Before the Chatbot, There Was a Box: The Forgotten Origins of Educational Technology

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ABSTRACT

Educational technology did not begin with the pandemic or the personal computer. This article traces its origins from Edison's 1913 prophecy of the book's obsolescence, through Pressey's 1924 testing machine and Skinner's teaching machines, to today's AI tutors, arguing that the field's defining pattern is amnesia: each technology presents itself as unprecedented because the field forgets its own history. Malaysia's Smart School era illustrates the cycle. Skinner's promises have returned wearing conversational AI. Remembering, not machinery, may change the ending.

KEYWORDS

History, Education Technology, Teaching Machines

Ask most people when educational technology began, and they will point to somewhere around the pandemic. The more generous might say the 1990s, when computer labs arrived in our schools.

Both answers are off by about a century.

In 1913, Thomas Edison confidently predicted that books would soon become obsolete in schools, replaced by motion pictures that would teach every branch of human knowledge. He gave the book about a decade to live. The book, you may have noticed, is doing fine. Edison's prophecy, however, established the template for every educational technology announcement since: a new machine arrives, someone declares the old ways dead, and education is pronounced revolutionised, roughly ten years ahead of schedule, indefinitely.

But if we want the true origin story of educational technology as a field, we must visit an exhibition hall in 1924, where an Ohio State University psychologist named Sidney Pressey displayed a curious typewriter-sized device. It presented a multiple-choice question, accepted an answer through four keys, and would not advance until the student got it right. It tested, it

scored, and, Pressey argued, it taught. He dreamed it would trigger an "industrial revolution" in education. It did not. The machine flopped commercially, and Pressey retreated, decades too early for his own idea.

The idea waited thirty years for a more famous champion. In 1958, the Harvard behaviourist B. F. Skinner published his landmark paper on teaching machines in the journal Science, describing devices that would arrange what he called the optimal conditions for self-instruction: material broken into small steps, active student responses, immediate feedback, and each learner progressing at their own pace (Skinner 1958). Skinner had toured his daughter's Grade 4 arithmetic class and left horrified by what he saw: thirty children forced through identical content at identical speed, waiting a day or more to learn whether their work was right. His machine, he believed, would give every child what wealthy families had always bought privately: a patient, responsive, individual tutor.

Pause on that for a moment. Small steps. Instant feedback. Self-paced learning. Personalised tutoring for every child. If this sounds exactly like the sales pitch for today's AI tutoring platforms, that is because it is. Word for word. The historian Audrey Watters, in her definitive account of this era, documents how the teaching machine movement rose on precisely these promises before collapsing under classroom realities in the 1960s (Watters 2021). The dream of automated, personalised instruction is not an invention of Silicon Valley. It is an inheritance, and mostly an unpaid debt.

What happened between Skinner's machines and our chatbots follows a rhythm so consistent it deserves to be taught in every education faculty. Radio was going to deliver the best teachers to every rural school. Then instructional television, into which entire national budgets were poured in the 1950s and 60s. Then the microcomputer, the CD-ROM, the interactive whiteboard, the MOOC that was going to make universities obsolete by 2015. The education historian Larry Cuban, surveying a century of this pattern, found the same arc repeating: extravagant claims, heavy investment, modest classroom adoption, quiet disappointment, and then amnesia, just in time for the next machine (Cuban 1986). Martin Weller, reviewing twenty-five years of more recent educational technology, lands on a sharper diagnosis: ours is a field remarkably poor at recording its own history, and this forgetfulness is exactly why every new technology gets to present itself as unprecedented (Weller 2020).

Malaysia has lived this rhythm too, and we should be honest about it. The Smart School initiative of 1997 was among the most ambitious educational technology visions of its era anywhere in the world, a flagship of the Multimedia Super Corridor that promised technology-rich, self-directed learning nationwide. Later came the era of national virtual learning environments, tablets, and one platform after another, each launched with grand targets and each quietly retired when usage never matched ambition. Then a pandemic arrived and revealed, within weeks, how much of the revolution had remained on paper: teachers broadcasting lessons over television and messaging apps, improvising heroically with whatever actually worked. Our edtech history is not a story of failure. It is a story of forgetting, and of repeatedly paying full price for lessons we had already bought.

So why does the origin story matter now, in the age of AI?

Because the teaching machine never died. It simply got better at conversation. Every core promise Skinner made in 1958 has returned in the language of large language models, and the research community is once again mapping the same territory: genuine potential in automating instruction, feedback, and assessment, alongside a familiar gap between what the technology promises and what teachers and classrooms actually need (Celik et al. 2022). And this generation of machines carries a risk its ancestors never did. Pressey's box could not think for the student. Today's machines can, and emerging evidence already links heavy reliance on AI tools to weakened critical thinking through cognitive offloading (Gerlich 2025). The stakes of getting the old questions right have gone up.

Here is what a century of this history teaches, if we let it. First, no technology has ever failed in education because it was insufficiently impressive. They failed because they were designed around the machine's capabilities rather than the classroom's realities: the crowded timetable, the tired teacher, the thirty-four students who did not read the manual. Second, the technologies that quietly endured, the blackboard, the textbook, the humble worksheet, survived because they bent to the teacher's practice rather than demanding practice bend to them. And third, every wave that ignored teachers as the central actors of education paid for it, without exception, from Edison's films to the tablets gathering dust in school storerooms today.

I say this not as a sceptic but as someone who builds these technologies and trains teachers to use them. Knowing this history has made me more useful, not more cynical. When a vendor tells me their AI platform will revolutionise Malaysian classrooms, I no longer ask what the technology can do. I ask what Pressey and Skinner could not: will it survive contact with a real school?

A hundred years ago, a box in an exhibition hall promised every child a personal tutor. Today, the box speaks fluent Malay and fits in a pocket. The promise is worth pursuing. It always was.

But this time, let us at least remember how the story usually goes. That memory, more than any machine, is what might finally change the ending.

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