

Govt starts a new mechatronics course

By Umar Nsubuga

Michael Mulindwa trained as a mechanical engineer, but always struggled to fit into his job at his father's motor vehicle workshop.

He was not well-grounded in handling some cars, especially those with the latest technology. They are more computerised, than the old models of some vehicles.

However, Mulindwa has less to worry about. He has now infused electronic engineering with his mechanical engineering; call it mechatronics. This is the first of its kind in the country, thanks to Nakawa Vocational Training Institute and the Japanese government.

Shaban Abdullah, who works at Uganda Clays, Kajjansi and studied mechatronics, says the course is aimed at nurturing work-ready people and exposes them to the actual working environment in the field.

According to Wilson Kajjuka, an instructor at the institute, developing mechatronics projects in the technology will expose students to the basic concepts to equip them with practical skills that are much needed to develop industrial projects.

"Some of the engineering projects that one can develop in mechatronics are vehicles and all the students who attend can handle any car that is computerised," he says.

"Mechatronics is an upcoming technology, which uses interdisciplinary concepts between mechanical and electronics engineering. The technology is being widely used for efficient and reliable solutions, where mechanical work is to be done repeatedly and with great accuracy. We decided to start the training, with people who are already working," he explains.

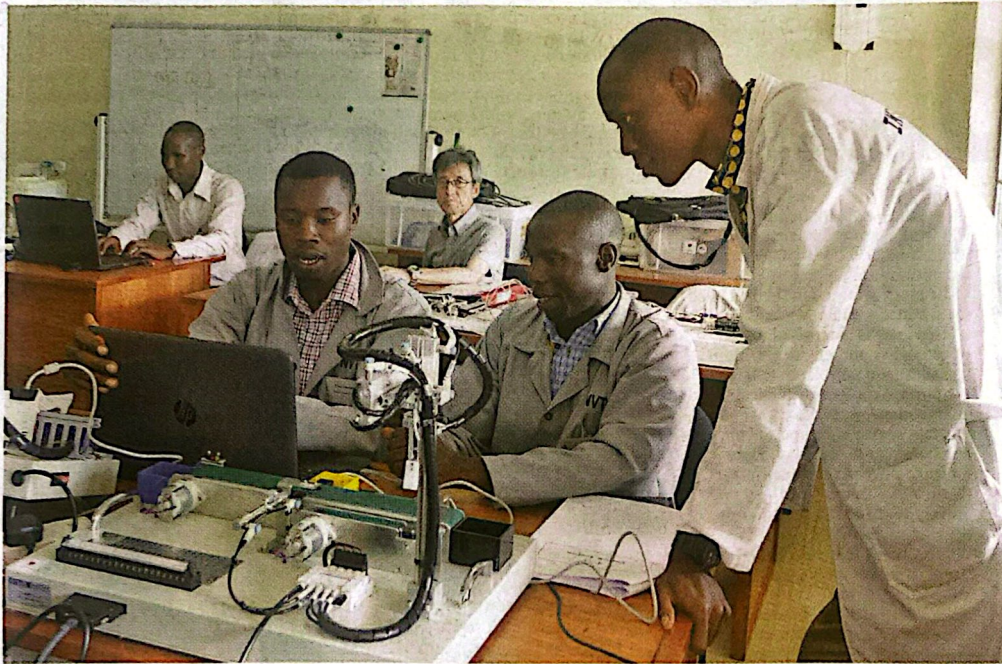
Abdullah notes that, as a mechatronics student, one should do mini projects that are constantly evolving. One should use such projects as a platform to learn and understand new technologies and their implementation.

Where to find it

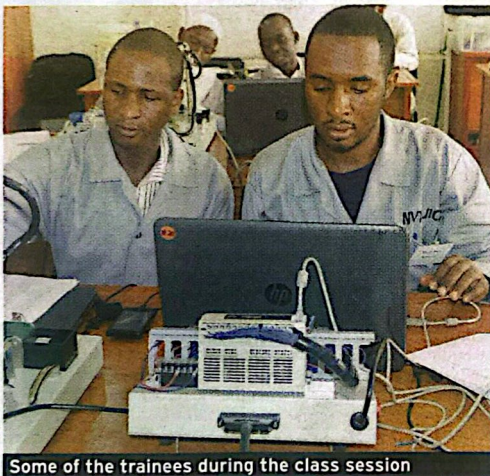
Nakawa Vocational Training Institute is now set to train more industry workers in the new course of mechatronics, following the successful training of the first batch of 60 students, over the last three weeks.

This is one of the four public vocational training institutes directly operated and administered by the Ministry of Education, through the Business, Technical and Vocational Education and Training Directorate.

The 46-year-old institute is responding to the growing need for more skilled engineers in Uganda's



Instructor Wilson Kajjuka (extreme right) explaining to trainees at the institute



Some of the trainees during the class session

private sector. To implement the special course, Nakawa Vocational Training Institute, through the support of the Japan International Co-operation Agency (JICA), acquired a modern laboratory valued at \$385,000 (about sh1.3b).

"The new training is meant to expand the scope to engineers," said principal Fred Muwanga at the closure of the first training at the institute on Friday.

At the fifth Tokyo international conference on African Development (TICAD5) held in Tokyo, Japan in 2013, Nakawa Vocational Training Institute was chosen as one of the industrial human resource development centres in Africa. To develop and consolidate Nakawa Vocational Training Institute's capacity in responding to the needs of the private sector,

Part of the five-year project was establishing the mechatronics programme as well as upgrading to the automobile and electrical engineering programmes to diploma level.

Why care?

Kazuaki Sugawara, an officer from JICA, says engineering is about design, making things happen and solving problems, adding that the field calls for creativity, management and communication skills, as well as technical expertise and knowledge.

"The field of engineering is vital to a country's development. That is why we are working with Nakawa Vocational Training Institute," he explains.

Abdullah was part of the first group to be trained in mechatronics at this institute. Through supporting our industries with the new

technology, we know we are training the labour force that can be helpful in running our industries," he says.

Wilson Kajjuka, an instructor at the institute, who trained in Japan, says the new programme offers practical, rather than theoretical lessons, which has enhanced trainees' understanding of the new technologies.

Through the Technical Vocational Education and Training (TVET-LEAD) project, at the institute looks to improve its employment-oriented vocational training management, as well as to disseminate its experience to other BTVET institutes.

Alex Nkayivu, a retired university lecturer, says many industries had acquired new technologies, especially in electro-mechanical systems and in some cases, were employing experts from other countries to operate, maintain and repair the machinery and equipment. Most job surveys show companies are sponsoring workers for training outside the country, where such technologies exist. However, Fred Muwanga, the institute's principal, says, if Nakawa Vocational Training Institute has established a public-private partnership working group, where its instructors and staff work together with members from the private sector to identify training needs and developing programmes to address such needs, then the country will develop fast.

According to Nkayivu, it is through this partnership that Nakawa Vocational Training Institute developed curricula for vocational diploma programmes in automobile and electrical engineering and

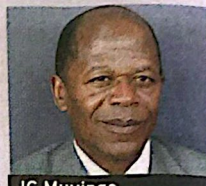
upgrading training modules for mechatronics.

The programmes are developed at level four, in line with Uganda Vocational Qualification Framework, the standard set by the Directorate of Industrial Training. In addition, the two diploma curricula were approved by National Curriculum Development Centre and forwarded to National Council for Higher Education for accreditation. The accreditation was done for the two courses last year. A modular curriculum was developed together with the private sector and industries agreed to conduct training in Programmable Logic Controller and pneumatic systems; sensor design technology, inverters, motors and servos and micro-controllers.

"When I complete the course, I will start from my work place. I am going to take the knowledge to our company and I am ready to share it with colleagues," Charles Kato, one of the trainees who works with Crown Beverages Limited, in Nakawa, Kampala said.

On some occasions, business and technical schools have been accused of churning out half-baked students with limited skills.

The Business, Technical and Vocational Education and Training (BTVET) Act of 2008 saw Uganda National Examinations Board (UNEBC) hand over its mandate in vocational and technical school education to Uganda Business and Technical Examinations Board. With this move, the new examination board was then tasked with streamlining, regulating and co-ordinating examinations,



JC Muyingo

OFFICIALS SAY

The State Minister for higher education, Dr John Chrysostom Muyingo, says the funding of technical institutions needs to be increased.

"We have constructed more technical schools and we will soon provide additional funding," he said. Most educationists agree that business, technical and vocational schools should be the rod that strikes a path through the country's sea of unemployment, but it definitely needs more support.

Muyingo notes that the Government intends to increase funding to the new Uganda Business and Technical Examinations Board, increase unit costs for capitation grants, scale up the non-formal training programmes and provide instructor materials to Uganda technical colleges for students to do real-life projects as part of their exam requirements.

James Mugerwa, the assistant commissioner in charge of vocational education, says Uganda can now address the critical issues to firm cement our efforts to transform Uganda into a country with a critical mass of skilled people.

Mugerwa says vocational education the potential to curb high unemployment since many people have the skills to start their own jobs and employ others, a move towards job creation than seeking.

The education ministry is already on a nationwide campaign to sensitise Ugandans about the advantage of vocational training programmes.

The Government wants to change the attitude of parents and children towards skills training. It also wants Ugandans to know the value of technical and vocational training. The Government is already implementing the 1 year programme.