Scaling AI in education.

A practical guide to secure deployment across your institution.

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AI is creating new possibilities across education.

From teaching and research to administration, facilities and student support, institutions are exploring where AI can help people work smarter, make faster decisions and create better experiences.

Moving from early ideas and pilots to measurable impact is where many are getting stuck.

Promising use cases can lack clear ownership, tangible outcomes or a business case, while cloud tools can become harder to justify as costs rise and sensitive data comes into play.

That’s why successful AI deployment needs more than technology. It needs a clear way to choose the right opportunities, prove their value and build a roadmap that can be delivered securely.

This guide shows how to move from AI ideas to a practical deployment plan, one step at a time.



Step 1

Identify the opportunity.

AI works best when it starts with a real challenge or need.

Before choosing tools or platforms, look across your entire institution and ask where there's potential for AI to make things easier, faster or more effective.

Administration

Scheduling, IT operations, budgeting, student information systems, cybersecurity support and other everyday processes that take time away from higher-value work.

Academics and research

Lesson planning, grading and feedback, assessment creation, accessibility, research analysis, virtual teaching assistants and student success insights.

Facilities and operations

Connected campus management, safety monitoring, facilities management, energy efficiency and real-time alerts.

Student life

Enrollment support, student helpdesks, retention and alumni engagement, housing, dining, events, parking and automated checkout.



Start with the challenge, not the tool.

The strongest AI opportunities are usually tied to familiar challenges:

- Teams are stretched.
- Data sits in different places.
- Systems are hard to connect.
- Skills and capacity are limited.
- Security and compliance requirements are complex.
- Ownership is unclear.
- Pilots struggle to move beyond one team, department or use case.

At this stage, the aim isn't to solve everything, but to build a focused list of AI opportunities grounded in real education needs. Once you know where AI could create value, the next step is to decide which opportunities are strong enough to develop.

Step 2

Prove the value.

Not every AI opportunity should move straight to pilot stage.

Some use cases may sound promising but still need a clearer outcome. Others may depend on data that is not ready, budget that has not been confirmed or sponsorship that is not yet in place.

This step helps you decide whether an opportunity is ready to act on.

What makes a viable AI use case?

A strong use case should be easy to explain and possible to measure. Before moving forward, it should be able to answer seven questions:

- What problem are we solving?
- Who benefits?
- What outcome are we trying to achieve?
- What KPI will measure success?
- Who is the executive sponsor or AI champion?
- Is there budget, or a route to funding?

If these questions are difficult to answer, the use case may need more work before it is ready to become a pilot. That shouldn't be seen as a setback, it's a useful signal. It helps avoid pilots that create interest, but not enough evidence to justify wider investment.



Step 2

Prove the value.
continued

Build the value case early.

A use case is easier to scale when the value is defined before work begins.

That means agreeing:

- the KPI that will show whether the project worked
- the level of ROI or value needed to justify investment
- the data required
- the sponsor who can support progress
- the AI champion drives adoption
- the budget or funding path
- the reason to act now

This gives everyone a clearer view of what success looks like.

Think about time to value.

Some use cases can deliver value quickly because a proven solution already exists, while others may need integration, governance, data preparation or custom development first.

Thinking about time to value early helps you set realistic expectations before deciding whether to buy, build or blend.



Step 3

Prioritize the right use cases.



Once you've assessed the value of each use case, the next step is deciding which to take forward.

This is where you need to weigh value against complexity and consider the best route to delivery. Some use cases may be strong candidates for a quick pilot, and some may need more planning, budget, governance or infrastructure before they can scale.

The aim is to invest time and budget where it can create the greatest measurable impact.

Compare value and complexity.

A simple prioritization map can help you decide what to progress, what to phase and what to pause.

High value/low complexity.

Move first. These are good candidates for quick wins or focused pilots.

High value/high complexity.

Plan carefully. These may still be important, but they may need more governance, infrastructure or a phased roadmap.

Low value/low complexity.

Consider selectively. These may be useful but should not take focus away from higher-value work.

Low value/high complexity.

Pause or deprioritize.

Step 3

Prioritize the right use cases.

continued

Decide whether to buy, build or blend.

Buy

Use an existing solution when the need is common, speed is important and your institution doesn't need heavy customization. This is a good fit for proven tools, ISV solutions or packaged AI capabilities.

Build

Create something customized when the use case is specific, differentiated or tied to unique data, research or workflows. This can be a better fit, but usually requires more time, skills, infrastructure and governance.

Blend

Combine existing tools, partner solutions, integration and customized elements. This can be a practical middle ground when your institution needs both speed and a good fit.

Once you know what to take forward and how you plan to deliver it, you can start building the roadmap around the right foundations, services and support.



Step 4

Build your roadmap to scale.

Once you've chosen the right use cases, you can start planning what it will take to deploy and scale them.

This is where readiness, security, deployment models, devices, infrastructure, services and support come together. The goal is to turn prioritized use cases into a practical roadmap your teams can act on.

Assess AI readiness

Your readiness assessment should help decide what to do next, not just tick boxes. A useful diagnostic looks at:

- Data governance and classification
- Data availability and quality
- Security and compliance requirements
- Infrastructure maturity
- Skills and internal capacity
- Integration needs
- Budget and funding status
- Long term cost sustainability

The outcome of this can help place each use case into one of three paths:



Low maturity: prepare first

If data, governance, skills, sponsorship or infrastructure are not ready, it may be better to pause deployment and start with advisory, data readiness and roadmap planning.

Lenovo AI Discover and AI Advisory can help assess where you are and define a practical path forward.



Medium maturity: pilot with constraints

If the use case is promising but some foundations still need work, a controlled pilot may be the right next step. This means keeping the scope focused, setting clear success criteria, defining governance and agreeing how value will be measured against the likely costs of scaling the use case beyond the pilot.

Lenovo AI Fast Start and AI Implementation Services can help support proof of concept, testing and integration.



High maturity: scale with confidence

If the use case is well-defined, the data is available, governance is clear, the foundation is ready and the long-term cost model is understood, you may be ready to move into deployment and scale.

Lenovo AI Deploy & Scale, AI Managed and TruScale can help support rollout, optimization and lifecycle management.

Step 4

Build your roadmap to scale.

continued

Build in security and governance.

Security isn't a separate workstream to think about later. It needs to match the use case, the data and the deployment model.

That means understanding:

- What data is being used
- Where that data lives
- Who needs access
- Infrastructure maturity
- What policies apply
- What risks need to be managed

This is especially important for student data, staff data, research data, intellectual property and institutional systems.

Lenovo ThinkShield and Intel security technologies can help support protection across devices, infrastructure, data and workloads. If security foundations are still being reviewed, **Lenovo's Security Stack Checklist** can help identify what needs strengthening before AI scales.



Choose the right deployment model.

Not every AI workload belongs in the same place. Some can run close to the user, some need to run closer to the data, some will benefit from cloud flexibility. Many will require a hybrid approach.

This is where data gravity is critical. Sensitive or valuable data doesn't always need to move to the processing environment. In some cases, AI should be brought to where the data already lives.

Here's a quick guide to which workload should live where:

On device: For personal productivity and low-latency user experiences.

Edge: For local, real-time or smart campus use cases.

On premises: For sensitive, regulated or research-heavy workloads.

Cloud: For appropriate public, flexible or less sensitive use cases.

Hybrid: For balancing control, cost, performance, security and scale.

Step 4

Build your roadmap to scale.

continued

Validate the economies at scale.

Cost considerations should begin during readiness assessment and continue throughout deployment planning.

Cloud AI costs can rise as usage and token consumption grow. A use case that appears manageable during a small pilot may look very different when it is deployed across departments, campuses or large user groups.

Institutions should model costs over time, including cloud consumption, infrastructure, management, support and future scaling requirements. For sustained or high-volume workloads, on-premises or hybrid approaches may offer greater predictability and long-term cost control.

Power AI where it happens

The aim isn't to start with products, but to start with the workload, the data, the security and governance requirements, the expected cost profile and the desired outcome—then choose the right Lenovo and Intel-powered foundation to support it.



If the use case involves...	Then the foundation may need...
Educator, faculty or staff productivity, content creation, lesson planning or day-to-day AI assistance	AI PCs powered by Intel® that bring AI performance closer to the user
Labs, libraries, shared learning spaces or administration environments	Desktops or AIOs that support reliable, managed access
Research, analytics, simulation or intensive AI development	Workstations or high-performance computing resources
Smart campus, facilities, safety, energy management or real-time alerts	Edge devices that process data closer to where it is created
Sensitive data, large datasets, AI training or private model deployment	On-premises infrastructure such as servers, storage or integrated systems
Use cases that need a mix of control, flexibility, performance and scale	Hybrid AI across device, edge, on-premises and cloud environments

Step 4

Build your roadmap to scale.

continued

Lenovo and Intel can help you connect the right technology foundation to the use case, workload and deployment model:

- Lenovo AI PCs can support day-to-day AI productivity for educators, faculty and staff.
- ThinkStation workstations and Lenovo infrastructure can support more intensive research, analytics and AI development.
- ThinkEdge devices can help bring AI closer to real-time campus data for smart campus, facilities and safety use cases.

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Bring the roadmap together.

The strongest AI opportunities are usually tied to familiar challenges:

- Prioritized use cases.
- Readiness level
- Deployment model.
- Security requirements.
- Technology foundation.
- Cost model and scaling assumptions.
- Service and support needs.
- Timeline
- KPIs and ROI tracking

With that in place, you'll have a clearer route from idea to pilot, and from pilot to scale.

Your four-step AI deployment path.

Scaling AI isn't just moving from pilot to rollout. It depends on choosing the right opportunities, proving value, prioritizing investment and building a roadmap that connects data, security, infrastructure and outcomes.

Here's how each step helps you move AI from idea to deployment.

Step 1

Identify the opportunity—key decision.

Where can AI create value?

Output.

A list of AI opportunities, grouped by area and linked to the challenges they could help solve.

How Lenovo helps.

We can work with your team to explore use cases across learning, research, operations and administration, and connect them to real education needs.

Step 2

Prove the value—key decision.

Which opportunities are worth pursuing?

Output.

A shortlist of viable use cases, each with a clear outcome, KPI, expected value, data requirement, sponsor, budget status and time-to-value view.

How Lenovo helps.

With Lenovo, you can test the value, feasibility and ROI potential of each use case, so your team has a clearer case for what should progress.

Step 3

Prioritize the right use cases—key decision.

Which use cases should move forward, and buy, build or blend?

Output.

A prioritized use case portfolio that shows what to move first, what to phase, what to pause and the best delivery route for each use case.

Where Lenovo fits.

We help you compare complexity, architecture choices, ISV options and deployment implications, so each use case has a practical route to delivery.

Step 4

Build your roadmap to scale—key decision.

Which opportunities are worth pursuing?

Output.

What needs to be in place to deploy and scale securely?

How Lenovo fits.

We facilitate an AI Roadmap workshop that connects you to the right services, solutions, Intel-powered devices and infrastructure to support deployment and scale.

Ready to build your AI roadmap?

Lenovo and Intel can help you identify AI opportunities, assess value, prioritize use cases and build a roadmap your institution can put into action. That's the power of Lenovo with Intel Inside®.

Get started

Need to review your security foundations first?

Read the Security Stack Checklist

Download

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Smarter technology for all

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