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Guest Editorial

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Before the prompt, make them think: fossil-skilling and the obsolescence gap

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A final year MBBS student in clinical clerkship at a medical school is asked to assess a 56-year-old man presenting to the OPD with breathlessness and chest pain. The student locates her cell phone and begins typing the symptom into a generative-AI software. She is paused in this process by her instructor. “Put your phone away and now tell me what you think.”

The student hesitates. The internet signal is weak, the GenAI software response is not loading, and no laboratory results are available. Usually, a polished answer appears within seconds, but this time it does not. What remains is the learner’s clinical skill, critical reasoning, and ability to respond under pressure.

This situation shows a growing dilemma in medical education. AI is here to stay, and we must prepare students to use it. Yet we must also ensure that they are still able to think before they prompt and practise safely when AI is unreliable, unavailable, or, especially in Global South scenarios, poorly suited to the local context.

Medical curricula are overcrowded, yet the addition of competencies continues, including AI, digital health, professionalism, and genomics. Understandably, some older skills may no longer need extensive curricular time. Masters proposes the concept of “fossil-skilling,”an important idea that challenges educators to identify skills that technology has genuinely made redundant. This is significant because new additions to curricular content cannot continue without retiring anything [1].

Masters, therefore, rightly questions which skills medical education should stop teaching. Yet we need to remember that, in resource-variable settings, deciding whether a skill is “obsolete” is more complicated than determining whether a machine can perform it. This is because of contextual realities such as the unavailability of automation and AI in rural placements, the lack of provision in basic health units, reduced population representation in AI programs, and internet or electricity failures.

We extend this lens of “fossil-skilling” to propose an “obsolescence gap,” defined as the mistaken assumption that a skill can be obsolete everywhere simply because it is automated somewhere. This is particularly relevant in Global South settings, where we may need to review “fossil-skilling” through this gap. Certain competencies that may be obsolete in tertiary care setups, areas with uninterrupted connectivity, or regions where local data are available to train AI systems may not be obsolete in emergency settings, rural settings, areas with weak connectivity, or contexts with inequitable data representation in AI tools.

The “fossil” of one healthcare system may be the “fallback” of another. Here, it is important to recognise that our challenge is not simply adopting new tools and replacing or removing old ones. Medical education has to avoid fossil-skilling in a way that does not produce never-skilled graduates, while also realising that technological obsolescence occurs unevenly across health systems [2].

Based on the same fossil-skilling metaphor, we extrapolate that sound curricular decisions cannot be made solely on technological capacity. A more balanced benchmarking approach can be developed by categorising competencies into independent skills, performed without AI; AI-augmented skills, where AI may improve performance, but professional judgement remains essential; and contingency skills, which are especially important when AI is unavailable or inappropriate. In this vein, we propose the Think-Prompt-Prove model [3].

Before accessing AI, medical students and graduates must think. They need to state the clinical problem or initial differential diagnosis, the supporting and contradictory evidence, and the preliminary management plan [4]. AI may then be used to challenge differentials, reveal possible missed diagnoses, identify assumptions, or compare management plans. The third part, “Prove,” implies “prove locally,” meaning that the learner should verify the AI output against the patient’s actual presentation, local epidemiology, contextual cultural and health-system realities, feasibility, and cost.In this way, AI enters clinical learning as a challenger of reasoning, not as the primary learning source [5].

Of course, if we place AI in this role in learning, assessment must also corroborate the same approach. Relevant

assessments must no longer simply determine whether a learner used AI, but should assess the intellectual work done before, during, and after its use. Approaches can include documenting pre-AI reasoning, providing reflective explanations of why an AI recommendation was accepted or rejected, and offering a brief oral defence after AI-assisted assignments[6]. Therefore, we are not emphasising surveillance or punitive measures but recognising the validity of responsible use.

Contextualisation does not mean that innovation needs to be resisted. It means using innovation to prepare graduates for the healthcare systems they will serve[7]. Global South schools should not reject AI outright because of resource constraints, but they should also not import AI-dependent curricular assumptions without critical analysis.

Similarly, not every traditional task needs indefinite preservation in the Global South context, but locally calibrated decisions must be made with the obsolescence gap in view[8].

Tomorrow's doctor needs to embrace AI but should not be completely helpless without it. The concept of fossil-skilling rightfully challenges medical schools to retire redundant competencies. In the Global South setting, however, this retirement must occur only after a contextual test: is this a fossil skill in technological theory, or is it also obsolete in the environment where the graduate works?

Before the answer is generated by the prompt, medical education must first make learners think. Only then should we prompt, challenge, and prove locally.

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