping, particularly for complicated prototypes such as pumps or bottles that are locally difficult to make using the conventional prototyping and require more expensive molds.

“In some student projects, some parts are so hard to obtain by [the] manufacturing process; but we can design them easily using 3D CAD software, and then produce them on our 3-D printer,” adds M. Mohammed Boughaleb, teacher of rapid prototyping at ESTO.

The next step will be to introduce companies in the region to the technology with the hope of having the students working with the companies on real-world projects. The partners are eager to train new students in these desirable and employable prototyping skills. With a newly skilled workforce and modern equipment, businesses will be able to introduce products to the market faster, allowing them to gain market share thus bringing more business to the area.