

Capacity Building in the Age of AI



Global Evidence, Tajikistan's Path, and a Strategic Action Plan for AI in Education

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ITU, 2026

01 — GLOBAL EVIDENCE

AI Is Rewriting Work and Learning — Worldwide

What the IMF, ILO, WEF, UNESCO, OECD, McKinsey, PwC and Deloitte actually show.



The Headline Numbers Decision-Makers Quote

~40%

of global jobs are exposed to AI — -60% in advanced economies

IMF, 2024

1 in 4

workers worldwide is in a job with some generative-AI exposure

ILO-NASK, 2025

39%

of workers' current skills will change or be outdated by 2030

WEF, 2025

56%

average wage premium for workers who hold AI skills

PwC, 2025

\$2.6–4.4T

in potential annual value from generative-AI use cases

McKinsey, 2023

\$4.8T

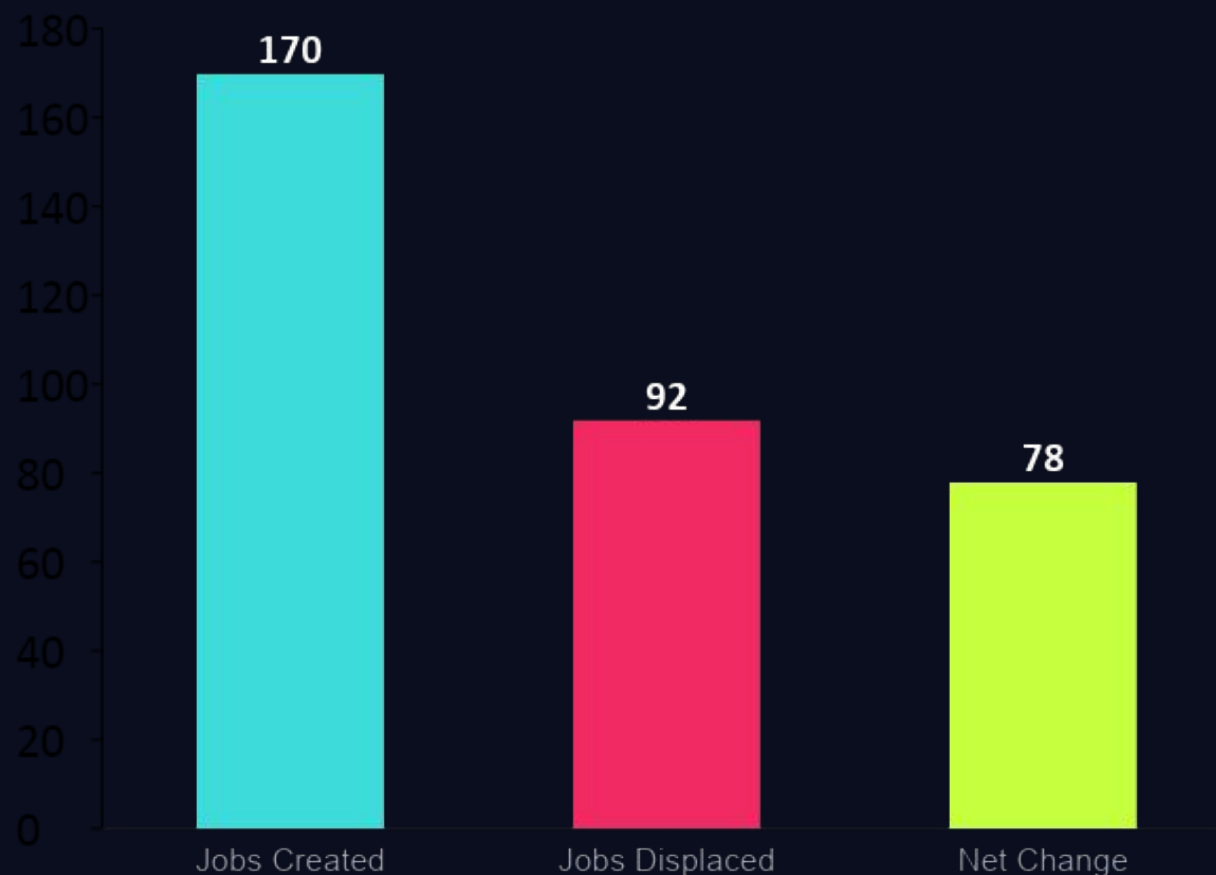
projected size of the global AI market by 2033

UNCTAD, 2025

Evidence note: “exposure” means tasks may be affected — not automatic job loss. Economic-value figures are modeled potential, not realized GDP.

Global Labor-Market Churn by 2030

World Economic Forum, Future of Jobs Report 2025 – employer-survey based projection, not an observed outcome

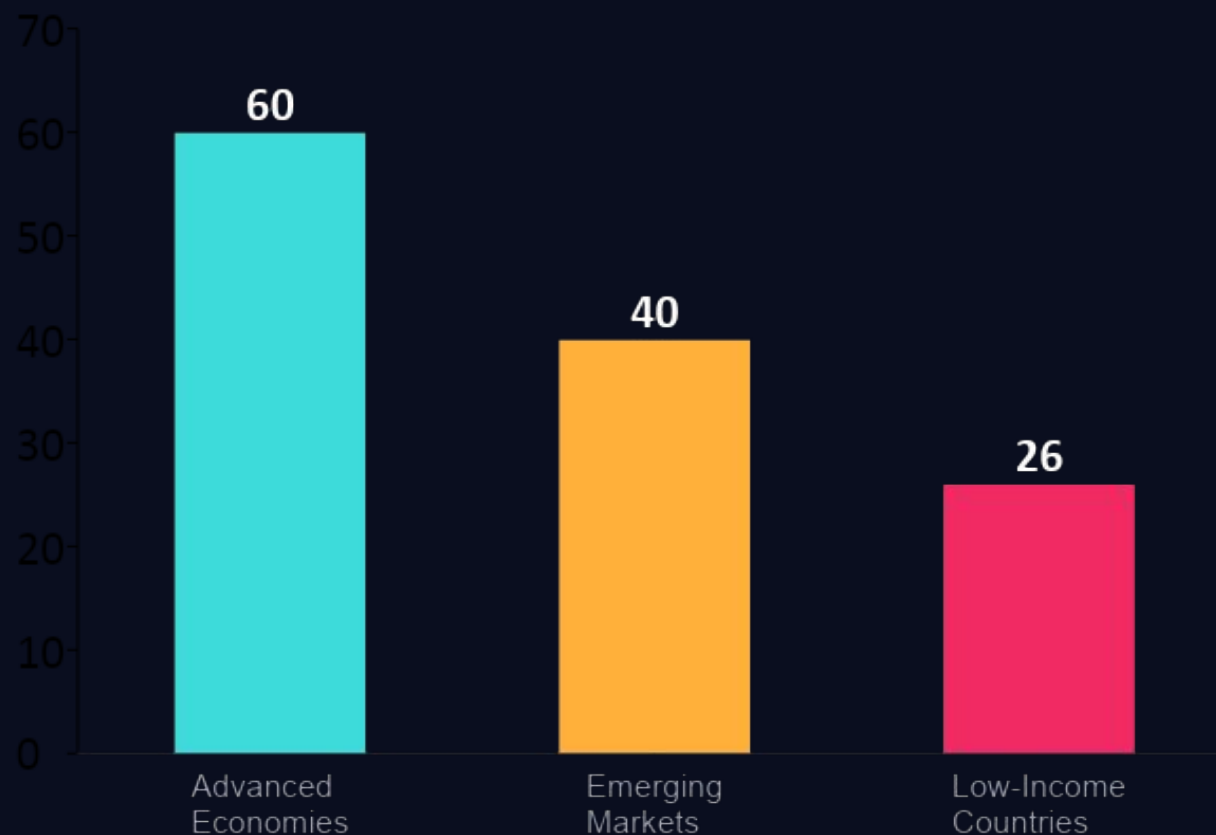


What this really means

- ✗ This is task transformation, not mass replacement – automation and augmentation together
- ✗ 170M new jobs still require new skill combinations – not a free pass to stand still
- ✗ The +78M net gain hides a 39% skills-disruption rate underneath it
- ✗ AI & big data rank among the fastest-growing skill categories in the same WEF survey

Exposure Isn't Equal — and That's the Point for Tajikistan

IMF, 2024 — share of employment exposed to AI, by income tier



The development trap

- ✗ Lower exposure isn't safety — it also means less access to AI's productivity upside
- ✗ UNCTAD (2025): AI capability, investment and benefit are highly concentrated globally
- ✗ For countries like Tajikistan, the challenge is building skills, infrastructure and institutions deliberately — or the gap widens on its own

What AI Is Changing Inside the Classroom

Traditional emphasis	AI-era shift	Why
Knowledge recall	Evaluation & application	AI retrieves/generates instantly; students must judge quality
Uniform instruction	Adaptive, personalized support	AI can vary explanations, examples and practice
Teacher as information source	Teacher as designer & mentor	Human judgment matters more when content is instant
Final-answer assessment	Process & authentic performance	AI produces polished answers — take-home work is less reliable
Digital literacy	AI + data + information literacy	Learners must judge outputs, data, bias, privacy
Individual production only	Responsible human–AI collaboration	Workplaces increasingly expect productive AI use
Fixed curriculum cycles	Continuous skills updating	Labor-market skill needs change faster than curricula

Nine Organizations, One Converging Signal

IMF

-40% job exposure globally, -60% in advanced economies

ILO / NASK

1 in 4 workers in GenAI-exposed roles; transformation over replacement

UNCTAD

AI market -\$4.8T by 2033; warns of concentration & development gaps

World Economic Forum

170M created / 92M displaced / +78M net by 2030; 39% skills disrupted

UNESCO

Human-centered guidance: protect agency, inclusion, privacy, safety

OECD

Focus on effective pedagogical use, not adoption for its own sake

Deloitte

Workforce capability & governance — not tools — drive AI value

PwC

56% wage premium for AI skills; faster skill change in exposed jobs

McKinsey

\$2.6–4.4T potential annual value from GenAI use cases

What This Means for Education Policy

Policy area	Recommended response
Curriculum	Age-appropriate AI literacy, data literacy, verification, ethics, applied problem solving
Teachers	Structured AI professional development on pedagogy, assessment, responsible use
Assessment	More authentic, oral, project-based and process-oriented assessment
TVET	Update occupational standards more frequently using labor-market evidence
Higher education	Embed AI competencies across all disciplines, not only computer science
Career guidance	Explain task transformation, not simple job disappearance
Lifelong learning	Short, modular upskilling and micro-credential pathways
Governance	Protect privacy, academic integrity, inclusion and human oversight

Strong Foundations. No AI Strategy Yet.

What the National Development Strategy to 2030 and the Communications Sector Strategy to 2040 actually commit to.



NDS2030: Human Capital First, AI Absent

- ✗ Human capital ranks above natural resources as Tajikistan's top development priority
- ✗ Innovation sits at the center of the long-term development model
- ✗ Universal school broadband and computer equipment are already national commitments
- ✗ Education is pushed toward competencies and innovative thinking, not just knowledge recall
- ✗ No AI-specific institutions, regulation, curriculum or labor-market measures exist in the document

35–40%

of specialists' skills do not meet labor-market requirements

NDS2030, 2016

115,000/yr

people targeted for retraining programs under the Strategy

NDS2030, 2016

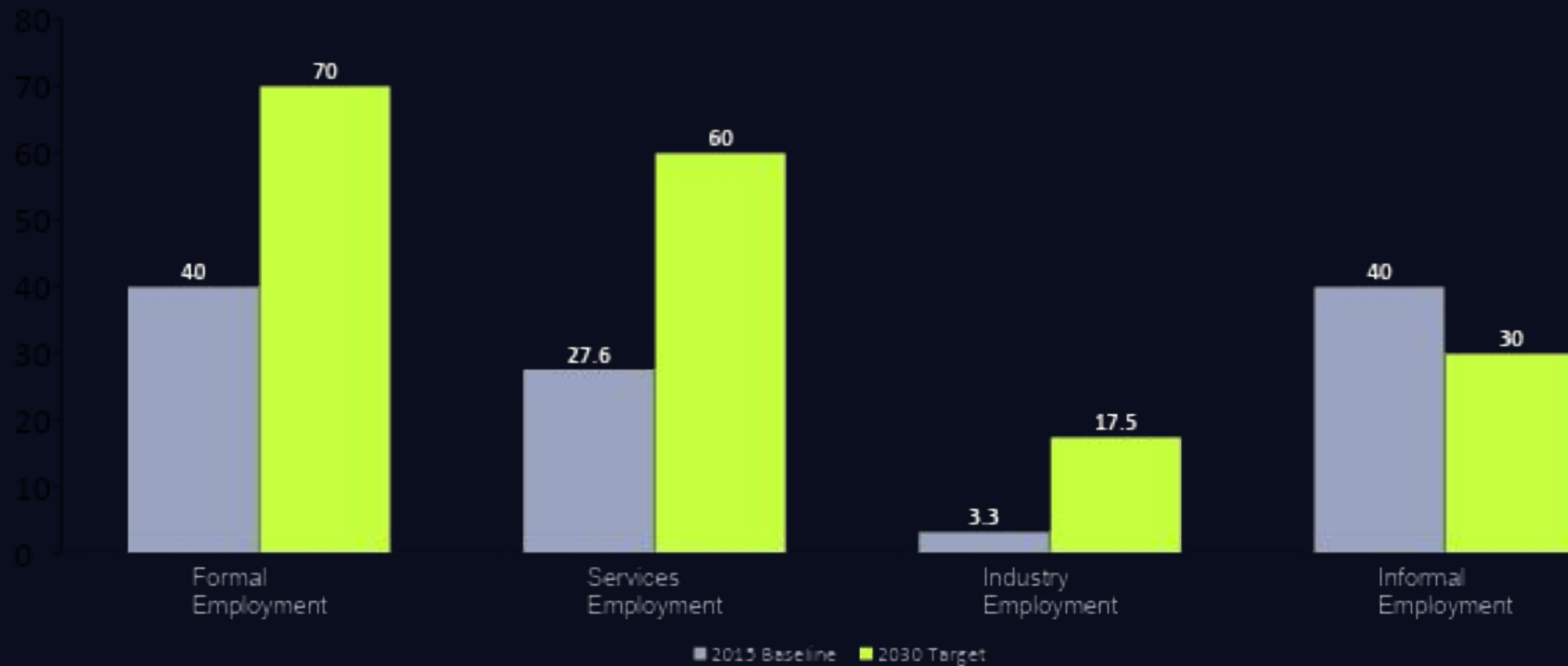
50th

target global rank for human-capital development by 2030

NDS2030, 2016

The Labor-Market Shift

Share of employment, baseline vs. 2030 target — National Development Strategy to 2030



Four Gaps, One Integrated Response Needed

Communications Sector Strategy to 2040 – key conclusion for AI capacity building

1

Early-stage adoption

AI, IoT and cloud remain underdeveloped across the economy

2

Skills shortfall

35–40% of specialists' skills already miss labor-market needs

3

Specialist shortage

Too few engineers, data analysts and cybersecurity professionals

4

Infrastructure gaps

Connectivity, devices and digital services still need investment

None of this should be built as a stand-alone technology project. Tajikistan's own strategies already call for integrating AI into existing education and labor-market modernization – the question is how. Estonia and the UAE offer two proven, very different answers.

What Capacity-Building Can Get Wrong — Globally

The upside is real

- ✓ Tutoring, feedback, differentiated materials, accessibility, teacher productivity
- ✓ Reduced time on routine preparation and content adaptation
- ✓ New adaptive support that a uniform classroom can't offer

But it cuts both ways

- ✗ Unrestricted answer-generation can erode the productive struggle learning depends on
- ✗ New teacher workload: verifying outputs, redesigning assessment, managing misuse
- ✗ Conventional take-home assessment becomes far less reliable
- ✗ No governance = no protection for privacy, integrity, inclusion or human oversight

What Capacity-Building Can Get Wrong — In Tajikistan

- **Infrastructure gap**
Rural and mountain-district connectivity lags far behind Dushanbe and other urban centers.
- **Equity risk**
Women and rural populations already face larger skills and employment gaps — AI could widen them.
- **Teacher readiness**
Digital and AI competencies are not yet embedded in teacher training or certification.
- **Assessment integrity**
Unrestricted AI use can quietly erode the productive struggle learning depends on.
- **Language barrier**
Most AI tools and resources are English-first; Tajik-language content barely exists.
- **Governance gap**
No privacy, procurement or responsible-use rules yet exist for AI in Tajik classrooms.

03 — CASE STUDY

Estonia: The Sequencing Model

Thirty years of digital foundations before a single AI initiative. What Tajikistan can copy — and what it can skip.



Three Decades Before the ‘AI Leap’

Estonia never started with AI. It built connectivity, digital identity, school platforms and computational-thinking curricula first – AI is simply the newest layer on top.



Building Capacity Before Building Curriculum

The teacher-capacity ladder

1

Digital Teacher

Baseline: platforms, digital content, online assessment

2

AI-Literate Teacher

Understands generative AI, evaluates outputs

3

AI Teaching Practitioner

Integrates AI into pedagogy and assessment

4

AI Master Teacher

Trains peers, coaches pilots, evaluates evidence

AI Leap 2025 – the first targeted cohort

20,000

students in the first AI Leap phase (upper-secondary, from 2025)

3,000

teachers trained and supported for the same cohort

Reach and adoption are not the same as impact – measure them separately.

The Nine-Step Blueprint for Tajikistan

1

Readiness assessment

Classify every school by connectivity, devices, teacher and leadership readiness

2

National data architecture

Common IDs, data standards, interoperability and privacy rules before any AI buy

3

Digital-competence standards

Minimum standards for teachers, leaders and students, safety to computational thinking

4

Tiered teacher capacity

Digital → AI-Literate → Practitioner → Master Teacher pathway

5

Diverse pilot schools

25–40 schools across Dushanbe, other cities, rural and remote districts

6

Stable learning environment

Reliable accounts and content access before layering AI on top

7

Controlled AI service layer

Approved tools, age-appropriate permissions, human oversight

8

Tajik-language AI resources

Terminology, datasets and teacher guides as a strategic capability

9

Measure before scaling

Track time saved, learning gains, adoption, equity, safety, cost

Indicators to Track — and the One-Line Lesson

Indicator	What it measures	Illustrative target
Schools assessed for AI readiness	System baseline and equity	100%
Teachers meeting digital standard	Foundation for AI adoption	Progressive coverage
Master AI teachers	Internal training capacity	150–250 initially
AI pilot schools	Controlled experimentation	25–40 initially
Pilots with outcome evaluation	Evidence before scale	100% of pilots

Reach ≠ Adoption ≠ Competency ≠ Outcomes. Measure all four before Tajikistan scales anything nationally.

04 — CASE STUDY

UAE: The Curriculum Model

No thirty-year runway — just a national vision translated straight into every classroom, K through 12.



From National Vision to Every Classroom

The UAE took the opposite path from Estonia: AI tied directly to national economic-diversification and future-workforce strategy, then rolled into every government school at once.

2025–26

AI education launches across ALL government schools, Kindergarten through Grade 12

602 participants

in the 2026 UAE K-12 study behind a 'train teachers before rollout' principle

Five competency domains, from day one

1

Technical

AI, data, algorithms — prevents the 'black box' problem

2

Practical

Using AI appropriately for learning and problem solving

3

Critical

Verification, hallucinations, bias, misinformation

4

Ethical

Privacy, fairness, responsibility, academic integrity

5

Innovation

Real-world projects tied to national priorities

Age-Progressive Curriculum, Adapted for Tajikistan

School stage	Focus	Learning outcomes
Grades 1–4	AI awareness & digital safety	Recognize common AI; understand AI can make mistakes; protect personal information
Grades 5–7	AI literacy	Explain data/algorithms; identify generative AI; verify outputs; understand bias
Grades 8–9	Applied AI	Use AI for structured research, data tasks, coding, local problem-solving projects
Grades 10–11	Advanced / career pathways	Python, data science, machine learning, generative AI, ethics, entrepreneurship

Adapted, not copied: embed AI into existing subjects first (ICT, math, languages, science) rather than mandating a new subject in every grade at once.

The Ten-Step Blueprint for Tajikistan

1

National competency framework

Define outcomes at the end of Grades 4, 7, 9 and 11

2

Curriculum Task Force

Cross-sector group defines outcomes before choosing tools

3

Integrate into existing subjects

Embed AI into ICT, math, languages, science, civics first

4

Age-appropriate modules

Distinct modules per grade band, each with clear outcomes

5

Prepare teachers first

Train pilot teachers and master trainers before students

6

Localize into Tajik

Terminology, workbooks, teacher manuals, local case studies

7

Pilot in diverse schools

20–30 schools across urban, rural and remote contexts

8

Assess competency, not exposure

Practical tasks and performance assessment, not just access

9

Tie to national priorities

Agriculture, water, energy, public administration, entrepreneurship

10

Scale after evidence review

Revise, expand, certify teachers, update as risks evolve

Indicators to Track — and the One-Line Lesson

Indicator	Purpose	Illustrative target
National student AI-competency framework	Defines learning progression	Completed before scale
Pilot teachers trained and assessed	Implementation readiness	200–300 initially
Pilot schools	Curriculum testing	20–30 initially
Students meeting AI-literacy standard	Actual learning	Measured by grade
Responsible-AI school guidance	Safety and integrity	National policy issued

Curriculum reform fails if teachers face unfamiliar AI concepts unprepared. Train before rollout — every time, without exception.

05 — SYNTHESIS

The Action Plan for Tajikistan

Estonia's sequencing, combined with the UAE's curriculum logic — built into one national roadmap.



Comparative Framework: Two Models, One Response

Policy question	Estonia lesson	UAE lesson	Tajikistan response
What comes first?	Digital foundations & interoperability	National vision & curriculum framework	Readiness assessment + architecture + competency framework
How should AI enter schools?	Phased adoption after digital readiness	Age-progressive curriculum	Pilot curriculum and tools in ready schools
What should teachers receive?	Long-term digital/AI capacity development	Curriculum-specific preparation	Tiered certification + curriculum training
How should systems scale?	Interoperable platforms, controlled rollout	Government coordination, systemwide standards	Common platform/standards + staged expansion
How is success measured?	Readiness, adoption, system capability	Student competency, institutional readiness	Reach + competence + outcomes + equity

A Four-Phase Roadmap for Tajikistan

1

Foundation

Readiness assessment, data architecture, responsible-AI policy, competency frameworks → national baseline & standards

2

Capacity & Design

Master trainers, teacher certification, curriculum modules, Tajik-language resources → people & materials ready

3

Pilot & Evaluate

20–40 diverse pilot schools, limited use cases, outcome evaluation → evidence on what works

4

Scale & Institutionalize

Platform integration, national curriculum rollout, regional support → sustainable national program

Dates are illustrative and should be aligned with Tajikistan's national planning cycle and budget process — roughly a four-year sequence.

Who Runs It, and How Success Is Measured

Governance structure

- ✕ National AI in Education Council — strategy & oversight
- ✕ AI Education Technical Unit — architecture, procurement, monitoring
- ✕ AI Curriculum Task Force — competencies, modules, assessment
- ✕ University AI Education Hubs — teacher training, local-language AI
- ✕ Regional Master Teacher Network — coaching & school support

Monitoring & evaluation

Level	Example indicator
Input	Teachers enrolled; schools with connectivity/devices
Output	Teachers completing training; modules delivered
Competency	Teachers/students passing AI-literacy assessments
Adoption	% of trained teachers using AI meaningfully after 3–6 months
Outcome	Learning gains, time savings, improved access/inclusion
System effect	Reduced urban–rural gap; sustainable support capacity

Five Things Tajikistan Should Not Do

1

Procure before you plan

Large-scale AI procurement before architecture & governance are defined

2

Count instead of measure

Success judged by devices or licenses, not learning outcomes

3

Curriculum before teachers

Rolling out curriculum before teachers are trained and supported

4

Assume English is enough

Assuming English-language AI tools will serve Tajik classrooms

5

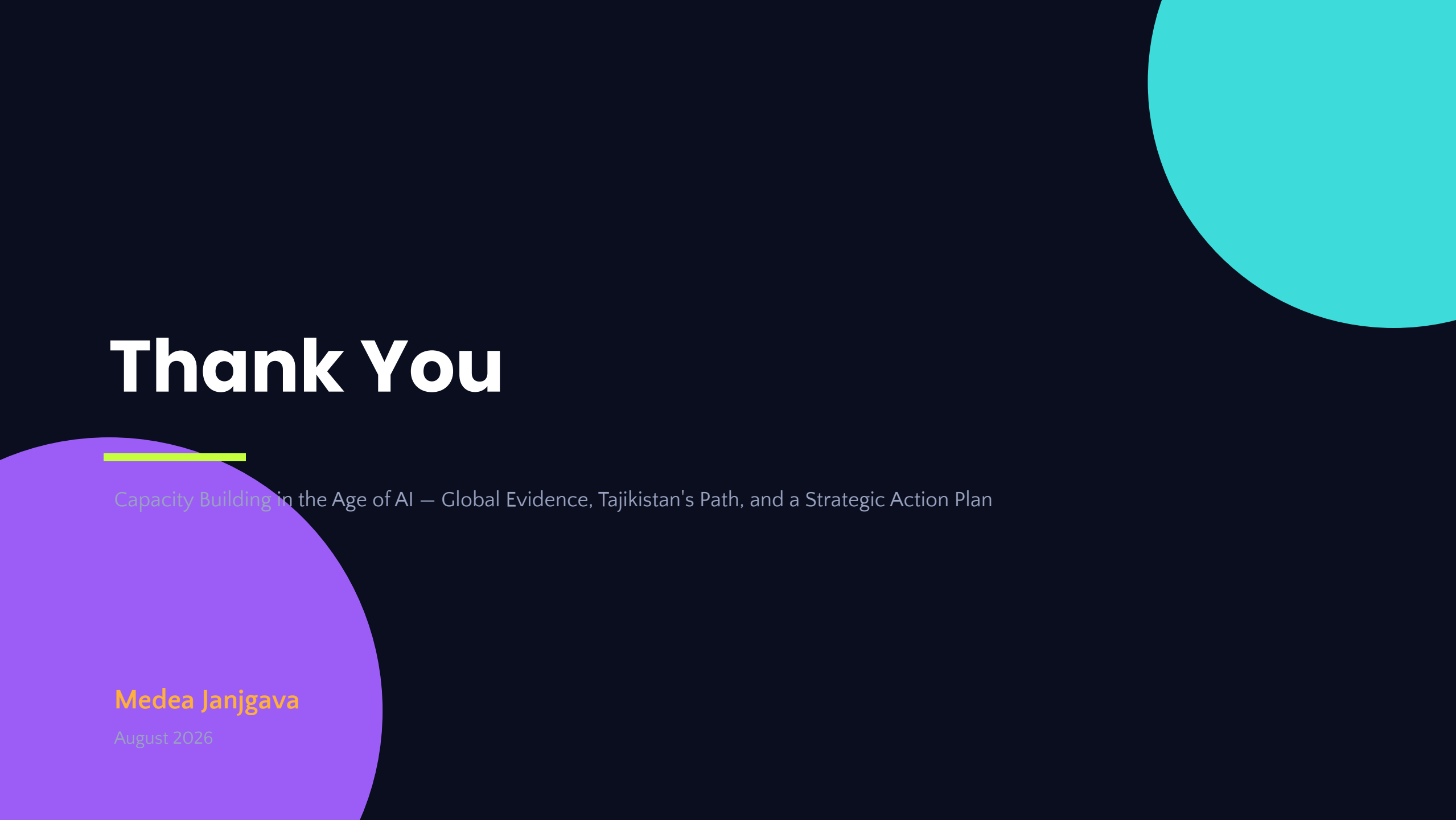
Scale on popularity

Expanding a pilot without evidence of impact, only enthusiasm

Where This Is Heading

- ✗ AI literacy is moving from a specialist skill to a core employability skill — fast, globally
- ✗ Tajikistan already has the policy foundations; the execution gap only closes if sequencing is respected
- ✗ Estonia and the UAE show the same pattern from opposite starting points: infrastructure and governance, paired with curriculum design, is what makes adoption fast and safe
- ✗ The next decade's labor-market winners will be education systems that treat AI as human-capital strategy, not a one-off IT rollout

The countries that treat AI capacity-building as human-capital strategy — not IT procurement — will define the next decade of education and labor-market competitiveness.



Thank You

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August 2026