Artificial Intelligence in Cambodian Education:
A Warning Against Misplaced Hope

Mark Desmaele - June 2026

Preface

This essay is a critical examination of the role assigned to artificial intelligence in Cambodian education. It is not an argument against technology in principle, nor a claim that Cambodia should close itself off from the tools reshaping education systems worldwide. It is an argument about sequencing, about structural conditions, and about what education actually is.

The central claim is this: the Cambodian education system, under pressure to address longstanding shortcomings in quality, reach, and equity, is placing increasing institutional confidence in artificial intelligence as a means of improvement. That confidence is misplaced. Not because AI is without merit in other contexts, but because, under the specific conditions of Cambodian education in 2026, AI fails not merely to solve the problems it is expected to solve. It actively undermines the three things on which any genuine educational improvement must rest: the construction of foundational knowledge, the interpersonal relationships through which learning occurs, and the development of students as independent, culturally grounded thinkers capable of critical engagement with the world.

The essay builds this argument in four parts. It begins with a critical analysis of the current MoEYS policy direction as expressed in the Live Teaching 2026 programme. It then addresses each of the three structural harms in turn: the widening of the access gap, the cultural and economic bias embedded in AI systems, and the erosion of foundational knowledge and critical capacity. Throughout, it draws on the literature in cognitive science, bilingual education, educational psychology, and Cambodian educational research to support each claim. It concludes with a statement of what the evidence suggests should be prioritised instead.

Part One: The Official Position and Its Internal Contradictions

Live Teaching 2026 and the Institutional Hope

On 17 May 2026, Cambodianess, the English-language publication of Cambodian Media Broadcasting Corporation, published an editorial describing the Ministry of Education, Youth and Sport's Live Teaching 2026 programme. The programme, associated directly with Minister of Education Hang Chuon Naron, delivers standardised lessons in real time, taught by leading educators, to students across the country, including in remote provinces, with the stated objective of reducing the quality gap between urban and rural schools. The editorial notes that the ministry "clearly embraces Cambodia's transition to the digital economy" and that provincial departments are being encouraged to promote self-learning, the use of AI tools, and the learning of foreign languages.

The programme represents a serious and well-intentioned response to a genuine problem. Cambodia's education system exhibits significant quality disparities between schools in Phnom Penh and provincial capitals, on the one hand, and those in rural and remote areas, on the other. These disparities are not superficial. They reflect deep differences in teacher qualification, infrastructure, access to materials, and the ambient knowledge environments in which students are growing up. The Live Teaching programme attempts to address this by providing all students, regardless of location, with access to the same high-quality instructional content.

This logic is coherent. Its problems, however, are structural and visible within the ministry's own framework.

The Five Pillars Contradiction

The ministry identifies five pillars on which the programme's success depends: public support, infrastructure, school leadership, teacher professionalism, and student commitment. This is an accurate identification of the prerequisites for educational quality. It is also, read carefully, a description of what Cambodia currently lacks at scale.

Teacher professionalism is identified as a pillar precisely because it is insufficient and unevenly distributed. Infrastructure is identified as a pillar because it remains inadequate, particularly in rural areas. The Live Teaching programme is offered as a solution to the quality gap, while simultaneously requiring, as conditions of its success,

the very conditions that the quality gap reflects. The programme assumes its outputs as inputs.

The editorial itself acknowledges this tension without resolving it. It states that “technology will never replace the role played by awesome teachers able to supervise, guide and correct the use of powerful tools such as AI.” It further notes that “if students in the countryside were reduced to use online content without accompaniment, this would go against the pursued objectives.” Both statements are accurate. Neither is accompanied by an account of how the accompaniment will be ensured in the schools where it is most needed and most absent.

This is not a criticism of the ministry’s intentions. It is an identification of the structural gap between the programme’s stated conditions for success and the conditions that actually obtain in the schools it is designed to reach.

What the Programme Does Not Address

The Live Teaching model delivers standardised broadcast content from expert teachers to students nationwide. A student in a remote province watches the same lesson as a student in Phnom Penh. This is presented as an equity achievement. In a narrow sense, it is: access to the same video content is indeed equalised.

But access to the same content is not access to the same education. The Phnom Penh student has a more qualified local teacher available to mediate and extend the broadcast lesson, supplementary resources, a richer ambient knowledge environment built up over years of living in a more information-dense context, and a higher baseline of prior knowledge on which the broadcast instruction can build. The rural student has the broadcast and an AI tool for self-study and review. The local teacher who is expected to guide and supervise AI use is, in many cases, the same teacher whose insufficient qualifications are the reason the programme exists.

The equity gap that the programme is designed to close may, under these conditions, be reproduced or widened at a higher level of technological sophistication. Students in well-resourced schools with qualified teachers will use AI as a supplement to strong instruction. Students in under-resourced schools without qualified guidance will use AI as a substitute for unavailable instruction. These are not the same educational experience, and they will not produce the same outcomes.

A further gap in the programme's public narrative deserves mention. Neither the Ministry's communications nor the reporting around Live Teaching 2026 specifies which school levels the programme targets. This is not a minor administrative detail.

The model assumes students who are sufficiently self-directed to engage with broadcast content and AI tools, and local teachers who are sufficiently qualified to guide that engagement. Both assumptions become progressively less tenable as the target age group moves downward. At the primary level, where class sizes in rural schools are large, devices are scarce or shared, and some teachers have limited subject knowledge, the model, as described, has no coherent operational form. The Ministry has not addressed this question publicly. Until it does, a significant part of the programme's intended reach remains undefined.

The AI Role Is Undefined

The programme encourages the use of AI tools for self-study, review, and the development of student autonomy. No specification is given of which tools, under what conditions, with what pedagogical framing, or with what safeguards. The word “autonomy” is used as though self-directed AI interaction is inherently developmental. The evidence, examined in detail in Part Four of this essay, suggests the opposite: unsupported AI use for self-study is a condition under which the foundational knowledge and cognitive capacities that genuine autonomy requires fail to develop.

This matters because the institutional confidence being placed in AI is not hypothetical. It is active, current, and shaping how resources and attention are directed within the Cambodian education system. The question this essay asks is whether that confidence is warranted, and what is being overlooked or foregone as a consequence.

A Pattern Across the Landscape

Live Teaching 2026 would be easier to address if it were an isolated case. It is not. The same structural logic, AI and digital tools as compensatory mechanisms for absent teaching quality, deployed ahead of the conditions that would make them effective, runs through the wider landscape of AI-related educational initiatives in Cambodia, across government programmes, development partner frameworks, and NGO-led pilots alike. The contradictions identified above are not the accidental features of one poorly designed programme. They are recurring features of a shared institutional posture, and it is that posture which this essay examines.

Within MoEYS, the pattern extends well beyond Live Teaching 2026. The Primary Learning Platform (PLP), formally launched in January 2025, targets primary schools and offers students quizzes, instructional videos, and a digital library aligned to the national curriculum. At the official launch, the ministry explicitly called on working groups to integrate AI to enhance the efficiency of teaching and learning. The platform

assumes device access and sufficient teacher capacity to guide its use, the same assumptions that the access gap at the primary level makes untenable. These are precisely the schools where both are most likely to be absent. The ministry's Sala Digital platform extends this logic further, explicitly enabling students to engage in self-study freely, at any time and from any location, with the stated aim of supporting formal education nationwide. It institutionalises the model of learning without accompaniment that Live Teaching 2026's own editorial acknowledged would undermine the programme's objectives.

Among development partners, UNESCO's STEPCam programme, a USD 27 million initiative funded by the Global Partnership for Education, is working with MoEYS to develop Cambodia's first ICT and AI Competency Framework for Teachers. The framework is the right priority. The problem is sequencing: AI tools were being actively promoted in Cambodian classrooms while the framework governing their responsible use was still under development. The instrument preceded the safeguard. Cambodia's First National AI for Education Conference, convened in November 2025 and attended by over 400 policymakers, educators, researchers, and development partners, acknowledged this tension without resolving it. The five prerequisites that Live Teaching 2026 cannot assume into existence, teacher professionalism, infrastructure, school leadership, public support, and student commitment, are equally absent from the conditions in which these wider initiatives are being deployed. The ministerial pillar framework applies across the landscape, not only to the programme from which it was drawn.

These programmes differ in design, funding, and scope. What they share is a common assumption: that AI and digital tools can substitute for or compensate for the teaching quality, infrastructure, and relational conditions that the evidence consistently identifies as the actual prerequisites for educational improvement. The three structural harms examined in the following parts of this essay, the widening of the access gap, the introduction of cultural and economic bias, and the erosion of foundational knowledge and critical capacity, are not problems specific to Live Teaching 2026. They are the predictable consequences of this shared posture, wherever it takes institutional form.

Part Two: The Access Gap: AI Widens the Divide It Is Supposed to Close

The Digital Divide in the Cambodian Context

The most immediate structural problem with AI-based educational interventions in Cambodia is access distribution. Digital and AI tools require connectivity, devices, and digital literacy. These are not evenly distributed. The pattern of their distribution reproduces and amplifies existing inequalities rather than correcting them.

Cambodia's urban-rural digital divide is documented and significant. The 2025 integrative review of AI in Cambodian education identifies infrastructure gaps, digital literacy limitations, and linguistic constraints as primary barriers to AI adoption in schools outside the main urban centres. UNESCO's AI Readiness Assessment for Cambodia similarly identifies continuing challenges in infrastructure development, skills training, and public awareness. These are not recent findings. They reflect conditions that have persisted across multiple cycles of development investment and have not been resolved by the availability of digital tools, because those tools depend on absent infrastructure.

The consequence is straightforward. AI-based educational resources are substantially more accessible to students in Phnom Penh and provincial capitals than to students in rural districts. Within urban areas, they are more accessible to students from higher-income households, those with devices, and those with prior digital experience. Selwyn (2020) defines the digital divide as the gap shaped by socioeconomic factors, geographical location, and the availability of infrastructure, and research consistently shows that students from rural and economically disadvantaged backgrounds face significant barriers to using AI-driven tools. Research published in IntechOpen (2026) argues that, rather than reducing inequality, AI amplifies existing educational divides because data generated in privileged contexts feed algorithmic systems, while countries with lower connectivity remain passive consumers of tools developed elsewhere. In Cambodia, this is not an abstract tendency. It describes the actual distribution of conditions on the ground.

The Compounding Effect on Learning Outcomes

The access gap does not merely mean that some students cannot use AI tools. It means that students who can use them gain advantages that students who cannot do not. If AI tools provide genuine educational value, even if only in access to content and review

resources, then students with access develop competencies that students without access do not. The gap between them grows.

This compounding effect is particularly significant in the context of the bilingual education model supported by the evidence for Cambodia. The TDSO framework, drawing on the work of Bialystok and colleagues, establishes that bilingual cognitive development produces executive function advantages, metalinguistic awareness, and enhanced working memory that accumulate over time. These advantages are largest for students who receive sustained, high-quality bilingual instruction. If AI tools are more accessible to students who already have better-resourced instruction, the students who most need the cognitive development that good education provides are also those most likely to be excluded from the technological tools being promoted as educational solutions.

The equity argument for AI in education is under examination. AI is presented as a mechanism for equalising access to quality content. In practice, under Cambodian conditions, it serves as an additional layer of educational advantage for those already better positioned, while remaining inaccessible to those for whom the gap is widest.

The English Proficiency Barrier

A specific dimension of the access gap in Cambodia is the relationship between AI access and English proficiency. The overwhelming majority of AI tools of educational relevance are built in English, operate primarily in English, and produce outputs in English. Khmer remains a low-resource language in the global AI landscape. International institutions developing AI systems concentrate on languages with global economic or strategic relevance; Khmer does not meet this threshold. Cambodian IT professionals have noted directly that the dominance of English in digital technology limits Cambodian people's ability to use AI effectively, since only those who know English can use it.

This creates a second layer of access inequality within Cambodia. Urban students with access to private English-language instruction and students from families with English-speaking adults can engage with AI tools in the language for which they are designed. Rural students with limited English, taught by teachers whose own English proficiency may be weak, interact with AI tools at a significant disadvantage, or cannot interact with them meaningfully at all.

The policy response of promoting AI alongside English language learning does not resolve this problem. It reframes the access gap as a motivation for acquiring English, while leaving unaddressed the structural conditions, teacher quality, instructional

time, and resource availability that determine whether English acquisition actually occurs.

Part Three: Cultural and Economic Bias: AI Delivers Someone Else's Knowledge

The Structural Bias in AI Systems

The second structural harm is less visible than the access gap but more fundamental in its implications. AI systems are not neutral information delivery mechanisms. They are trained on data, and that data reflects the knowledge, values, priorities, and assumptions of the societies that produced it. The knowledge embedded in AI tools is predominantly drawn from English-language, Western-centric internet sources.

Research published in Frontiers in Computer Science (2026) argues that AI tools marginalise students from other countries and regions due to language, cultural, and algorithmic biases. The issue is not only access but also design: the tool does not account for local nuances, and this structural inattention perpetuates social inequities. Boateng and Boateng (2025) found that algorithmic decision-making tools used in educational contexts reinforce structural inequalities by prioritising Western-centric academic profiles and suppressing alternative educational trajectories. For Cambodian students, this is not a marginal problem. It is a central one.

What AI Cannot Know About Cambodia

The knowledge that a Cambodian student needs to function as a literate, capable participant in Cambodian society is not adequately represented in AI systems trained on global English-language data. This is a claim about the functional conditions for comprehension and critical thinking, not a form of cultural protectionism.

The Core Knowledge Foundation, drawing on the work of E.D. Hirsch Jr. and decades of cognitive science research, establishes that reading comprehension is a knowledge-dependent activity. A reader who encounters a text that assumes background knowledge they lack cannot comprehend it, regardless of their ability to decode its words. The knowledge that a text assumes is the knowledge of the culture in which that text was produced.

For a Cambodian student, the relevant knowledge base includes Khmer linguistic and literary traditions, the ethical frameworks embedded in Buddhist teaching and classical texts such as the 'Reamker', the historical experience of the Khmer Rouge period and its consequences for Cambodian society, the regional context of ASEAN membership, and the specific social norms and communicative conventions that Khmer culture takes for granted. An AI system trained primarily on English-language

data does not reliably or accurately convey this knowledge, nor does it do so with the interpretive care that a well-educated Cambodian teacher would bring to it.

When a Cambodian student uses an AI tool to learn about Cambodian history, culture, or civic life, they receive an account filtered through frameworks that are not Cambodian. This is not merely a matter of occasional inaccuracy. It is a matter of perspective, emphasis, and interpretive framework. The version of Cambodian history that appears in AI outputs trained on global data is not the version that a Cambodian educator, drawing on Cambodian scholarship and community knowledge, would teach.

The Khmer Language Problem

Sophal Kao (2026), writing in the Cambodian Journal of Educational Research, documents in detail the profound structural differences between Khmer and English. These differences are not superficial. Khmer and English differ in their phonological systems, grammatical structures, tense systems, word orders, and cultural pragmatics of communication. English has twelve grammatical tenses; Khmer has none in the inflectional sense, conveying temporal meaning through particles and context. English uses articles; Khmer does not. The politeness and hierarchical norms embedded in Khmer communicative practice differ fundamentally from those in English, creating systematic patterns of misunderstanding when Khmer speakers use English.

This linguistic distance has a direct implication for the use of AI. AI tools that produce English output embed English grammatical, pragmatic, and cultural assumptions. A Cambodian student who uses AI-generated English text without the linguistic scaffolding to understand those assumptions and how they differ from Khmer equivalents is not acquiring English literacy. They are acquiring the surface appearance of English text without the depth of comprehension that makes it useful. Kao notes that even advanced Khmer speakers of English carry systematic grammatical and pragmatic interference patterns from Khmer that require skilled human teaching to address. AI tools cannot diagnose or correct these patterns.

The Translanguaging Problem

The TDSO bilingual education framework, drawing on Cummins (2000) and the translanguaging literature, establishes that effective bilingual education is not a process of switching between two separate languages. It is a practice in which students draw on a unified linguistic repertoire, moving fluidly between Khmer and English in ways that develop both languages simultaneously and produce cognitive advantages

that neither language alone generates. This requires a teacher who understands both languages and cultures, as well as the specific interference patterns between them.

AI tools cannot support translanguaging in this sense. They operate within a single linguistic framework at a time. They do not model the dynamic interplay between languages that produces bilingual cognitive development. A student who interacts with an AI tool in English and then in Khmer is not translanguaging; they are switching between two separate interactions with a system that treats each language independently. The cognitive development that genuine bilingual practice produces does not occur.

The Standardisation Problem

AI operates through pattern recognition and statistical generalisation. It produces outputs optimised for the statistical average of its training data. That average is not a Cambodian student. It is not a Khmer speaker navigating the specific linguistic, cultural, and economic circumstances of Cambodia in 2026. The standardisation is not a design flaw that better engineering will correct. It is the mechanism.

A student whose primary educational interaction is with AI is being trained to interact with a system designed for someone else. The knowledge they acquire is pre-selected, pre-framed, and pre-interpreted by algorithmic processes that reflect values, priorities, and assumptions of the societies that built them. Research on generative AI and power imbalances notes that AI-generated content reflects the perspectives of technologically dominant countries, overshadowing marginalised indigenous knowledge and practices. In Cambodia's case, this is the default condition for AI use, in the absence of deliberate, resource-intensive countermeasures that the current system is not positioned to provide.

Part Four: The Erosion of Foundational Knowledge and Critical Capacity

What "Critical Thinking" Actually Means

The phrase "critical thinking" appears throughout educational policy documents, curriculum frameworks, and discussions of twenty-first century skills. It is used so broadly that it has effectively become a container term without stable content. Before the harm that AI poses to critical capacity can be argued, the term must be defined precisely and grounded in evidence.

The starting point is Daniel Willingham's work in cognitive psychology. Willingham (2007) concludes directly that critical thinking is not a skill. There is no set of critical thinking abilities that can be taught independently of content and then applied across domains. From the perspective of cognitive science, critical thinking comprises reasoning, making judgments and decisions, and problem solving, but the ability to think critically in any domain depends on domain knowledge and practice. Without a strong foundation in a subject, students struggle to apply critical thinking effectively, and these skills do not generalise easily across domains. This is the problem of transfer, a robustly documented phenomenon in the research literature.

Willingham's conclusion has a direct implication that is frequently missed in educational policy: if critical thinking requires domain knowledge as its substrate, then anything that depletes or bypasses the acquisition of domain knowledge directly undermines the capacity for critical thinking. Teaching students to "think critically" without ensuring they have the knowledge base on which to think is not merely ineffective; it produces students with the vocabulary of critical analysis without the cognitive resources to apply it.

Core Knowledge as the Prerequisite

The work of E.D. Hirsch Jr. and the Core Knowledge Foundation provides the framework for understanding the relevant knowledge base. Hirsch's central argument, grounded in cognitive science and developed across several decades of research, is that reading comprehension is not primarily a decoding skill but a knowledge-dependent activity. A student who lacks the background knowledge a text assumes cannot comprehend it, regardless of their technical reading ability. The achievement gap, in Hirsch's formulation, is chiefly a knowledge gap: students from advantaged backgrounds arrive in school with the prior knowledge that instruction assumes, while

students from disadvantaged backgrounds do not, and this gap compounds over time because knowledge builds on knowledge in a cumulative and exponential way.

The implication for Cambodia is clear. A student who does not possess the shared knowledge base that Cambodian literacy assumes, who does not know the cultural references, historical events, social norms, and civic frameworks that Khmer texts and Khmer communication take for granted, cannot become a literate participant in Cambodian society, regardless of their formal schooling. This knowledge cannot be acquired from AI tools that do not carry it accurately or in a culturally appropriate form.

Defining Core Knowledge for Cambodia

Core knowledge, in the Cambodian context, is the accumulated body of shared factual, cultural, linguistic, and civic knowledge, developed across both Khmer and English, that enables a young person to participate meaningfully in Cambodian and regional civic and economic life, to make informed judgements about their own circumstances, and to engage critically with information from inside and outside their immediate experience. The cognitive capacities that underpin this critical engagement are themselves strengthened by the sustained, structured process of developing competence in both languages.

This definition treats Khmer and English not in a foundational/secondary hierarchy but in a productive cognitive relationship. The TDSO bilingual education framework, drawing on Bialystok and colleagues, establishes that bilingual learners develop five essential competencies that monolingual learners do not: executive functioning, cognitive flexibility, metalinguistic awareness, attentional control, and working memory. These competencies are produced not by knowing two languages but by the cognitive work of operating between them. A student who uses AI to produce text in either language has not performed this cognitive work and, therefore, has not developed these capacities.

The definition includes the phrase “engage critically with information from outside their immediate experience” as the functional outcome enabled by the knowledge base. This is where Willingham’s argument connects directly to AI risk: a student who lacks foundational knowledge cannot critically evaluate AI-generated content because they have no independent basis for assessing it. They are dependent on the system to tell them what is true, which is the opposite of critical capacity.

Bloom's Taxonomy and the AI Threat

Benjamin Bloom's taxonomy of cognitive objectives provides a useful framework for understanding where AI poses its most serious threat. The taxonomy distinguishes between lower-order cognitive skills (remembering, understanding, and applying) and higher-order skills (analysing, evaluating, and creating). Research on AI and cognitive offloading suggests that AI tools are most effective at assisting with lower-order tasks and are most likely to suppress the development of higher-order skills.

Research published in Frontiers in Education (2025) identifies cognitive offloading, in which students who rely heavily on AI show declines in analytical reasoning and reduced motivation to study. A longitudinal study by Yusuf et al. (2024), involving over 1,200 participants across 76 countries, found a negative relationship between generative AI use and creative thinking skills over time. Research in Cogent Education (2025) confirms that excessive reliance on AI can diminish critical thinking, decision-making, and problem-solving, with students increasingly accepting AI outputs without critical assessment. A study of Chinese university students found that greater dependence on AI was associated with lower levels of critical thinking, with cognitive fatigue partially mediating this relationship.

Higher-order thinking, the analysis, evaluation, and creation at the top of the taxonomy, does not develop in isolation. It develops through challenge: being required to defend a position, identify flaws in an argument, synthesise information from conflicting sources, and produce original work under conditions that genuinely demand originality. AI tools do not create these conditions. They resolve the challenge before the student has to meet it. The student who uses AI to produce an essay has not developed the capacity that writing an essay is supposed to build. They have produced an output without the process.

In the Cambodian context, this matters with particular force because the skills at the top of Bloom's taxonomy, critical analysis, evaluation of evidence, and creative synthesis, are precisely the skills that participation in a modern economy, a regional community, and a democratic society requires. A generation of students whose formal education has consisted substantially of AI-mediated content consumption and AI-assisted output production will not possess these skills. They will possess the credentials but lack their substance.

The Interpersonal Relationship: The Medium of Learning

The argument so far has addressed what students learn and how AI distorts that process. It has not yet addressed the medium through which learning occurs: the teacher-student relationship. This is the most important point in the argument, and the one most thoroughly obscured in policy discussions that frame education primarily as content delivery.

Lev Vygotsky's sociocultural theory of learning establishes that cognitive development is not an individual process but a social one. All higher cognitive functions first appear between people in social interaction, and only subsequently within the individual as internalised capacity. Learning is the internalisation of shared activity, and it requires a more capable other who can identify the precise edge of the learner's current competence, the Zone of Proximal Development, and provide support calibrated to that specific moment. This process is irreducibly interpersonal. It requires a human being who can perceive, interpret, and respond to another human being in real time, adjusting not to a statistical profile of learners but to this child, in this moment, with this specific configuration of knowledge, confusion, motivation, and need.

An AI tool can provide information. It cannot identify a specific child's Zone of Proximal Development at a given moment because doing so requires perceptual, relational, and contextual understanding that no current AI system possesses. What AI provides is not scaffolding in Vygotsky's sense. It is a pre-formed answer that bypasses the zone entirely. The student receives the output of the cognitive process without performing it and without being guided through it by someone who cares about the outcome.

Jerome Bruner's development of the scaffolding concept specifies what good support within the ZPD looks like: joint attention, shared problem-solving between a more and a less capable person, with the more capable person holding the problem open rather than closing it, directing attention toward relevant features, and gradually withdrawing support as the student internalises the capacity. This requires the teacher to be genuinely attentive to the specific student. The relationship is not instrumental; it is the condition of learning.

John Hattie's synthesis of over 800 studies of educational interventions identifies teacher-student relationships as among the highest-effect interventions in education, with an effect size of 0.72, well above the threshold of 0.40 that Hattie uses to identify meaningfully effective practices. Computer-assisted instruction has an effect size of 0.28 in Hattie's synthesis, below the threshold of meaningful impact. This is not a

minor difference. It is the difference between an intervention that reliably accelerates learning and one that does not.

The Banking Model, Perfected

Paulo Freire, in Pedagogy of the Oppressed, distinguished between the banking model of education, in which knowledge is deposited by the teacher into the passive student, and genuinely dialogical education, in which teacher and student are co-investigators of reality. Freire's critique of the banking model anticipated with remarkable precision the educational consequences of AI-mediated learning.

AI does not merely replicate the banking model. It perfects it. The student submits a query; the system returns an answer. No dialogue occurs. No co-investigation of reality takes place. The student's critical agency, their capacity to question, to push back, to bring their own knowledge and experience to bear on the problem, is not engaged. It is bypassed. The student learns that knowledge is what a system provides when asked, and that the appropriate response to a question is to consult the system rather than to reason independently.

This is a pedagogical formation, not merely a tool used. A student who has been trained over years of schooling to consult AI for answers has not merely acquired a habit. They have developed a cognitive posture that positions them as consumers of pre-formed knowledge rather than as producers of independent thought. Reversing this posture, if it becomes entrenched, is not a matter of teaching critical thinking as a remedial skill. It requires rebuilding the entire relationship between the student and knowledge.

The Cambodian Cultural Dimension

The relational argument takes on particular weight in the Cambodian context for cultural, historical, and structural reasons.

In Khmer culture, the relationship between teacher and student carries moral and social weight that has no direct equivalent in Western educational frameworks. The Khmer word for teacher, Kru, implies moral authority, social respect, and a sense of debt the student owes to the person who has transmitted knowledge to them. This is not a convention; it is a substantive moral relationship that shapes how students engage with learning, how they understand their own development, and how they situate themselves within a broader community of knowledge.

This relationship cannot be replicated by an AI system. An AI system cannot be respected in the Khmer sense. It cannot give anything of itself. It cannot create the sense of obligation and reciprocity that motivates genuine engagement. A student who

interacts primarily with AI is operating outside the relational framework that gives Cambodian education its social and moral meaning, not merely using a different tool, but participating in a fundamentally different kind of activity that the cultural framework of Cambodian learning does not recognise as education.

The historical dimension deepens this concern. The Khmer Rouge period destroyed not only the physical infrastructure and the educated adult population. It systematically severed the relationships through which knowledge is transmitted across generations. Teachers were killed or forced to conceal their identities. The moral authority of educated people was deliberately and violently undermined. The intergenerational transmission of knowledge, which in any society depends on relationships of trust and respect between those who know and those who are learning, was catastrophically interrupted.

The recovery of Cambodian education since 1979 has been, among other things, a recovery of these relationships: the rebuilding of trust in teachers, the re-establishment of the school as a place where knowledge and moral formation are taken seriously, the slow reconstruction of an educational culture that the Khmer Rouge tried to eliminate entirely. This relational recovery cannot be accelerated by technology. It can, however, be disrupted by a structural shift that repositions AI as the primary authority on knowledge, reducing the teacher to a facilitator of human-machine interaction.

Part Five: The Opportunity Cost and What Should Be Done Instead

The Real Problem with Misplaced Confidence

The argument assembled in this essay is not that AI in education should be prohibited or that Cambodia should resist technological engagement. It is that the specific use of AI as a compensatory mechanism for educational shortcomings, in the conditions that currently obtain in Cambodia, produces the opposite of its intended effects while consuming the attention and resources that the actual problems require.

The actual problems are well identified by the ministry's own five pillars: teacher professionalism, infrastructure, school leadership, public support, and student commitment. These problems have resisted resolution not because appropriate interventions are unknown, but because those interventions are slow, expensive, demanding of sustained commitment, and unglamorous compared with the visible, technologically impressive alternative of digital tools and AI-assisted learning platforms.

The opportunity cost of misplaced confidence in AI is a generation of students who do not receive what they actually need, while the system directs its energy and resources toward an intervention that cannot deliver it.

What the Evidence Actually Supports

The evidence assembled in this essay consistently points to a set of priorities that are neither novel nor controversial in the educational research literature, yet are systematically underweighted in favour of technological solutions.

Teacher development, sustained and systematic

The single most powerful intervention available to any education system is improving the quality of its teachers. Hattie's synthesis makes this unambiguous. The TDSO bilingual education framework identifies teacher preparation as the most influential factor in the successful implementation of programmes. Kao (2026) establishes that effective English teaching for Khmer speakers requires teachers who understand the specific interference patterns between Khmer and English, can diagnose them, and can apply targeted corrective techniques. This is specialist knowledge that takes years to develop and requires sustained professional development, mentoring, and support. It cannot be shortcut by AI, and it cannot be assumed into existence by a programme that does not fund it.

Development of a Cambodian core knowledge curriculum

The argument developed in this essay points to the absence of a codified, agreed body of core knowledge appropriate to the Cambodian context. No Cambodian equivalent of the Hirsch consensus process has been undertaken. Defining this content through genuine consultation with Cambodian educators, scholars, cultural figures, and communities is a prerequisite for coherent curriculum development and any meaningful assessment of whether students are acquiring what they need.

Genuine bilingual education infrastructure

The cognitive case for bilingual education in Cambodia is well established. The TDSO framework, drawing on decades of international research and aligned with the goals of Cambodia Development Research Institute publications and the ministry's own policy frameworks, demonstrates that additive bilingual education yields superior outcomes in academic subjects and in the cognitive competencies that enable lifelong learning. Realising this requires not AI tools but trained bilingual teachers, bilingual materials developed in both Khmer and English, assessment frameworks that honour bilingual development, and institutional commitment sustained over the years it takes for bilingual programmes to demonstrate their full effects.

Addressing infrastructure honestly

The Live Teaching 2026 programme cannot reach students who lack connectivity, devices, or electricity. Investing in the physical infrastructure of education, in roads that teachers can travel on to reach remote schools, in reliable power supply, in the basic material conditions of functional schools, is less visible than investing in AI platforms but more foundational.

AI’s Legitimate Role

None of this entirely excludes AI from Cambodian education. There is a legitimate role for AI as a tool in the hands of qualified teachers who understand both its capacities and its limitations. AI can support lesson preparation, provide teachers with access to a wider range of instructional materials, offer students targeted practice on specific skills under the guidance of a teacher who can interpret and respond to the results, and make some content accessible that would otherwise be unavailable.

The critical distinction is between AI as a tool that extends and supports the work of qualified teachers, and AI as a substitute for the teacher, the relationship, and the process of knowledge construction that no tool can replace. The ministry’s own formulation (AI as a trigger, not a substitute) correctly identifies this distinction. The problem is not the formulation. It is the absence of the conditions that would make the

formulation operational, and the risk that in their absence, AI functions as a substitute by default.

Conclusion

Cambodia's education system faces real and documented challenges. The quality gap between urban and rural schools, the shortage of qualified teachers, the limited availability of bilingual instructional materials, and the infrastructure constraints on educational access are not exaggerations. They are conditions that affect the life chances of a generation of Cambodian students.

The response of placing institutional confidence in AI to address these challenges is understandable. AI is visible, scalable, relatively inexpensive to deploy, and carries the prestige of technological modernity. It appears to offer a solution that matches the scale of the problem.

But the appearance is not the reality. AI does not address the access gap; it reproduces it at a higher level of technological complexity, with urban, English-literate, well-resourced students benefiting most while rural students with the greatest need are excluded or underserved. AI does not address the cultural and economic bias in education; it introduces a new, more pervasive form of it, delivering knowledge filtered through frameworks that do not reflect Cambodian reality and actively displace the cultural knowledge that Cambodian literacy requires. AI does not address the erosion of foundational knowledge and critical capacity; it accelerates it by removing the cognitive struggle through which knowledge is constructed, the interpersonal relationships through which learning occurs, and the bilingual processes through which the cognitive capacities for critical engagement are built.

The opportunity cost is not abstract. It is the teacher training programme that is unfunded, because the AI platform is. It is the Cambodian bilingual curriculum that has not been developed because standardised digital content appears adequate. It is the school building that remains without reliable electricity, while the province is encouraged to adopt AI tools. It is the student in a remote district who watches a broadcast lesson without the qualified teacher who should be sitting beside them, using AI autonomously in ways that produce the appearance of learning while the conditions for actual learning remain unmet.

The ministry is right that technology will never replace the awesome teacher. The question this essay asks is whether the programme, as designed, ensures that the awesome teacher is there. The evidence assembled here suggests it does not, and that until the conditions for genuinely effective teaching are built slowly, expensively, unglamorously, and with sustained commitment, the promise of AI in Cambodian education will remain a promise that works against the students it claims to serve.

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