

Over the years, poor results in Biology have been registered in different Uganda National Examinations Board (Uneb) results.

BY JANE NAFULA

It is widely considered to be an important subject that helps students grasp fundamentals about life, ecosystems, and human health, enabling them to make informed decisions about nutrition, disease prevention, and environmental sustainability. Yet, over the years, poor results in Biology have been registered in different Uganda National Examinations Board (Uneb) results.

Uneb statistics for the 2018 examinations, for one, indicate that 13,061 candidates sat for Biology nationwide. Of these, only one candidate attained the highest principal pass, an A. That same year, only about 38 percent of candidates scored at least an E, leaving the majority with grades of O or F. In 2024, a paltry 270 or 1.1 percent of the 24,634 candidates who sat for Biology obtained an A.

The perennial poor performance prompted Makerere University to commission a study under the Office of the Deputy Vice Chancellor Academic Affairs. The study identified the root causes of poor performance, which were tagged to qualifications, competence, and availability of not only Biology teachers but also technicians.

The curriculum also came in for some flak, with findings questioning how topics are segregated. It didn't help matters, the study further discovered, that the state of laboratories was desperately poor. Compounding the grim outlook were the field infrastructure for teaching biology at A-Level that leaves a lot to be desired, and the poor attitude of learners towards the subject.

#### Study findings

Makerere University College of Natural Sciences (CoSNAS), through the School of Biosciences, analysed academic performance in Biology at the Uganda Advanced Certificate of Education (UACE) across nearly half a century. The findings were telling. CoSNAS observed that, since the 1970s, there had been poor performance in the subject in question.

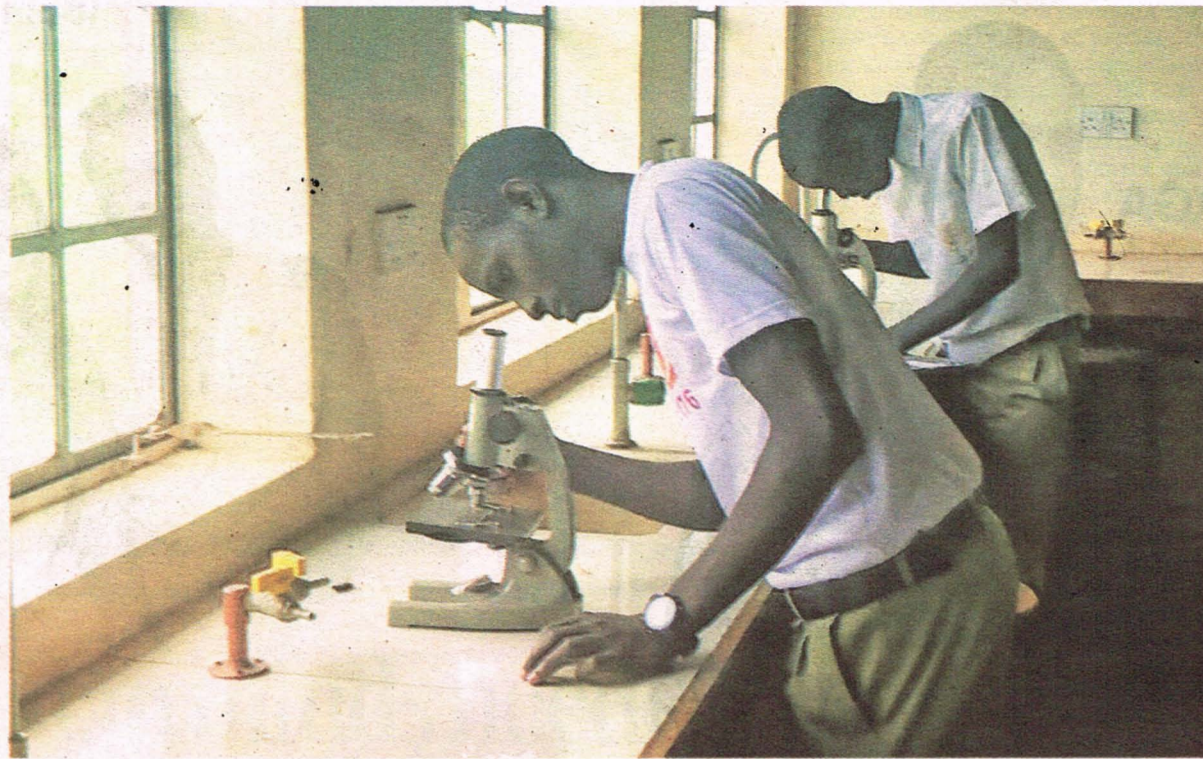
While releasing the findings of the study, Prof Fredrick Jones Muyodi from the Department of Zoology, Entomology and Fisheries Sciences disclosed that 100 districts in the northern, eastern, southwestern, and central parts of the country had been covered. The study, which began with a pilot in Luwero and Kampala districts, where initial findings helped reshape the data collection tools, involved 5,252 respondents.

"For A-Level, the other significant factor was projects in all four regions. Learners noted that they rarely engage in Biology beyond the classroom theory work, hence weakening concept understanding and applications also reflected in the final exams. Eastern and northern regions were affected the most," Prof Muyodi disclosed.

The study highlighted that low student engagement, minimal participation in academic enrichment activities and limited access to digital (reliable Internet access) and practical learning opportunities were dominant challenges in [the] central region. This is despite having relatively better infrastructure.

The eastern region was primarily constrained by shortage in learning re-

# Solutions to Biology puzzle trickle in as worries persist



Students of Kabalega Secondary School in Masindi District during a biology practicals class. PHOTO/COURTESY

sources like specimen, apparatus, weak digital access and limited hands-on teaching approaches. In the northern region, challenges were noted in the field-based learning and Internet access. In western Uganda, the study found that the absence of field excursions and poor access to digital learning materials were the most critical factors.

Other factors that affect the subject, according to this study, include community attitudes and norms towards the subject. The working relationship between Uneb and the National Curriculum Development Centre (NCDC) has also aggravated matters.

"The National Curriculum Development Centre is responsible for setting the curriculum, which should be adopted by schools after being reviewed by Uneb. However, Uneb independently sets the examinations without a close collaborative relationship with NCDC," the study report states.

The study also indicates that while

NCDC experts contribute to the modulation of Uneb set examinations in Physics and Chemistry, there is a conspicuous absence of the same when it comes to Biology.

As well as addressing this gap, the study recommends enhanced teacher capacity, workload management and methodological support, as well as integrating learner-centred approaches. The researchers are also calling for the establishment of a formal collaborative framework between NCDC and Uneb. They as well want curriculum updates to be scheduled and conducted every five years.

#### Age-old problem

Ms Catherine Naluyinda, the head of Biology Department at King's College Budo, one of the first institutions for higher education in Uganda, mainly blames the poor performance in the subject on ineffective teaching approaches.

"Teachers have run away from the fact that students need to get the information from the source by themselves. They prefer giving students pamphlets. That is the major cause of failure in Biology because a student who has a pamphlet will not take any trouble reading textbooks. They will rely on someone else's work," Ms Naluyinda told *Weekend Monitor*.

Ms Naluyinda said the moment students are given scanty second-hand information, and notes are imposed on them without being given time to research on their own, the general performance is likely to be affected. Negatively "At King's College Budo, when students are learning in class, they follow textbooks. All students read and write what they have understood in their own way and they own the discussion. We don't impose notes on students," she disclosed.

Another trick that the school employs to excel, according to Ms Naluyin-

da, is letting the teachers conduct practical lessons more frequently. The Biology teacher outrightly disagrees with the notion that practicals are costly, noting that students can equally share available resources to accomplish their assignments.

For instance, she says if purchasing rats for each and every student is expensive, the school in question can use a few that are available or consult friends in other schools that are doing well on that front. This can enable them to borrow a leaf. Ms Naluyinda also advises schools with a bigger student population to rear rats that students can dissect during practicals.

#### Textbooks Vs pamphlets

Mr Nicholas Oyata, the principal of St Julian High School, Gayaza in Wakiso District, concurs with Ms Naluyinda on the importance of utilising textbooks as opposed to pamphlets. Mr Oyata also revealed that some Biology teachers find it terribly hard to teach Paper II and Paper III. These are practicals.

"Paper II is a highly failed paper. This paper calls for application and requires someone who is technical and can teach a child to understand. The moment you teach learners to cram content, they will not be in position to apply," he explained.

He added, "When it comes to Biology practicals, dissecting a rat is always a challenge. There are questions here that Uneb normally sets, instructing students to dissect the rat and display it to the left and right. This puts off learners who were not exposed to practicals because they couldn't afford a rat. They cost about Shs20,000 each."

The St Julian High School principal also attributes poor performance to teachers who manipulate confidential information and mislead learners. By doing so, they encourage learners to concentrate on particular topics, claiming that Uneb is likely to set from such topics.

"Their minds are fixed on a few items, which in most cases don't come. And, even when they are set, the approach is totally different from what is required," he said.

On the issue of rats used in Biology practicals, Mr Oyata told *Weekend Monitor* that St Julian High School rears its own rats. Currently there are 10,000 rats in stock, which—per the principal—is no mean feat.

Mr Robert Kwizera, a teacher of Biology and Chemistry at Airforce Army Secondary School in Entebbe, said improving performance in sciences goes beyond enhancing the salary of science teachers. "Science can't be done without equipped laboratories. We need apparatus and reagents that match with the number of students. A total of 120 students can't fit in a smaller room. While schools recruit teachers every now and then, where they are lagging behind is infrastructure."

Mr Kwizera also told *Weekend Monitor* that the enhancement of science teachers' salary had led to a surge in the number of students pursuing science combinations, which was not the case before. This further strains the laboratories that operate in constrained circumstances and conditions.

#### WHAT NEXT?

As such, experts have highlighted the need for urgent action to address the crisis of confronting Biology teachers. Mr Vincent Elong, the national chairperson of Uganda Professional Science Teachers' Union (UPSTU), told *Weekend Monitor* that science teachers give their best shot in what can only be described as difficult circumstances.

"We have quite a number of challenges," he confessed, adding, "The Competence-Based Curriculum has been rolled out, but even bringing our textbooks was a battle. Now we have a group which is in Senior Six and we don't have any textbooks. We are trying to use old content and using our teaching techniques to integrate the idea of the new curriculum."

Advocates of education say the sector requires a significant financial boost to cater to its diverse needs. In the 2025/2026 Financial Year (FY), the government increased the sector's budget allocations to Shs5.04 trillion, up from Shs4.2 trillion in the previous FY.

Mr Richard Enyomu, the Commissioner of Human Resource in the Ministry of Education and Sports, told *Weekend Monitor* that they will continue recruiting teachers so long as resources permit them to do so.

Although the country registered improved performance in the 2025 UACE results released on March 13, 2026, Prof Muyodi says good performance must be sustained. Figures from Uneb show that the percentage of can-

didates who got principal pass level A to E in Biology increased to 64.4 percent, from 57.7 percent in 2024. Those who got principal pass level A in the subject were 5.9 percent, an increase from 1.1 in 2024. Of the 35,660 candidates who wrote their Biology exams in 2025, 20,962 were males, and 14,698 were females.

"The results look very good. As a study team, we recognise that our engagements with the stakeholders are contributing a lot to this, but, of course, we need to have sustainable improvement in the performance," Prof Muyodi told *Weekend Monitor*. "We don't want to find the situation whereby this year the results have been very good and the next year again we go back to where we were."