POLICY MEMO

AI in Education Unplugged: Closing the Access Gap Through Education-Driven Design

Based primarily on an hour-long policy dialogue with Dr. Seiji Isotani, with OECD Digital Education Outlook 2026 used as a reference source

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Executive Summary

Artificial intelligence is transforming education, but its benefits remain out of reach for many of the communities that could benefit most. Drawing primarily from an hour-long public interview with Dr. Seiji Isotani and secondarily from the OECD Digital Education Outlook 2026 interview chapter, this memo argues that policymakers should stop treating infrastructure build-out as a precondition for AI in education. Instead, they should design around the infrastructure that already exists—especially mobile phones, intermittent connectivity, and teacher-led delivery models. The Brazil case discussed by Dr. Isotani shows that this approach can work at scale: 500,000 students across 7,000 schools and 20,000 teachers received materially faster feedback on writing, with statistically significant improvement and no meaningful urban-rural or resource-based gap in gains.

I. The Problem: The Great AI Divergence

Dr. Isotani's central warning is that the current AI-in-education conversation is being shaped by high-resource assumptions. Policymakers often debate model capability, personalization, and infrastructure expansion while overlooking a simpler reality: most communities do not have the stable connectivity, devices, or digital readiness assumed by mainstream AI deployments.

> *"How can we bring the benefits of AI to people in places where technology, in particular AI and other kinds of infrastructures, are not available?"*

The infrastructure reality described in the interview is stark.

- Mobile phone penetration exceeds 90 percent, even in many low-income communities.
- Internet access in those same communities remains far lower, often around 15–30 percent.
- At current trajectories, closing the internet access gap between low- and high-income contexts could take almost 100 years.

This creates a policy failure mode: advanced economies deepen AI-enabled learning advantages while low-resource settings are told to wait for the infrastructure catch-up.

II. The Framework: "AI Unplugged" as an Alternative Path

The “AI Unplugged” framework reverses the dominant policy logic. Rather than asking what infrastructure must be built before AI can be used, it starts from educational need and existing constraints. This is not an argument against infrastructure investment. It is an argument against postponing learning support until ideal infrastructure arrives.

> *“We cannot rely on internet when we are thinking about designing AI technologies for these particular regions.”*

Dimension	Infrastructure-Driven Approach	Education-Driven Approach
Starting point	What technology can we build?	What educational challenge must we solve?
Infrastructure	Required before deployment	Designed around existing assets
Teacher role	Recipient of training	Augmented professional / proxy user
Success metric	Technology adoption	Equitable learning gains
Risk profile	May widen existing gaps	Designed to reduce existing gaps

Five design implications follow from this framework:

1. Leverage existing assets: design for the 90 percent who have mobile phones, not only for the minority with stable broadband access.
2. Design for intermittent connectivity: systems should work offline and sync whenever connection becomes available.
3. Augment humans rather than bypass them: teacher-facing and proxy-mediated models are often more realistic than assuming direct student-device interaction.
4. Minimize additional skill requirements: requiring new digital or AI skills can itself become a barrier to adoption.
5. Start with pedagogy: define the learning problem first, then fit the technical solution to that problem.

III. The Evidence: What Brazil Achieved

The strongest part of Dr. Isotani’s case is that this is not merely a theory. He described a national public-policy redesign in Brazil aimed at improving student writing after the pandemic. The original model required handwritten essays to be mailed to a university, scanned, reviewed, and sent back to schools. The result was a four- to six-month delay, high cost, and little real instructional value by the time feedback arrived.

> *“We can augment their capabilities and then use them to support students.”*

The “AI Unplugged” redesign accepted classroom reality rather than trying to erase it:

Step	Action	Technical requirement
1	Students write essays on paper	None; existing classroom practice
2	Teacher or school staff photograph the essay	Basic mobile phone
3	The application queues the image locally	Offline-capable design

4	Upload happens when connection becomes available	Intermittent connectivity; often school-level access
5	AI analyzes handwriting against the rubric	Cloud processing when synced
6	Teachers receive actionable feedback rapidly	Dashboard, PDF, or printed delivery

The system worked because paper remained the student input medium, mobile phones served as the capture device, connectivity could be delayed, and the teacher remained the central user rather than being displaced by it.

The results remain compelling:

- Scale: around 7,000 schools, 500,000 students, and 20,000 teachers.
- Impact: statistically significant improvement in student writing.
- Equity: no significant difference in gains between urban and rural settings, male and female students, or better- and worse-resourced regions.

IV. Actionable Policy Recommendations

The Brazil case translates into immediate guidance for governments, donors, and implementing organizations.

For national governments and ministries of education — Redirect funding from infrastructure-first proposals to education-driven proposals.

- Require AI education proposals to define the learning problem, the target users, and the minimum viable infrastructure before requesting additional technology spending. Judge success by learning gains and equity effects, not device counts.

For public innovation funds — Establish dedicated low-tech AI challenge funds.

- Prioritize tools that work on basic mobile phones, operate offline, and strengthen teacher judgment rather than replacing it.

For all AI pilots — Mandate equity audits from the start.

- Require reporting by region, gender, and socioeconomic status, and demand evidence that pilots do not widen existing gaps.

For international development partners — Invest in localized data and local-language capacity.

- Without localized rubrics, datasets, and curriculum alignment, AI tools will remain skewed toward high-resource contexts.

For system designers — Build around proxy users where direct student access is unrealistic.

- Teacher-, parent-, or mentor-mediated workflows can expand access while also reducing risk from bias and overreliance on student-side hardware.

For evaluators — Use a 'do no harm, seek equity' standard.

- Average gains are insufficient. The central policy question should be whether the intervention improved outcomes for the most marginalized learners.

V. Conclusion: A Choice Point

Dr. Seiji Isotani's interview makes the policy choice clear. Waiting for universal connectivity may mean waiting another century. Students do not have a century to wait. A more realistic and more equitable path is already visible: start with the learning problem, work with the infrastructure that exists, augment teachers, and design AI for the realities of the communities most often left out of technology transitions.

Source note

This memo is based primarily on the full transcript of the AI in Education Unplugged interview with Dr. Seiji Isotani and secondarily on the OECD Digital Education Outlook 2026 interview chapter, used as a reference source to align credentials, terminology, and supporting context.