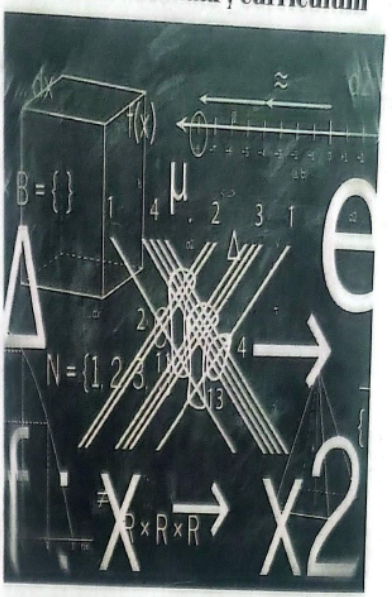
Letters

LETTERS

Retooling as a complementary approach to supporting teachers in the new secondary curriculum



In my previous commentary in this paper, my focus was on the role that universities can play in the dissemination of the new secondary curriculum through science outreach programmes.

The focus this time is on retooling or equipping teachers with 'new tools' for teaching. What do I mean by retooling in this context? To answer the question, I shall use the physics curriculum at the secondary lower level as an example.

The emphasis will be on "light" as a theme, while the topic will be "lenses and optical instruments". This is usually taught in Senior Three, Term Two. The competency involves the application of lenses in various optical instruments, including magnifying glasses, cameras, microscopes, and telescopes. For this competency to be achieved appropriately, a question to be asked is how many physics teachers have seen a telescope in real life?

Can you effectively teach about a telescope without having seen it in real life? Interestingly, this is one of the realities in most hard-to-reach schools where physics apparatus/equipment is inadequate. This leads to a situation where concepts are taught without relating to the actual equipment. With magnifying glasses, cameras, and microscopes, it is no big deal, as they are readily available.

There are several concepts where teachers need to be empowered. By retooling, I mean empowering physics teachers by relating theoretical concepts to actual apparatus and equipment.

For example, this involves teaching about thermocouples (temperature sensors), pyranometers (solar radiation measurement instruments), signal generators, and the Cathode Ray Oscilloscope (CRO), without ever having seen them. To mention but a few.

To address this issue, physics departments at universities in Uganda should consider organising refresher or retooling courses for physics teachers in the country. Physics teachers should be facilitated to attend retooling courses at their university's physics departments.

A needs assessment should be conducted before determining the types of concepts, apparatus, and experimental set-ups that teachers will require. Then, the lecturers and technicians will prepare accordingly for such tasks.

Additionally, the physics departments at universities should collaborate with various ministries and government departments to make this a reality.

This can be accomplished through a joint project. The approach to retooling should be extended to all the different subjects.

This will be a complementary approach to the other existing retooling approaches already in place, such as the Secondary Science and Mathematics Teachers' Programme. Together, we can make physics a fascinating subject.

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