

INNOVATION Get in touch STUDENTS DEVELOP DEVICE

By Jeff Andrew Lule

One of the great challenges for the visually impaired not only in Uganda, but globally, is moving from one place to another. Technology largely remains inadequate to overcome the obstacles before them. This at times leads to accidents, which result in bodily injuries. Although there are several technologies such as the commonly used 'white cane', which enables other people to recognise that someone is visually impaired, and 'seeing dogs' in international settings, visually impaired people still grapple with the challenge of sensing obstacles ahead.

However, a new technology has been demonstrated by three high school students to aid a visually impaired person in detecting obstacles ahead of them at a reasonable distance in any environment. The students joined forces after a two-week technology training camp for high school students in northern Uganda.

The students; Ronald Akena, 21, an S6 leaver from Awele in Omoro district, Daniel Oceng, 18, a S4 student from Otinowao Comprehensive Secondary School in Kole and Jennifer Malia, 18, an S6 leaver from Sacred Heart Senior Secondary School in Gulu, resolved to come up with a solution to aid the movement of the visually impaired.

The device, code-named 'Blind Aid Device' was



PHOTO BY HAJARA NALWADA

One of the students demonstrating how the blind aid device works

showcased and tested during the technology exhibition, which marked the end of their technology camp at Gulu High School in February.

The event was organised by Oyster Pearls Uganda. Akena, the team leader of the group,

says: "They taught us how to come up with the software using the PC Arduino and Duino computers.

These are open-source electronics prototyping platforms. After two weeks of training, we were put in

different groups and asked to come up with something that could impact on the community and environment. That is how we came up with this idea."

The students believe that if this technology is transformed from the prototype form, it can

with us on Facebook/The Sunday Vision TO GUIDE THE BLIND

HOW THE DEVICE WORKS

The blind aid device incorporates an infrared sensor, a motor and two light dialers (blue and red). Akena says the infrared sensor helps to detect any object within a certain distance.

"When it detects anything within the defined range, the motor starts running and the person with it feels the vibration, depending on where he has the device," he explains.

When there is any object ahead, the device shows a red light and will light blue when there is no obstacle. The device can detect obstacles within about five metres and vibrate accordingly.

Malia says the technology can be fixed in watches and phones to avoid carrying bulky devices.

"We want to have portable devices for the visually impaired people. It can be a wearable device; this technology can be fixed in watches. "We can use a ticker timer device used to measure acceleration, to keep on beating the base to create a vibration. It is even smooth and lightweight."

change the dilemma in the entire world.

THE CONCEPT

At the training, all students were asked to write a problem, research about it and develop a lasting solution to the problem. Akena says they took note of the problem of the visually impaired students in the school where they had camped and realised that they had a major problem in getting around freely.

"We also took off time and went to Gulu town, where we realised that many visually impaired people in the area were struggling to cross from one side of the street to the other. Some of these people were aided by others to cross," he

adds. At first, the students wanted to come up with an automatic direction guidance to direct people at institutions to different places.

"We wanted to have this device placed at junctions to easily detect people around it and automatically direct people to different offices, but we lacked a speaker to back it up. That is how we ended up with the blind aid device," Aceng clarifies.

Akena, the inventor of the idea, says apart from obstacles, the device can also help the visually impaired move on their own rather than relying on assistance from other people. He adds that people have become too busy, which could be inconveniencing for the visually impaired. But with this

device, they can easily move on their own. It also promotes a sense of independence, which many people crave in order not to feel like a burden to the community.

WHAT A POTENTIAL USER SAYS

Ronald Luyima, who is visually impaired and is a programmes officer at the National Union of Disabled Persons of Uganda (NUPIDU), says such a new device can only be effective if the public is sensitised about it.

"Imagine the visible 'white cane' which is already within the traffic regulations is still abused by the public; then what about a sensor which is not known? I think it can be more effective if it is connected to the white cane. The white cane can easily help the visually know the kind of obstacle ahead, which the sensor alone cannot," he says.

Luyima stresses that the Government and civil society organisations have not played their role to sensitise the public, especially motorists on the white cane symbol so that they should easily respect the visually impaired on the road.

STATISTICS

The Uganda National Association of the Blind statistics indicate that there are more than two million people in Uganda who are visually impaired, with specifically 350,000 totally blind.

It is believed that any additional way for them to find their way better would make a difference in their lives.