

AI for Public Sector:

Lessons & Guidelines

Acknowledgement

This report and the training programs it documents were made possible by the Government of Pakistan's *National Artificial Intelligence Policy 2025*. Approved by the Federal Cabinet in July 2025, the Policy set out an ambitious agenda to build national AI capability, including within the public sector. The Ministry of Information Technology and Telecommunication (MoITT) championed that agenda and recognized early that an AI-ready state begins with AI-ready civil servants.

atomcamp is proud to have partnered with MoITT to initiate this upskilling program, which delivered tiered AI training to officers across the civil service spectrum, from the Common Training Program to the National Management Course.

We are deeply grateful to the Federal Minister for IT and Telecommunication, **Ms. Shaza Fatima Khawaja**, whose vision and personal support helped carry this initiative from concept to delivery. We also thank the leadership of MoITT, who steered the program at every stage: **Mr. Zarrar Hasham Khan**, Secretary (IT & Telecom); **Mr. Syed Muhammad Ammar Naqvi**, Special Secretary (IT & Telecom), and **Mr. Asfand Yar Khan**, Member (Digital & Emerging Technology).

Our sincere thanks go to **Mr. Farhan Aziz Khawaja**, Rector of the National School of Public Policy; **Dr. Syed Shabbir Akbar Zaidi**, Director CTP, Civil Services Academy, Lahore; **Mr. Asim Iqbal**, DG NIPA Islamabad; and the Faculty and Management of the Pakistan Administrative Staff College for their leadership in facilitating the program across Pakistan's premier civil service training institutions and for the trust they placed in it.

Finally, we thank the participating officers. Their engagement, candor, and willingness to test ideas in real time shaped the lessons captured in this report.

Abbreviations

CSA	Civil Services Academy
CTP	Common Training Programme
DL	Deep Learning
FPSC	Federal Public Service Commission
LLM	Large Language Model
MCMC	Mid-Career Management Course
ML	Machine Learning
MoITT	Ministry of Information Technology and Telecommunication
NIM	National Institute of Management
NMC	National Management Course
NSPP	National School of Public Policy
PAS	Pakistan Administrative Service
RAG	Retrieval-Augmented Generation
SMC	Senior Management Course
STP	Specialized Training Programme
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNEVOC	UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training

Executive Summary

Artificial intelligence is increasingly shaping how governments analyze information, manage processes and deliver public services. However, developing AI capability within the public sector requires more than introducing officers to AI tools. It requires building the knowledge, skills and judgment needed to apply AI responsibly, evaluate its limitations and support informed institutional decision-making.

This report presents a framework for designing AI capacity-building programs for civil servants in Pakistan. It examines global approaches to public-sector AI capability development, insights from AI training initiatives by atomcamp with Pakistani civil servants, career-stage competency requirements, pedagogical approaches, and evaluation frameworks. The framework proposes that AI capability should evolve across the civil-service career pathway, from foundational AI literacy and application to implementation, governance, and strategic leadership.

The framework draws on five practical training interventions conducted with civil servants at different career stages: the 54th Common Training Program (CTP), STP, MCMC, SMC, and NMC. AI experts and trainers worked directly with these officers through these trainings, delivering practical learning activities, observing participant engagement and challenges, and evaluating aspects of the training. Insights from these interventions provide a practical basis for understanding how to design and adapt AI capacity building to the Pakistani civil service context.

The report also incorporates pedagogical frameworks for adult professional learning, providing a structured basis for designing AI training relevant to officers' roles and responsibilities. These frameworks align with career-stage competencies, practical learning, and workplace application, ensuring that training focuses on what officers need to understand, demonstrate, and apply in their professional roles.

The report is intended for civil-service academies, government officials, policymakers, public-sector leaders, AI trainers and experts, researchers, and education and training providers involved in developing AI capability within government. It is intended to serve as a guide for designing future AI training programs, informing public-sector capacity-building policy, and supporting further research on effective approaches to developing an AI-ready civil service in Pakistan.

Introduction

Artificial intelligence is reshaping knowledge work and changing how organizations generate, process, and use information. Generative AI systems can support activities such as information retrieval, drafting, analysis, coding, translation and workflow automation, while more advanced systems can connect with organizational data and tools to support complex processes. For governments, these developments create opportunities to improve administrative efficiency, decision-making, and public service delivery, but also raise important concerns about accuracy, accountability, privacy, security, transparency, bias, and human oversight.

The implications of AI adoption in government differ significantly from consumer use. An officer using AI to draft a document operates in a different risk environment from an institution using AI for case prioritization, citizen data processing, healthcare decisions or analysis of sensitive records. Therefore, public-sector AI capability must extend beyond tool familiarity to include the judgment required to identify appropriate use cases, protect information, evaluate outputs, and ensure human accountability remains central.

The relevant question is not simply *"Can an officer use AI?"*

It is: *"Can an officer determine whether AI is appropriate for a particular public-sector problem, use it effectively, recognize its limitations, protect the information involved, evaluate its outputs, and understand where human responsibility must remain?"*

This question grows more important as officers advance in their careers and take on more administrative and strategic roles. At the operational level, an officer might need to identify repetitive tasks that could benefit from AI analysis or workflow automation. At the management level, they may define AI use cases, assess data needs, prepare technical or procurement specifications, evaluate risks, and decide how to monitor AI-enabled processes. At senior levels, officers are responsible for approving projects, allocating resources, commissioning technology, overseeing vendors, establishing safeguards, and determining whether AI initiatives should be piloted, scaled up, modified, or discontinued. Consequently, their **AI skills should include organizational, governance, and strategic understanding, even if they do not personally write code or configure AI systems.**

This also means that AI training for civil servants cannot be treated as a single, uniform intervention. Officers enter training at different stages of their careers, with different professional responsibilities, prior exposure to digital technologies, and varying levels of familiarity with AI. More importantly, the nature of their work and decision-making responsibilities changes as they progress through the civil service. A foundational understanding of AI may therefore be appropriate across the service, but the competencies developed through training should become progressively differentiated by the officer's role. At an early career stage, the objective may be to develop responsible AI literacy and practical application, while later stages may require greater emphasis on workflow redesign, implementation,

procurement, governance, evaluation, and strategic leadership.

For Pakistan, this question is particularly relevant given the country's emerging national AI agenda and the growing need to translate policy ambitions into institutional capability. Public-sector AI adoption cannot depend solely on technical specialists within government. Technical teams may design, procure, deploy, and maintain systems, but officers responsible for policy, administration, and management will increasingly need sufficient understanding of AI to identify appropriate applications, communicate requirements, assess proposals, question technical assumptions, and exercise informed oversight. AI capability within government is therefore a shared institutional requirement, though the form that capability takes will differ across professional roles and levels of responsibility.

This report frames **AI capacity building as an education and institutional-development challenge rather than a mere technology procurement issue**. It examines how civil servants can be prepared to understand and engage with AI throughout their careers, and how training can move beyond short-term exposure toward demonstrable competencies and workplace application. The report considers Pakistan's existing civil-service training structure, evidence from AI training interventions with Pakistani civil servants, relevant international experience, educational and pedagogical approaches for adult professional learners, career-stage competencies, practical learning methods, assessment and evaluation, data security and responsible AI, and mechanisms for translating training into sustained institutional capability.

The purpose is not to prescribe a particular AI tool or a single training format. Rather, the aim is to establish a structured, evidence-informed framework for designing AI capacity-building programs for Pakistan's public sector. Such a framework should enable civil-service academies, government departments, researchers, policymakers, and training providers to determine what officers need to learn, why those competencies are relevant at different stages of their careers, how they can be developed through appropriate pedagogy and practical activities, and how learning can ultimately be evaluated through its application within government.

1. AI Capability in the Civil Service

The distinction between **AI literacy** and **AI capability** is fundamental to the proposed framework.

AI literacy concerns the ability to understand what AI is, what it can do, where its limitations lie, and how to use it responsibly. AI capability extends this understanding into action. It includes applying AI to appropriate tasks, evaluating its outputs, redesigning workflows, defining requirements for AI systems, managing risks, and deciding on institutional adoption.

Recent UK government work illustrates this broader conception. The UK Government's AI Skills Tools Package distinguishes AI skills across technical, responsible and ethical, and non-technical domains and maps them to different job levels. Its AI adoption pathway similarly recognizes that organizational

AI adoption develops through stages, and the skill requirements change as adoption progresses.

For the civil service, AI capability can therefore be conceptualized as the intersection of knowledge, practical skill, and professional judgment.

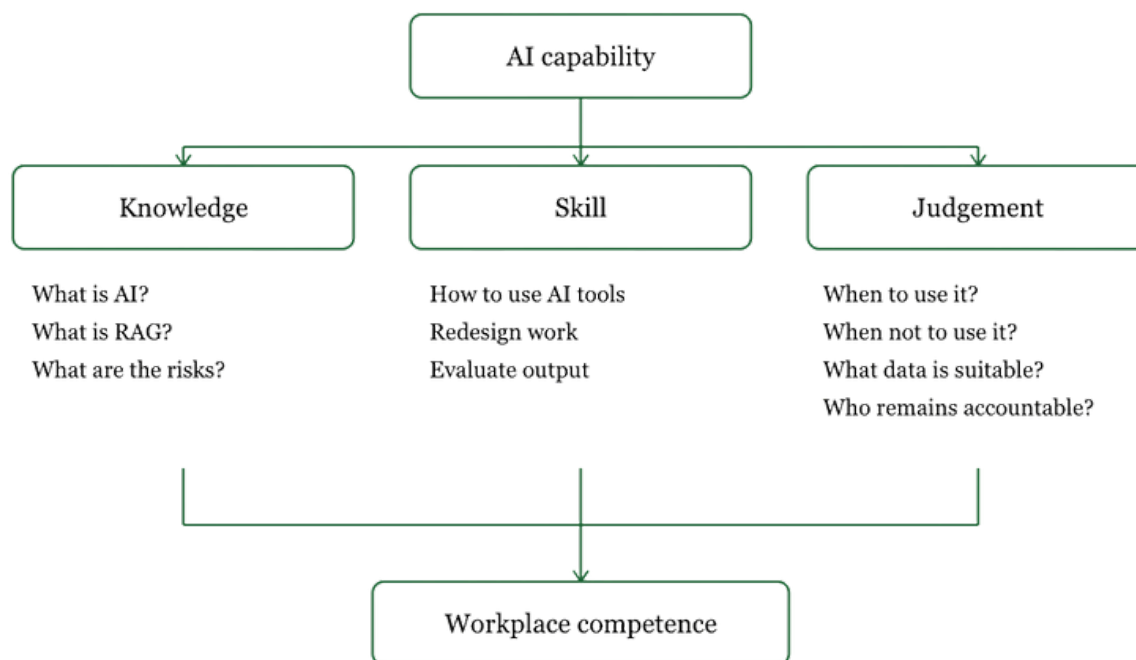


Fig 1.1

This distinction also explains why a curriculum organized primarily around software products is unlikely to remain useful over time. Tools change rapidly. **Competencies such as problem definition, critical evaluation, workflow analysis, responsible use, and strategic decision-making are more durable.**

1.1. Pakistan's Civil-Service Training Architecture

Pakistan already has an established career-long training architecture for civil servants. The Civil Services Academy (CSA) conducts the Common Training Program (CTP) for newly recruited probationary officers and the Specialized Training Program (STP) for Pakistan Administrative Service (PAS) probationers, with training emphasizing professional knowledge, skills, decision-making, practical learning, and public-sector problem-solving. The National School of Public Policy (NSPP) provides subsequent in-service management training through the MCMC for BS-18 officers, the SMC for BS-19 officers, and the NMC for BS-20 officers, progressing from tactical to operational and strategic responsibilities, with the NMC serving as a prerequisite for promotion to BS-21.

1.2. Why AI Capability Should Be Differentiated by Career Stage

Career-stage differentiation should not be confused with the assumption that senior officers are

necessarily less technically capable than junior officers. Individual experience with technology varies considerably. A BS-20 officer may have extensive technical experience, while a newly inducted officer may have very little exposure to AI beyond consumer applications. The justification for differentiation is therefore primarily **role-based**.

An early-career officer is more likely to benefit from developing individual AI productivity and problem-solving capabilities. At the STP level, AI can focus on applying foundational skills to department-specific functions, operational workflows, and practical public-sector problem-solving. An officer at the MCMC stage is increasingly concerned with managing processes, teams, and operational implementation. At the SMC level, the relevance of AI expands to organizational strategy, procurement, governance, and evaluation. At the NMC level, the focus can extend further toward institutional transformation, infrastructure, national capability, and strategic implications.

The progression can be represented as follows:

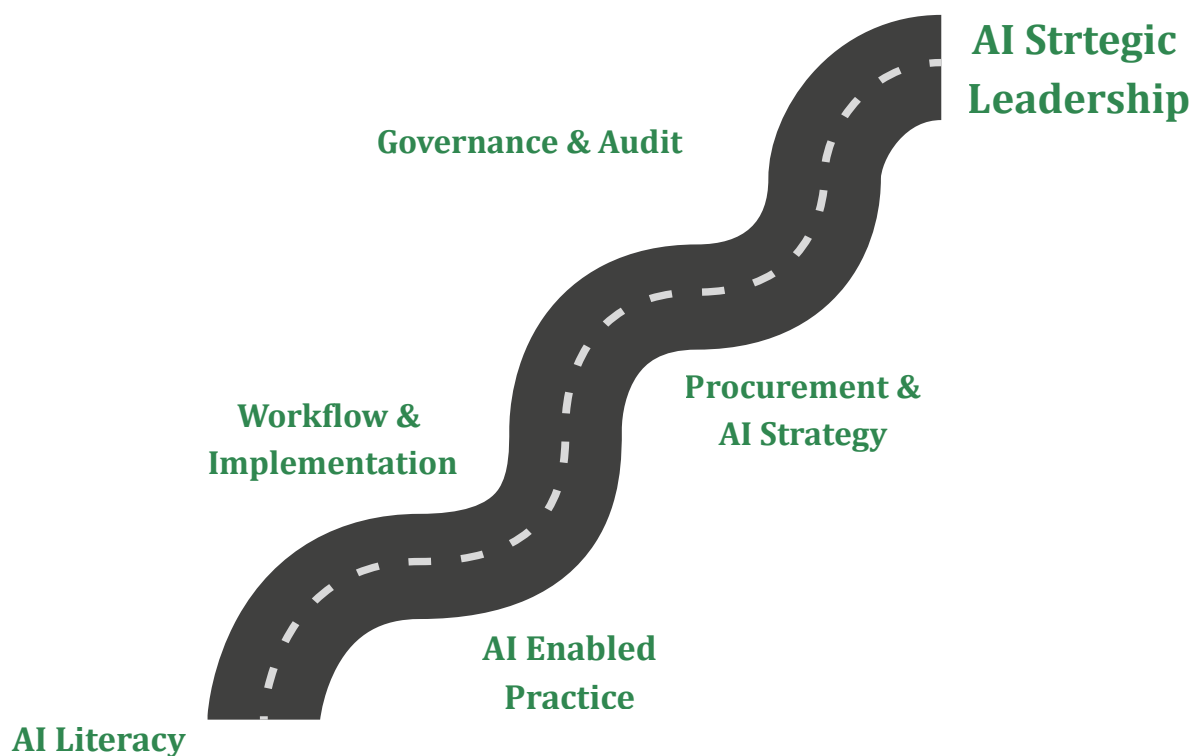


Fig 1.2

Therefore, progression does not strictly mean moving from less to more technical skills. Instead, at senior levels, **the complexity transitions from technical tasks to organizational, institutional, and strategic decision-making.**

1.3. Global Approaches to AI Capacity Building

Governments worldwide increasingly recognize that successful AI adoption requires more than technological infrastructure; it also requires building the knowledge, skills, and institutional

capabilities of the public workforce. As AI becomes integrated into public administration, countries are adopting diverse approaches to preparing civil servants, ranging from foundational AI literacy and responsible-use training to advanced capabilities in implementation, governance, and strategic leadership.

Singapore offers a particularly relevant example of role-sensitive, practical capability development. In September 2026, Singapore launched the Institute of Digital Government, established within the Civil Service College, with the stated objective of equipping more than 150,000 public officers with digital, data, and AI capabilities by the end of 2028.

Its learning architecture includes three pathways, **Aware 101, Apply 201, and Build 301**, designed for different levels of proficiency. The program also uses practical exercises and agency-level "AI Sprints" in which officers work on real workplace problems. Singapore has simultaneously emphasized mandatory foundational learning, cybersecurity, and data protection, and has developed learning communities and AI transformation champions.

The UAE has similarly pursued large-scale government capability development. Its Jahiz platform provides personalized, future-skills learning for government employees, including AI, cybersecurity, cloud computing, and data analytics. More recently, the UAE has established an Agentic AI capacity-building program that includes technical and training skills, government use cases, agent design, and governance. Its train-the-trainer program targets a network of 1,000 government trainers, while the broader program aims to build Agentic AI capabilities across 80,000 federal government employees.

The UK has developed a differentiated AI learning ecosystem for civil servants. Its current Government Skills program includes awareness, working, and practitioner-level AI learning, along with a dedicated senior civil service pathway. The UK Government's AI Playbook also links AI capability to safe, effective, and secure use, while its broader AI Skills research emphasizes technical, responsible/ethical, and non-technical skills across different job levels.

These examples highlight key principles for Pakistan: roles should define capabilities; practical experience should supplement theory; senior leaders need specific AI leadership skills; training should integrate responsible data use and protection; and learning should link directly to real workplace issues, not just end at the course level. Although these principles are applicable elsewhere, the curriculum must remain aligned with Pakistan's administrative setup, policy context, and institutional needs.

2. Evidence from AI Trainings by *atomcamp* for Civil Servants

While global examples offer useful insights into how governments approach AI capability development, the effectiveness of any training model depends largely on its alignment with local institutional contexts, participant profiles, and administrative realities. Understanding how Pakistani

civil servants engage with AI, therefore, requires examining practical capacity-building initiatives within Pakistan's public-sector environment. atomcamp's AI capacity-building initiatives with civil servants offer an opportunity to examine how AI learning evolves across different stages of administrative responsibility.

The training sessions covered five distinct cohorts: the 54th Common Training Program (CTP) and Specialized Training Program (STP) for early-career officers, MCMC and SMC participants representing mid- and senior-management levels, and NMC participants representing senior leadership. Together, these sessions provide insights into how civil servants at different career stages engage with AI concepts, practical exercises, public-sector use cases, and questions of implementation, governance, and strategy.

These trainings were designed on a common principle: **AI training for public servants should move beyond awareness and introduce participants to applying AI in real administrative contexts.** However, the emphasis and depth of learning varied according to the responsibilities of each cohort. While early-career officers engaged more extensively with AI tools and project development, senior officers increasingly focused on questions of institutional adoption, governance, infrastructure, and strategic decision-making.

2.1. CTP: Developing Foundational AI Capability Through Applied Learning

The CTP intervention focused on building foundational AI capabilities among newly inducted civil servants by combining conceptual understanding with extensive hands-on practice. Participants learned AI fundamentals, responsible AI, prompt engineering, Retrieval-Augmented Generation (RAG), workflow automation using Make.com and Google AI Studio, AI-assisted data cleaning, LangChain, Google Colab, and Gemini Gems.

The training approach combined demonstrations, guided exercises, collaborative activities, and project-based learning to help participants connect AI concepts to potential public-sector applications.

A key feature of the intervention was its emphasis on learning through public-sector problem-solving. Rather than limiting the program to demonstrations of AI tools, participants developed solutions to administrative challenges relevant to government operations.

The projects developed included:

- Out-of-School Student Monitoring System
- AI-Assisted Court Case Prioritization
- Zimni Order Management System
- Flood Risk Monitoring & Early Alert System
- Essential Medicine Stock Monitoring System

These projects demonstrate the value of real-life public-sector problems as learning tools. By working on problems in education, judicial administration, disaster management, and healthcare, participants moved through the full problem-solving process: identifying an administrative challenge, considering where AI could add value, understanding data requirements, and considering how a potential solution could operate within an institutional environment.

For example, the Essential Medicine Stock Monitoring System introduced participants to the concept of using data-driven monitoring and automated alerts to support healthcare administration. The proposed system monitored medicine availability and generated notifications when stock levels reached predefined thresholds. Similarly, the Flood Risk Monitoring and Early Alert System demonstrated how environmental data and predefined conditions could support timely alerts.

The importance of these projects lies not necessarily in their immediate deployability, but in their role as educational exercises. They allowed participants to understand that **AI adoption begins with identifying an appropriate problem, understanding available data, and designing a responsible intervention**. This suggests that early-career AI training should prioritize experimentation, problem identification, and responsible application rather than focusing solely on technical concepts.

The CTP assessment results provided additional insight into short-term learning outcomes. Pre- and post-evaluation data show an increase in average assessment scores from approximately 4.5–5.5 before the workshop to approximately 8.0–8.5 afterward. While these results indicate improved performance within the training context, they should be interpreted primarily as evidence of immediate learning gains rather than long-term workplace adoption.

The broader lesson from the CTP intervention is that early-career officers benefit from a learning model that immediately links AI concepts to practical administrative problems. At this stage, the objective is not to develop AI specialists but to develop officers who can recognize opportunities, use AI responsibly, and begin thinking about how emerging technologies can support public-sector work.

2.2. STP: Applied AI Capability and Public-Sector Problem Solving

The STP training session provided a two-day, hands-on AI program that combined foundational concepts with practical exposure to AI tools for automation, productivity, information management, and application development. Participants explored AI fundamentals, RAG, Make.com, Replit, NotebookLM, Ollama, and n8n through demonstrations, guided exercises, and independent practice.

A central feature of the training was the transition from guided exercises to independent problem-solving. Participants worked in groups to identify public-sector or societal problems and develop AI-enabled solutions. Participants presented a wide range of projects, reflecting their diverse professional contexts and showing how AI could be applied to practical governance and public-service challenges.

While several projects were worth highlighting, a few particularly notable solutions demonstrated strong potential for real-world application. These included an agriculture and crop-recommendation application that considered geographical and environmental factors such as humidity, water availability, and soil conditions; a bilingual citizen complaint management portal in English and Urdu that allowed citizens to submit complaints with photographic evidence and track their resolution; and other projects addressing administrative and public-service challenges.

The projects were presented and evaluated at the end of the training, giving participants an opportunity to demonstrate how they could apply newly acquired AI skills to practical solutions. The STP training also provided useful insights for curriculum design. Participants were highly engaged and progressed quickly through hands-on activities, while the experience with n8n showed that tool selection must account for training duration, participants' backgrounds, and the practice required for independent use. Overall, the training reinforced the value of combining AI literacy, hands-on experimentation, and problem-based project work, while adapting technical depth and tool selection to each civil-service cohort.

2.3. MCMC and SMC: Organizational AI Capability

The MCMC and SMC trainings marked a transition from individual AI capability to organizational AI capability. At these levels, officers increasingly manage processes, coordinate teams, evaluate interventions, and make decisions that influence institutional operations. The training, therefore, moved beyond individual productivity and focused on integrating AI into organizational workflows. The MCMC session emphasized workflow automation, Retrieval-Augmented Generation, deployment considerations, AI lifecycle management, and evaluation. The SMC session placed greater emphasis on organizational AI strategy, procurement, governance, and AI audit.

Participants worked with concepts and tools, including Make.com, RAG systems, Streamlit, Opal, Gemini Gems, prompt and context engineering, and AI evaluation approaches. More importantly, activities required participants to translate administrative challenges into structured AI opportunities. These included developing Business Requirements Documents, identifying data and hosting requirements, considering privacy implications, designing organizational roadmaps, and evaluating AI systems for consistency, explainability, bias, and policy compliance.

This represents an important shift in learning objectives. At the CTP level, participants primarily explored how AI can support their work. At the MCMC and SMC levels, the question becomes broader: **How can an organization responsibly introduce and manage AI-enabled processes?**

This requires a different form of capability. Officers do not necessarily need to become AI system developers, but they need sufficient understanding to define requirements, evaluate solutions, communicate with technical teams, and make informed decisions.

The experience also highlights an important consideration for future evaluation frameworks. While the

program design incorporated assessments, complete assessment results and participant feedback were not available for analysis. Therefore, the sessions provide valuable insight into curriculum structure, learning activities, and intended competencies, but do not provide sufficient evidence to measure learning gains or behavioral change for these cohorts.

The broader implication is that management-level AI training should focus on developing implementation capability: the ability to identify opportunities, structure requirements, evaluate risks, and guide AI initiatives within an organizational setting.

2.4. NMC: Developing Strategic AI Leadership Capability

The NMC session represented the highest level of administrative responsibility and therefore required a different orientation. Rather than focusing primarily on individual tool use, the program examined the strategic implications of AI adoption across government institutions. Participants were introduced to AI and machine learning concepts, Retrieval-Augmented Generation, prompt and context engineering, AI agents, responsible AI, governance, fine-tuning, and AI infrastructure. The program also addressed questions about cloud versus on-premises deployment, AI compute requirements, sovereign AI, energy considerations, infrastructure planning, and Pakistan's AI ecosystem.

Discussions during the training session showed that senior officers were particularly interested in institutional readiness and strategic decision-making. Participants engaged with issues such as AI's role within government, the relationship between technical teams and leadership, infrastructure requirements, and the implications of increasingly capable AI systems.

However, the practical component also highlighted an important distinction in senior-officer AI training. Some participants required support with configuration-based activities involving Custom GPTs and Gemini Gems. The challenge was not necessarily a lack of interest in AI, but the gap between understanding AI's strategic importance and independently executing technical steps. This provides an important design insight: **Senior-officer AI training should remain practical, but the definition of practical learning should evolve with administrative responsibility.**

For senior officers, practical learning does not necessarily mean becoming proficient in configuring AI systems. Instead, it means developing the ability to evaluate proposed AI initiatives, understand technical dependencies, ask informed questions, assess risks, and make strategic decisions about AI adoption. The NMC training experience therefore suggests that senior leadership training should focus on AI governance, institutional strategy, investment decisions, infrastructure choices, and responsible adoption, while maintaining sufficient technical exposure to support informed decision-making.

2.5. From AI Application to Strategic Leadership

The key lesson is that AI capability should be defined by the complexity of the tools introduced and by the decisions officers need to make and their responsibilities.

Early-career officers benefit from experimentation, practical projects, and direct engagement with AI tools. Mid-career officers require stronger connections between AI and organizational processes. Senior officers need to evaluate, govern, and strategically guide AI adoption.

These initiatives demonstrate that effective public-sector AI training requires a progression from awareness to application, from application to implementation, and from implementation to governance and leadership. This progression underpins the career-stage AI capability framework proposed in the following section.

2.6. A Career-Stage AI Competency Framework

The proposed competency architecture identifies six interconnected capability domains, illustrating the progression from individual AI understanding to AI leadership at the institutional level.

Define the competency expected at each career stage by the decisions and responsibilities associated with the role, rather than by the sophistication of the AI tool used.

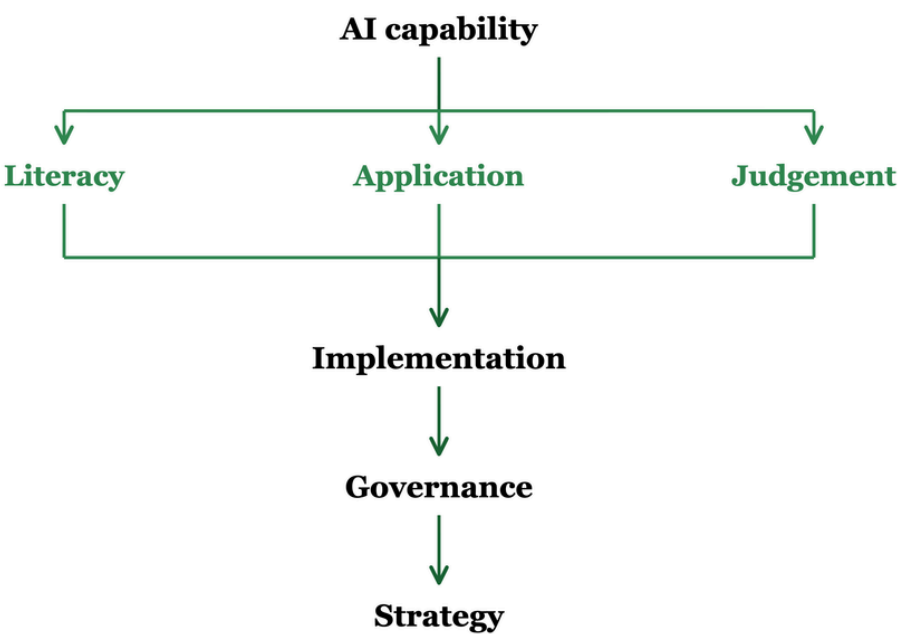


Fig 2.1

The following table is not intended to prescribe identical curricula for every institution. It provides a design logic that institutions can use to develop detailed curricula.

Career stage	Principal capability	Illustrative learning focus	Typical output
CTP / early career	AI literacy and assisted practice	AI fundamentals, prompting, research, documents, data, responsible use	AI-enabled task or public-sector project
MCMC / BS-18	AI-enabled operational practice	Workflow redesign, automation, RAG, data, evaluation	Departmental use case or workflow
SMC / BS-19	AI implementation and governance	Procurement, BRDs, strategy, audit, risk, hosting	BRD + roadmap + governance artefact
NMC / BS-20	Strategic AI leadership	Infrastructure, sovereignty, investment, governance, institutional transformation	Strategic AI action plan / decision paper

Fig 2.2

3. Pedagogical Frameworks

The proposed training framework is based on four interconnected educational strategies.

3.1. Andragogy

Civil servants are adult professionals who enter training with established knowledge, institutional experience, and responsibilities. Knowles' work on andragogy has influenced adult education by emphasizing self-direction, experience, relevance, and problem-centered learning. This has direct implications for AI training. A session should not begin with the technology simply because it is new. It should begin by establishing the problem that makes the technology relevant.

For example, instead of beginning with:

"Today we will learn RAG."

The facilitator can begin with a departmental problem:

"Your department has several years of policy documents, circulars, and reports. Officers currently search these manually. What would an AI-assisted retrieval system need to do, and what risks would have to be addressed?"

RAG can then be introduced as one possible response to the problem.

The pedagogical sequence becomes:

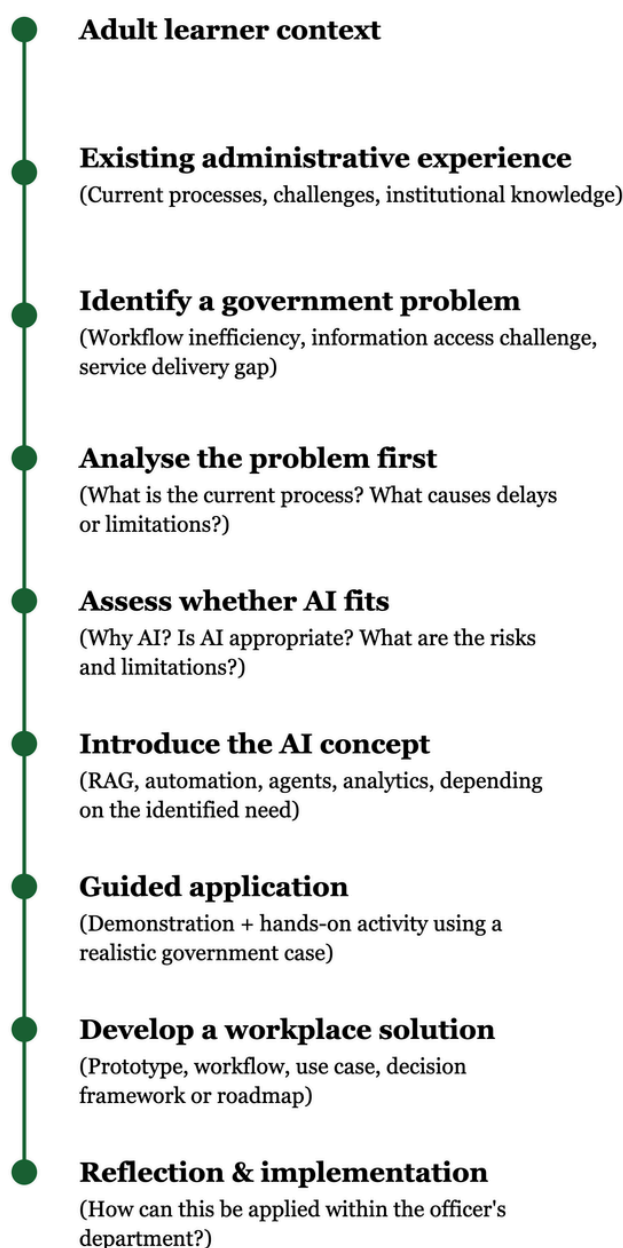


Fig 3.1

This approach is particularly relevant to senior officers because it aligns the technology with their existing professional judgment rather than positioning technical configuration as an end in itself.

3.2. Competency-Based Education

Competency-based education emphasizes developing and demonstrating knowledge, skills, and attitudes. UNESCO's terminology defines competency-based teaching in terms of clearly defining the knowledge, skills, and attitudes to be acquired, while UNESCO-UNEVOC describes competency-based education as focusing on demonstrated knowledge, skills, and attitudes in authentic contexts.

For civil-service AI training, this means replacing vague objectives such as:
"Participants will understand AI governance."

with observable competencies such as:

"Participants will be able to identify the data, human-approval, accountability and monitoring requirements associated with a proposed departmental AI system."

The difference is consequential because the second competency can be demonstrated and assessed.

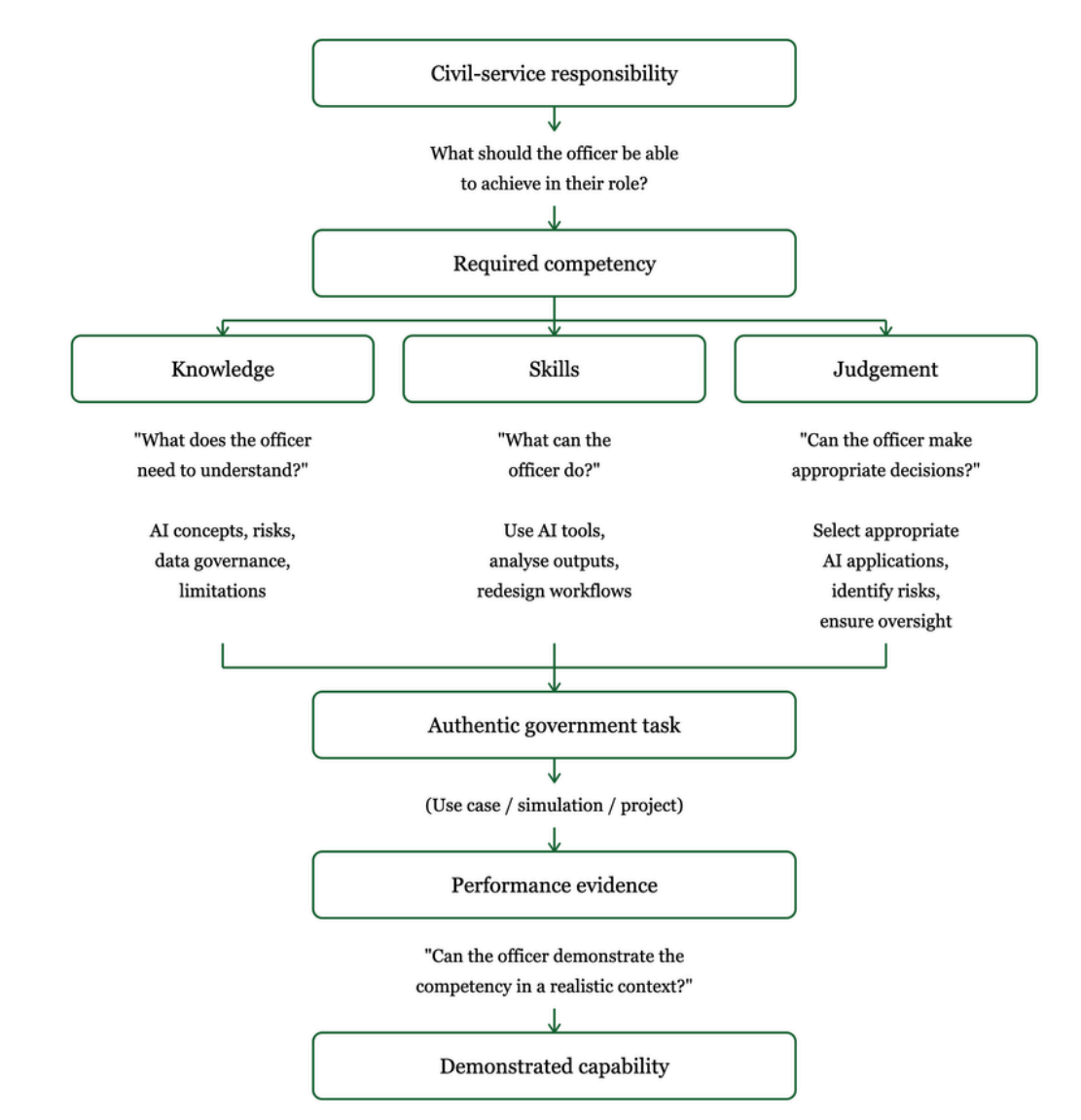


Fig 3.2

3.3. Experiential and Problem-Based Learning

Experiential learning places practical experience and reflection at the center of the learning process. Rather than learning concepts in isolation, participants engage with a real problem, analyze their experience, develop an understanding of the underlying concepts, test possible solutions, and refine their approach through feedback. Kolb's experiential learning model describes this process in four interconnected stages: **concrete experience**, **reflective observation**, **abstract conceptualization**,

and active experimentation. For civil-service AI training, this approach is particularly relevant because officers already possess extensive institutional knowledge and can best understand AI through problems connected to their professional responsibilities.

The learning process can therefore be structured as:

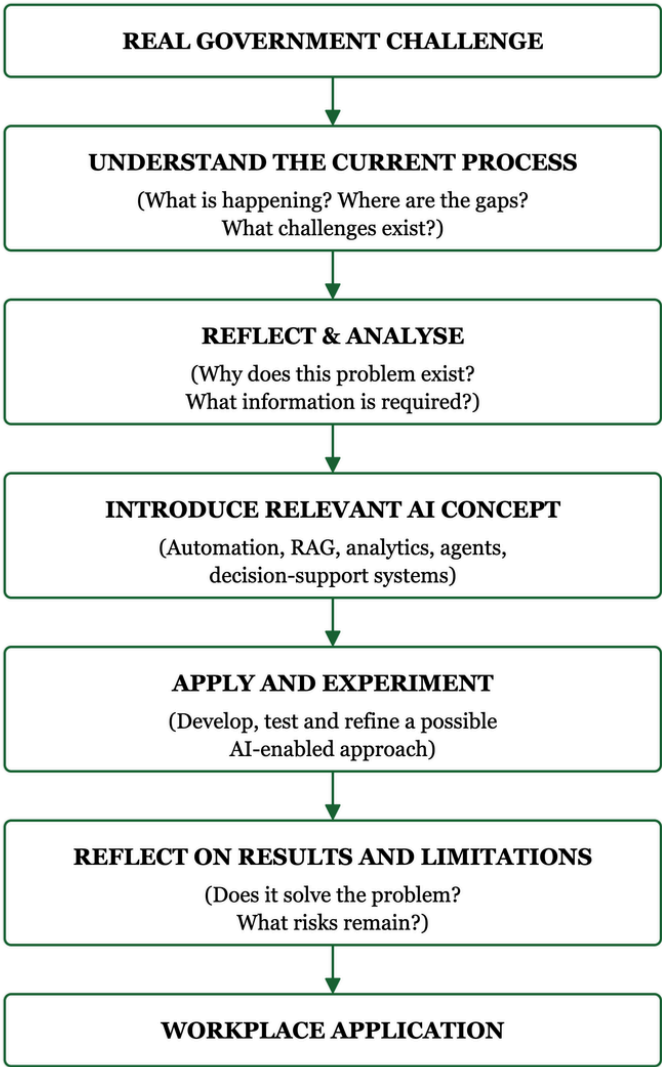


Fig 3.3

This approach shifts AI training from demonstrating what a technology can do to helping officers understand where and how AI can create value within government processes. In this approach, participants were not simply asked to identify possible AI applications; they developed proposed solutions to public-sector challenges, including student monitoring, court-case prioritization, administrative orders, flood-risk management, and medicine-stock monitoring. These activities required participants to connect AI concepts with real administrative problems and consider how such systems could operate within a government context.

Similarly, the SMC/MCMC AI-audit activity moved beyond explaining concepts such as bias and explainability. Participants were required to examine AI systems, compare outputs, and consider evaluation criteria, demonstrating how experiential learning can help officers develop practical

judgment about AI systems rather than only theoretical awareness.

3.4. Constructive Alignment

Constructive alignment links what officers are expected to do, what they need to learn, how they practice those capabilities, and how their learning is assessed. Biggs' framework emphasizes that effective learning design requires alignment among intended learning outcomes, learning activities, and assessment methods, and that learning outcomes are defined before teaching begins. In the context of civil-service AI training, this means that training should begin with the responsibilities and decisions associated with an officer's role, rather than starting with a particular technology or tool.

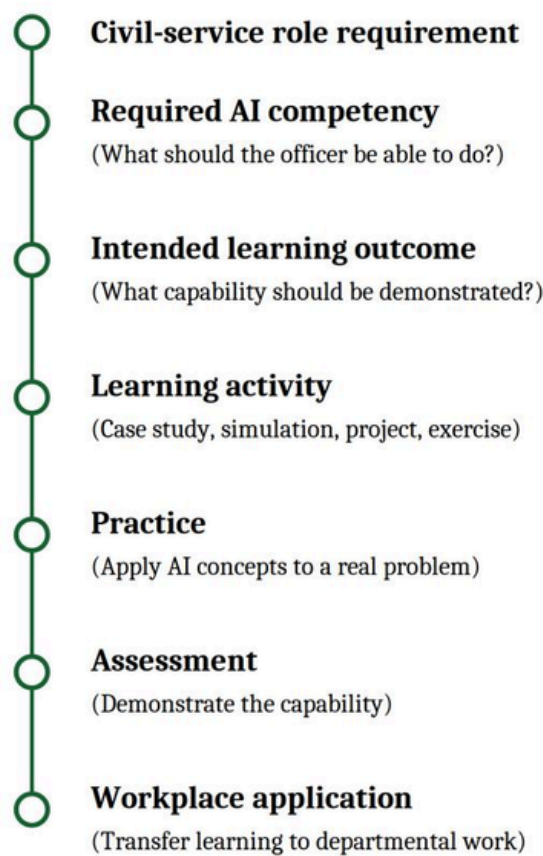


Fig 3.4

This approach ensures that training activities develop capabilities relevant to officers' actual responsibilities. For example, if the intended competency is identifying AI use cases, a lecture on AI history or capabilities would not be sufficient. Instead, participants should analyze departmental processes, identify administrative challenges, assess where AI could add value, consider risks, and develop a prioritized list of potential use cases.

Similarly, if the competency is AI procurement and implementation, participants should not only learn about AI systems conceptually or theoretically. They should also practice defining functional requirements, identifying data and security needs, evaluating hosting options, and developing

evaluation criteria. In this case, a Business Requirements Document (BRD) or an AI project proposal can serve as an assessment output because it shows whether participants can translate an organizational need into a structured implementation requirement.

The core principle of constructive alignment is therefore: **The competency determines the learning activity, and the learning activity determines how to assess capability.** This prevents AI training from devolving into a demonstration of tools and ensures that officers develop capabilities applicable to their professional responsibilities.

3.5. Integrated Pedagogical Framework for Civil-Service AI Training

The pedagogical approaches discussed above can be integrated into a framework for designing civil-service AI training. The framework brings together principles of adult learning, competency-based education, experiential learning, and constructive alignment, ensuring training begins with the officer’s professional context and progresses toward demonstrable workplace application.

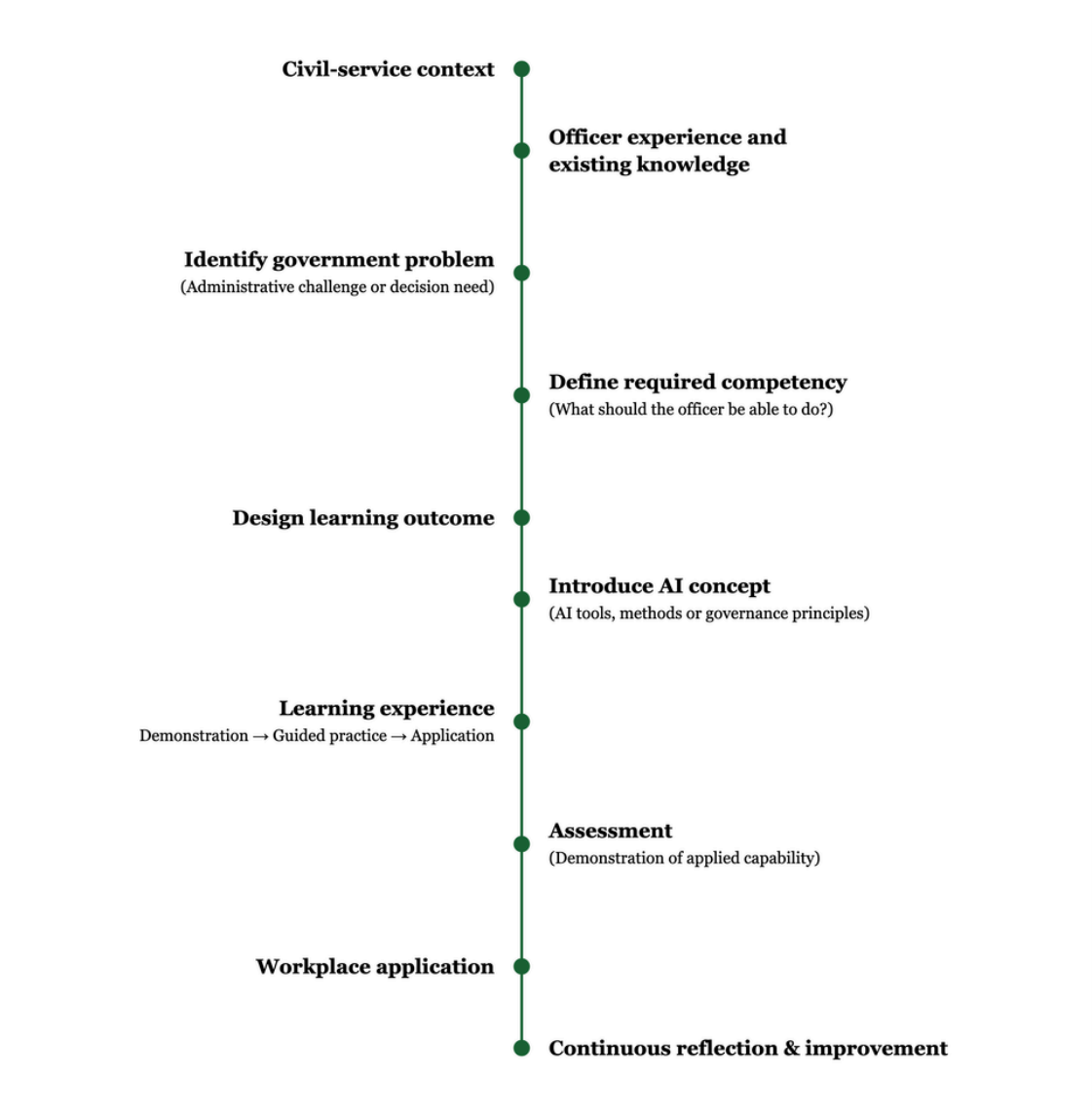


Fig 3.5

This framework's defining principle is that AI training should begin with public-sector problems rather than technology demonstrations. **Introduce AI concepts and tools only after participants understand the problem they aim to address.** This ensures officers can identify appropriate AI applications, evaluate their limitations, and translate learning into practical departmental outcomes.

For example, a session on Retrieval-Augmented Generation (RAG) should not begin with the technical concept alone. Instead, participants may first examine a government information-management challenge, identify requirements and risks, and then explore RAG as one possible approach. This positions AI as a means of improving public administration rather than an objective in itself.

4. Curriculum Design: From Tools to Competencies

One of the most important design decisions is to avoid making commercial software products the curriculum's organizing principle. A tool is an instructional environment. A competency is the capability that should remain after the tool changes.

For example:

Workflow automation is the competency.

Make.com may be one tool through which that competency is developed.

Similarly:

Grounded information retrieval is the competency.

A particular RAG platform is an instructional implementation. **This distinction matters because tools change faster than institutional training cycles.** A curriculum organized around competencies can update its tools without rebuilding its educational architecture.

4.1. Integrated Pedagogical Framework for Civil-Service AI Training

Learning outcomes should progressively shift **from using AI to making decisions about AI.**

Early career: CTP and STP

Participants should be able to explain foundational AI concepts, use approved AI tools for appropriate administrative tasks, craft effective prompts, verify AI outputs, and identify basic risks.

MCMC

Participants should be able to identify repetitive or information-intensive workflows, evaluate where

AI or automation could add value by configuring appropriate workflow solutions and assessing whether outputs are reliable enough for their intended use.

SMC

Participants should be able to convert an administrative problem into an AI use case, define requirements, assess data and hosting needs, develop procurement documentation, prioritize use cases, and establish governance and evaluation requirements.

NMC

Participants should be able to evaluate the institutional implications of AI adoption, interrogate infrastructure and sovereignty questions, assess investment and governance choices, and provide strategic direction for AI-enabled institutional transformation.

The underlying progression is:

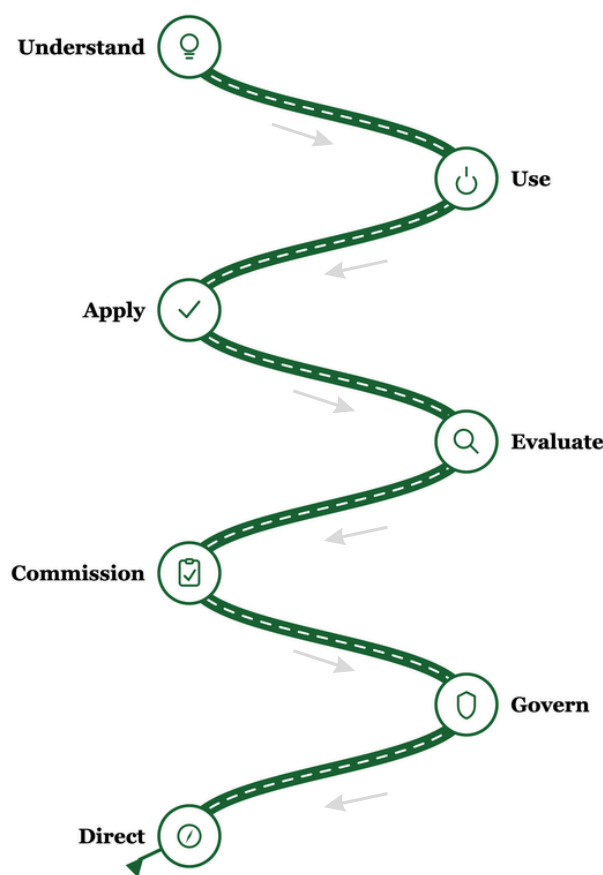


Fig 4.1

4.2. Designing the Practical Learning Experience

A practical AI session should not be understood as a session in which participants simply click through an application interface. A genuinely practical session requires participants to **make decisions**. This is particularly important because the NMC field experience showed that conceptual and hands-on engagement do not necessarily align. Participants may understand the strategic relevance of a technology while still requiring substantial support to execute the technical steps, sometimes as simple as accessing a Google Drive link.

The proposed learning cycle is as follows:

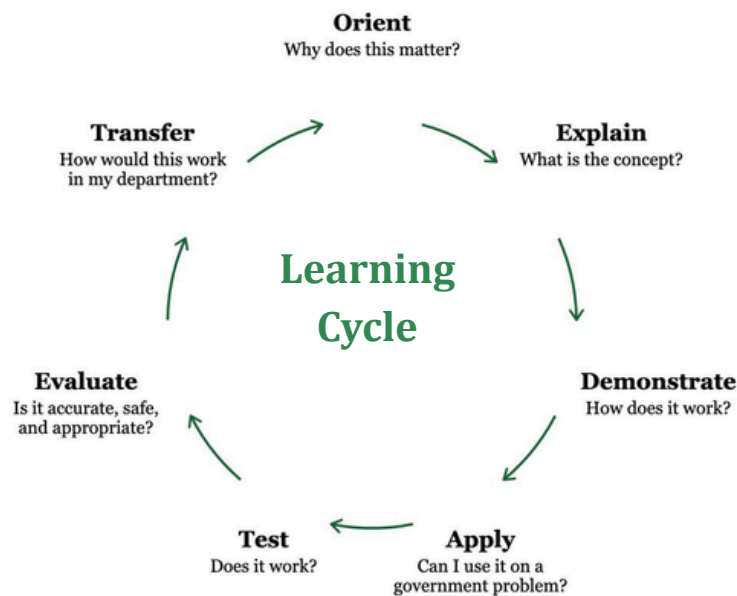


Fig 4.2

4.3. Differentiating Practical Learning by Seniority

The distinction should therefore be made between technical execution and practical decision-making.

- A junior officer might be asked to build a simple workflow.
- A mid-career officer might redesign a departmental process.
- A senior management officer might evaluate a vendor proposal and develop a BRD.
- A national-management officer might compare cloud and on-premises architectures and assess their strategic implications.

This avoids the false assumption that senior officers must either become technical developers or receive only theoretical lectures.

4.4. Public-Sector Use-Cases for Applied AI Learning

Use cases should be selected not merely because they are technologically interesting but because they expose participants to different dimensions of government work.

Education

The **Out-of-School Student Monitoring System** can be used to examine data integration, monitoring, threshold identification, and targeted intervention. The pedagogical value lies in asking what information is required, who has authority to act on the information, how errors could affect students, and how human review would operate.

Disaster Management

The **Flood Risk Monitoring & Early Alert System** shows how data can be connected to predefined

conditions and automated communication. The project used weather forecasting information and generated alerts when defined risk conditions were met.

Healthcare

The **Essential Medicine Stock Monitoring System** provides a particularly accessible example. The documented project proposed monitoring stock levels and automatically notifying health authorities when essential medicines fall below minimum thresholds.

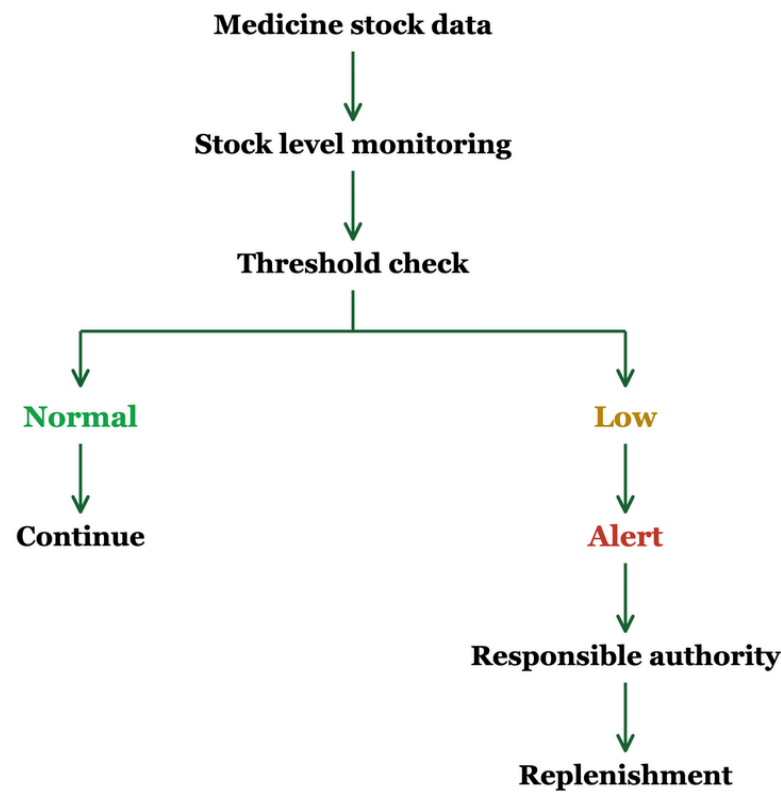


Fig 4.3

For example, this use-case demonstrates workflow automation, data quality management, threshold logic, notification systems, and human accountability without requiring participants to develop a complex predictive model.

Governance and Administration

The **Zimni Order Management System** can support document management, workflow tracking, and administrative process redesign.

The **AI-Assisted Court Case Prioritization** project offers a more complex example because it raises questions about classification, fairness, explainability, accountability, and the need for human review. The existence of such a project should not be taken as evidence that AI-based case prioritization is appropriate for real-world judicial deployment; rather, it provides a useful educational scenario for examining the governance requirements of high-impact AI.

The broader pedagogical principle is:

A good training use-case should teach both the opportunity and the institutional questions around it.

5. Responsible AI and Data Security

Government AI capability is inseparable from data governance. Pakistan's National AI Policy explicitly addresses responsible and ethical AI, personal data protection, privacy, and security. It also mandates human oversight of critical AI operations and lifecycle evaluation of high-impact AI systems.

UNESCO's recommendation on the Ethics of AI similarly identifies privacy and data protection, safety and security, responsibility and accountability, transparency and explainability, human oversight, awareness and literacy, and fairness and non-discrimination as core principles. For government training, these principles should not be confined to a single "Responsible AI" lecture. They should be integrated into practical activities.

For example, when officers have to upload documents to an AI system, the process should also require them to determine whether those documents are appropriate for that system/application.

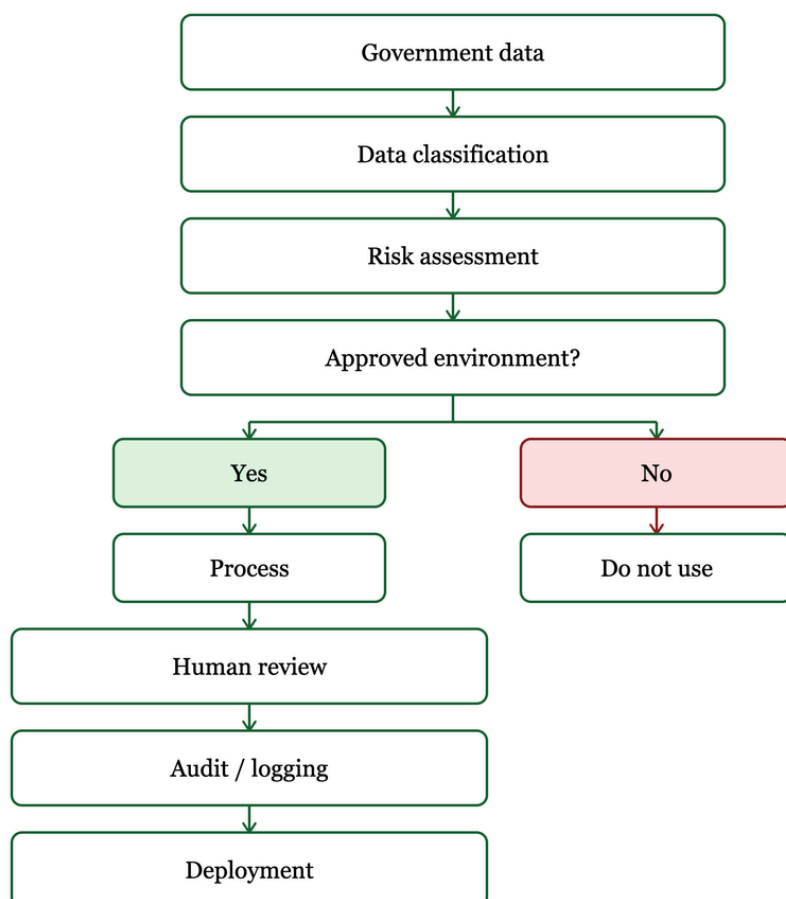


Fig 5.1

5.1. AI Risk and Evaluation

The National Institute of Standards and Technology (NIST) **AI Risk Management Framework** provides a useful international reference for thinking about AI risk. Its four functions are **Govern, Map, Measure, and Manage**, with governance serving as a cross-cutting function across the AI lifecycle.

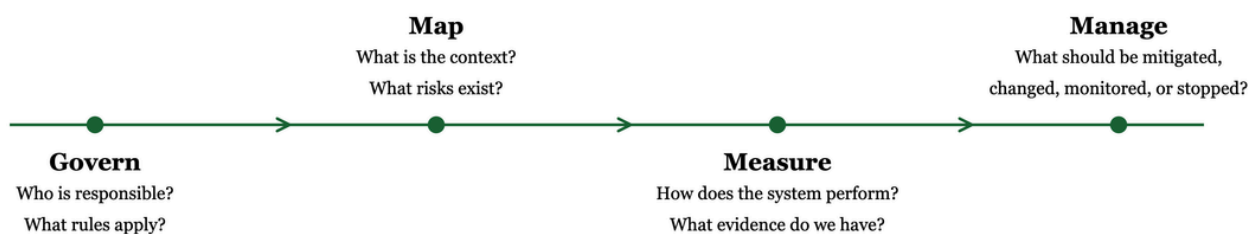


Fig 5.2

This framework can support advanced SMC and NMC learning by shifting the officer's question from "Does the AI work?" to "**Does it work appropriately for this particular government purpose, under acceptable risks and controls?**"

6. Assessment Architecture

The assessment must correspond to the competency being developed. A civil servant learning prompting may be assessed through an applied task. An officer learning AI procurement may be assessed through a BRD. An officer learning AI audit may be assessed through an audit report. A senior officer learning strategy may be assessed through an institutional roadmap. This also means that written tests should not disappear. They remain useful for assessing conceptual knowledge but should be paired with performance-based evidence when the intended competency involves application or judgment.

6.1. Kirkpatrick Evaluation Framework

The Kirkpatrick model provides four levels of evaluation: **Reaction, Learning, Behavior, and Results**. The model connects learning interventions with organizational outcomes rather than stopping at participant reaction. For civil-service AI training, the model can be adapted as follows:

Kirkpatrick level	Civil-service application	Potential evidence	Timing
1. Reaction	Was the training relevant and usable?	Relevance, engagement, confidence, perceived applicability	During/end
2. Learning	Did participants acquire the intended capability?	Pre/post assessment, practical task, capstone	During/end
3. Behaviour	Did officers apply the capability at work?	AI Application Plan, workflow changes, pilot activity	30/60/90 days
4. Results	Did the application contribute to organisational outcomes?	Processing time, backlog, error rates, staff time, service indicators	3–12+ months

Fig 6.1

The model should not be interpreted as proving that training alone caused a departmental result. Multiple factors affect organizational outcomes, including technology, management, resources, processes, and institutional constraints.

6.2. The 90-Day AI Application Plan (Proposed)

The most important way to connect training to behavior is a structured post-training application plan. Each participant completing an advanced program should identify:

Element	Description
Departmental problem	What problem could be improved?
Current process	How is it currently handled?
AI opportunity	Where could AI contribute?
Data	What information would be required?
Risk	What could go wrong?
Human decision point	Where must human judgement remain?
Pilot	What small-scale test could be undertaken?
Indicator	How would success be measured?
Responsible officer	Who would own the initiative?
30-day milestone	What should happen first?
60-day milestone	What should be developed/tested?
90-day milestone	What evidence should exist?

Fig 6.2

And this creates a bridge between:

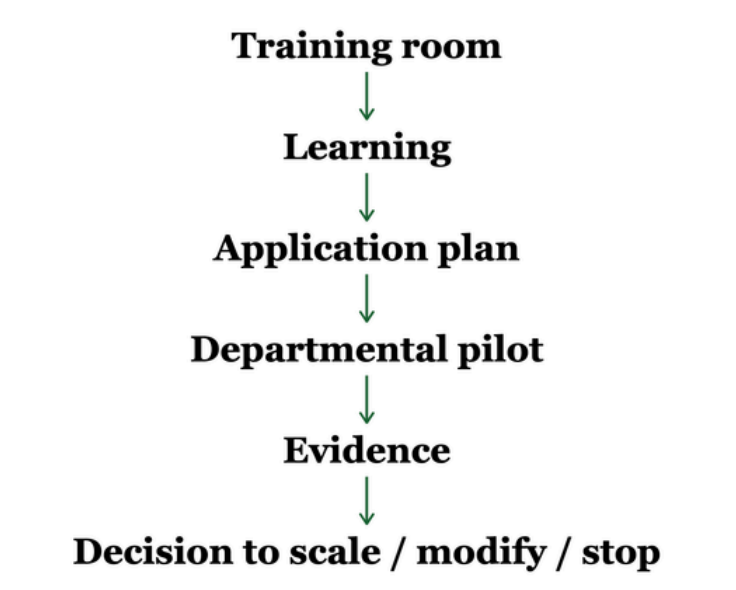


Fig 6.3

6.3. Baseline Diagnostic

A major implementation requirement is to establish a baseline before training. Field observations show why assuming a common level of digital familiarity can be problematic. At the NMC level, for example, some participants required support with practical configuration tasks despite participating in the conceptual discussion.

A diagnostic should therefore assess three dimensions:

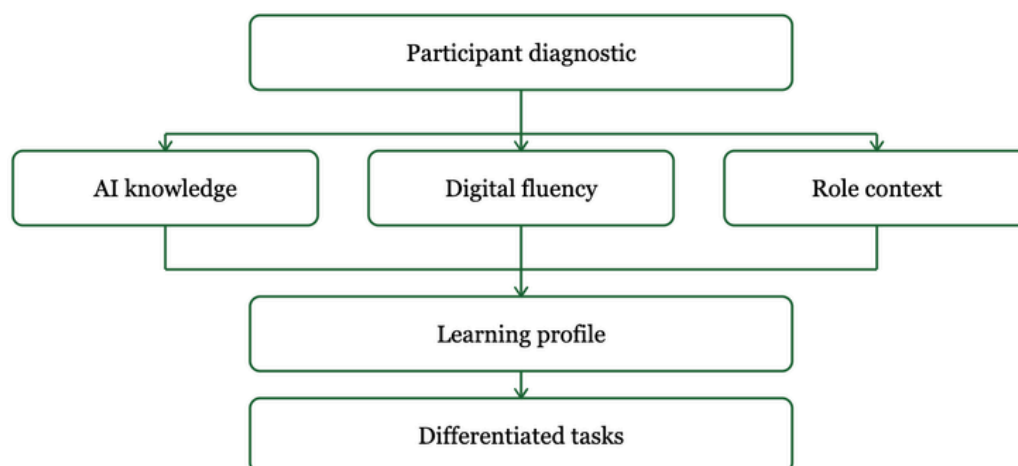


Fig 6.3

AI knowledge measures understanding of concepts. Digital fluency assesses whether basic operational barriers may interfere with learning. Role context identifies the participant's actual work processes, responsibilities, and potential AI opportunities.

6.4. Trainer and Facilitation Model

The trainer's role also needs to change as the program becomes more practical.

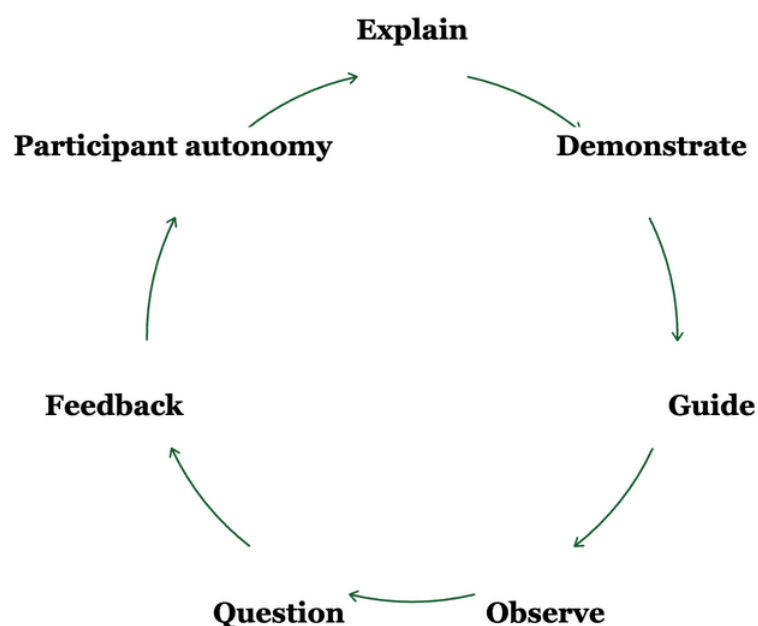


Fig 6.4

Hands-on learning should, therefore, not simply mean giving participants instructions and leaving them to solve technical problems on their own. The NMC field evidence shows why **scaffolding matters**. Some participants struggled with configuration steps and needed individual guidance.

A more appropriate sequence is:

Show → do together → do independently → troubleshoot → reflect

At senior levels, facilitation should also encourage challenge and discussion. Participants should be asked to question whether a proposed AI solution is necessary, whether a non-AI alternative may be better, what risks exist, and what institutional authority is required.

6.5. Delivery Model

The proportion of practical and conceptual learning should vary by competency and career stage rather than follow a universal formula.

One way to do it could be:

CTP/STP

Concept → Demonstrate → Build → Project

MCMC

Concept → Demonstrate → Redesign → Automate → Evaluate

SMC

Concept → Case → Simulate → Decide → Govern

NMC

Concept → Scenario → Debate → Evaluate → Strategise

This preserves practical learning throughout the career pathway while changing the nature of practice.

7. Lessons from atomcamp's Trainings with Civil Servants

The five training interventions: CTP, STP, MCMC, SMC, and NMC, provided an opportunity to observe how AI training approaches perform across different levels of the civil service.

While all programs combined conceptual learning with practical exposure, the experience demonstrated that participant seniority, digital familiarity, learning pace, program duration, and the intended role of participants significantly affect the effectiveness of training design.

7.1. Limitations & Challenges

Lack of Basic Digital Familiarity

One main challenge stemmed from differences in participants' baseline digital familiarity.

The MCMC cohort had difficulty with basic operational tasks, including opening files and creating copies in Google Drive. As a result, participants spent considerable time resolving basic computer and file-management issues before they could engage with the AI activity. This created a gap between the level at which practical activities were designed and the digital familiarity demonstrated by some participants.

NMC presented a similar challenge. Participants were generally engaged in conceptual discussions, but some struggled to follow the steps required to create and configure Custom GPTs and Gemini Gems. Some participants required individual troubleshooting support and still struggled to complete the hands-on task independently.

Lesson 01: *AI training cannot assume a uniform level of digital readiness. Even senior officers may require a short operational onboarding before technical activities begin.*

Technical Depth Must Match Training Duration

The STP training showed that technically capable participants can move quickly through multiple tools; however, it also highlighted the limits of introducing technically demanding platforms in a short workshop.

The n8n activity was successfully completed, but the training showed that n8n has a steep learning curve when introduced for the first time in a short-duration program. Participants could follow the guided exercise, but developing independent proficiency would require additional practice and dedicated learning time. The report therefore identifies n8n as more appropriate for longer programs or technically oriented audiences.

This contrasts with the STP cohort's overall ability to move rapidly through tools and activities. Participants were persistent in troubleshooting and generally continued working until their workflows or applications functioned correctly.

Lesson 02: *The question should not simply be "Is this tool useful?" but also "Can participants meaningfully learn and apply this tool within the available time?"*

Technical Training is Not Equally Relevant to All Seniority Levels

The NMC experience showed that senior officers may value understanding AI systems without necessarily needing to perform detailed technical implementation themselves.

Participants actively engaged in discussions on AI governance, infrastructure, AI dependency, future implications, and the relevance of technical skills for senior officers. However, some questioned the need to perform technical implementation themselves when dedicated IT personnel may exist within their organizations.

This indicates a distinction between technical capability and decision-making capability. Senior management participants may need to understand what a RAG system, AI agent, or deployment architecture does, its risks, and what questions to ask technical teams, without necessarily building every component themselves.

Lesson 03: *Seniority should influence not only the examples used in training but also the expected level of technical participation.*

Participant Engagement Can Significantly Affect Delivery

The SMC and MCMC observations provide the clearest comparison of classroom dynamics.

SMC participants were generally attentive, willing to experiment, and prepared to work independently. All participants completed the assigned tasks. By contrast, MCMC had more cross-talk, less consistent attention during demonstrations, and relatively low participation in practical activities. Basic operational difficulties also prevented some participants from reaching the actual AI activity. This means the same broad training approach can produce different classroom experiences depending on the cohort.

Lesson 04: Training delivery must account for classroom dynamics rather than assuming a single instructional pace will work equally well for every cohort.

Short Programs Create a Trade-off Between Breadth and Depth

Across the programs, a recurring tension emerged between exposing participants to the breadth of the AI landscape and giving them enough time to develop practical proficiency.

The CTP program successfully covered AI fundamentals, responsible AI, prompting, RAG, Make.com, Google AI Studio, data cleaning, and Gemini Gems, while also incorporating group projects and assessment. The SMC/MCMC program similarly covered AI foundations, agents, procurement, strategy, governance, automation, RAG, lifecycle management, audit, and evaluation within two days.

However, the NMC and STP experiences show that as technical activities become more complex, time becomes a key constraint.

Lesson 05: A short program should prioritize a smaller number of activities that participants can actually complete and understand rather than maximizing the number of tools introduced.

Evaluation Evidence Not Consistent Across All Trainings

The CTP session provides a useful example of stronger outcome measurement: average assessment scores increased from approximately 4.5–5.5 pre-training to 8.0–8.5 post-training.

In contrast, the SMC/MCMC training sessions included pre- and post-assessment instruments, but the assessment results, participant feedback, and submitted artifacts were not available for analysis. Consequently, we could not establish measured learning gains, satisfaction, or completion rates for those cohorts.

Lesson 06: Every future training should include a standardized evaluation framework that covers baseline knowledge, post-training learning, activity completion, participant feedback, and, where possible, follow-up application.

7.2. Comparative Analysis

First, practical learning worked particularly well when participants could see a direct link between the activity and a real public-sector problem. CTP participants developed solutions in education, healthcare, disaster management, and judicial administration, while STP participants built applications for agriculture, citizen services, and other public-sector challenges.

Second, participant engagement was a stronger determinant of practical success than seniority alone. SMC participants demonstrated strong independent experimentation and task completion, whereas MCMC participants required substantially more classroom management and operational support. STP participants likewise showed a strong willingness to experiment and troubleshoot.

Third, the appropriate definition of "hands-on" varies by audience. For CTP and STP, building workflows, applications, and prototypes was productive. For SMC, hands-on work on BRDs, procurement, strategy, and AI audit aligned with leadership responsibilities. For NMC, technical activities generated more friction, while strategic discussions on infrastructure, governance, and AI's future role generated stronger engagement.

7.3. Lessons for Future Trainings

The combined experience of the five sessions suggests the following principles for future AI capacity-building interventions.

However, the NMC and STP experiences show that as technical activities become more complex, time becomes a key constraint.

1. Design the training around the participant's role, not simply their seniority

Future programs should distinguish between:

- **AI users:** using AI for productivity and everyday work
- **AI implementers/builders:** creating workflows, applications, and RAG systems
- **AI managers/owners:** defining requirements, managing implementation, and evaluating solutions
- **Senior decision makers:** making decisions on strategy, procurement, governance, risk, and accountability

The SMC/MCMC program has already begun moving in this direction by differentiating organizational strategy, procurement, automation, and audit activities.

2. Conduct a baseline digital-readiness check before technical training

A short pre-training readiness assessment should establish whether participants can independently:

- manage files and folders;
- use Google Drive or equivalent platforms;
- create and share documents;
- navigate browser-based applications;
- sign in to required platforms;
- follow basic multi-step instructions.

Where gaps exist, use the first 15–30 minutes for digital onboarding rather than letting basic operational problems consume the practical sessions. This directly addresses the MCMC experience, where basic file and Drive operations consumed time that could otherwise have been used for AI activities.

3. Reduce the number of tools when the objective is proficiency

Future short workshops should avoid introducing many technically distinct platforms just for exposure. Instead, the program should select 2–4 core tools and build multiple activities around them.

For example:

Short foundational program

ChatGPT/Gemini → prompting → document intelligence → simple automation

Applied implementation program

RAG → Make/n8n → application prototype → evaluation

Leadership programme

AI strategy → BRD → procurement → governance → audit

The STP experience particularly shows why technically demanding tools such as n8n need adequate dedicated time if independent proficiency is expected.

4. Make every hands-on activity produce a tangible artifact

The strongest program designs increasingly moved away from simply asking participants to "try a tool."

Instead, participants produced:

- BRDs
- AI use-case portfolios
- three-year roadmaps
- procurement drafts
- automated workflows
- RAG systems
- AI audit observations
- working application prototypes

For example, the SMC session explicitly connected its activities to BRDs, hosting recommendations, ToR/RFP drafts, roadmaps, and audit observations. This should become a standard design principle.

Every major session should answer: *"What will the participant leave the room with?"*

5. Use authentic departmental problems rather than generic examples

The CTP and STP projects showed the value of letting participants work on problems they recognize in government operations. CTP projects included student monitoring, court-case prioritization, flood-risk alerts, and medicine-stock monitoring.

STP participants similarly selected their own public-sector and societal problems and developed prototypes around them. Future programs should therefore provide a problem library relevant to the participant's department or cadre, while still allowing groups to bring their own use cases.

6. Build flexibility into the delivery pace

The five cohorts demonstrated that a fixed pace is not always appropriate.

STP participants moved rapidly through practical activities, whereas MCMC participants needed more operational support, and NMC participants needed more explanation of the strategic relevance of technical activities.

Future workshops should therefore use a core + extension model:

- Core activity: achievable by everyone.
- Extension activity: additional complexity for faster participants.
- Support pathway: simplified instructions or facilitator assistance for participants who need it.

This prevents faster participants from becoming disengaged while ensuring others are not left behind.

7. For senior officers, emphasize "technical literacy" rather than "technical execution"

The NMC experience suggests that senior officers can benefit from understanding technical systems without necessarily being expected to implement every component themselves.

Future senior-management sessions should therefore focus on questions such as:

- What can this system actually do?
- What data does it require?
- Where should it be hosted?
- What can go wrong?
- What should be included in a BRD?
- What should leadership ask vendors?
- Where is human approval required?
- How should you evaluate performance and bias?

This approach aligns with the SMC curriculum, which explicitly positions senior leaders as decision-makers who need to understand what they are approving, what risks they are accepting, and what evidence they should require, rather than becoming model engineers.

8. Treat responsible AI as an applied activity, not a standalone lecture

The SMC/MCMC program provides a useful model here. Rather than limiting responsible AI to principles, participants conducted controlled tests, compared outputs, and documented observations on consistency, explainability, bias, and policy compliance.

Future programs should similarly integrate responsible AI into practical exercises:

Build → Test → Identify risk → Apply control → Retest

This makes responsible AI part of the implementation process, not an additional theoretical module.

9. Standardize post-training measurement

The CTP experience demonstrates the value of having measurable pre/post learning data, with average scores increasing from approximately 4.5–5.5 to 8.0–8.5.

Future programs should use a consistent evaluation framework:

Before training

- AI knowledge baseline
- digital-readiness baseline
- expectations

During training

- activity completion
- facilitator observations

Immediately after

- post-assessment
- confidence/self-efficacy
- relevance rating
- most/least useful activities

30–90 days later

- tools still being used
- workflows implemented
- departmental use cases progressed
- further support required

This would make future reports much stronger because they would measure not only what was taught, but also what participants retained and applied.

7.4. Key Implications

Across the five programs, the central lesson is that **no single AI training model works equally well across the civil service.**

The CTP experience demonstrated the value of combining foundational AI literacy with extensive hands-on experimentation and public-sector problem-solving. STP showed how an engaged, digitally comfortable cohort can support a faster, more technically ambitious learning model. SMC showed the value of translating AI into strategy, procurement, governance, and audit responsibilities. MCMC highlighted the importance of digital readiness, classroom management, and demonstrating immediate workplace relevance. NMC demonstrated that senior officers can engage deeply with AI's strategic, infrastructural, and governance implications while requiring a different approach to technical implementation.

The experience also highlights the need to customize training by ministry, department, and cadre. Feedback on training can vary considerably, with some groups finding the content too technical while others find it too basic. **This reinforces the need for iterative consultation between training providers and relevant ministries or departments when designing future programs.**

The future direction should therefore be role-based, problem-based and capability-based rather than tool-based. Training design should begin by identifying what participants need to do after the program, then selecting the appropriate concepts, tools, activities, and level of technical depth to achieve that objective.

The progression can be summarized as:

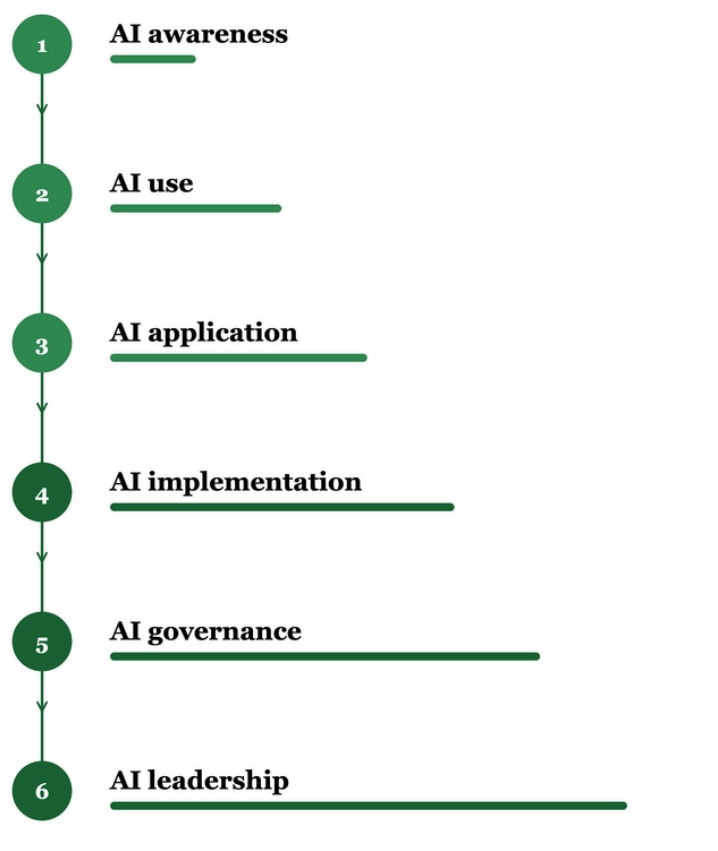


Fig 7.1

The purpose of future capacity building should be to place each cohort at the appropriate point along

this progression, rather than attempting to move every participant through the entire AI landscape in a single short program.

Recommendations

Integrate AI capability seamlessly into the existing civil-service learning pathway

Pakistan's existing MCMC, SMC, and NMC architecture provides a natural institutional pathway for developing AI capabilities progressively. AI learning must be integrated with existing professional development rather than treated solely as a series of isolated technology workshops. The National AI Policy already identifies public-sector AI awareness and specialized training as a policy objective.

Adopt a role- and career-stage-based competency framework

The curriculum should distinguish what officers need to understand, perform, evaluate, and govern at different stages of their careers. The distinction should be based on responsibility rather than assumptions about technical ability.

Conduct baseline diagnostics

Before training, institutions should assess participants' AI knowledge, digital fluency, and role-specific needs. This would allow practical activities to be differentiated and reduce the risk of spending valuable training time on skills that some participants already possess while others lack the prerequisite capabilities.

Treat tools as means rather than curriculum endpoints

Training should be organized around durable competencies such as workflow redesign, grounded information retrieval, AI evaluation, and responsible use. Tools should be selected according to those competencies and updated as technology changes.

Maintain practical learning at senior levels, but change its purpose

Senior officers should still have practical AI exposure. Nonetheless, activities at SMC and NMC should progressively prioritize procurement, evaluation, governance, strategic decisions, and institutional scenarios rather than extensive technical configuration.

Embed data security and responsible AI throughout training

Data classification, privacy, security, human oversight, transparency, bias, and accountability should be integrated into practical activities rather than taught solely as standalone theoretical topics. This aligns with Pakistan's National AI Policy and international responsible-AI frameworks.

Require tangible outputs

Advanced programs should include use cases, workflows, BRDs, AI audit reports, organizational roadmaps, or strategic action plans. This creates evidence of capability and gives departments something that can potentially inform subsequent implementation.

Establish post-training application mechanisms

The 90-day AI Application Plan should connect training with departmental activity. Training institutions should work with supervisors to review progress after completion.

Introduce self-paced online courses before formal training

Civil servants should have access to short, self-paced courses covering AI fundamentals, terminology, common applications, responsible use, and basic prompting before attending hands-on programs. This can establish a common baseline and allow classroom time to focus on practical application rather than introductory concepts.

Accommodate differences in digital and AI familiarity

Short online modules can allow participants to progress through foundational content at their own pace and revisit concepts where needed. This can reduce differences in baseline understanding within a cohort and allow face-to-face training to be differentiated according to participants' existing capabilities.

Integrate foundational learning with training and assessment

Where possible, completion of foundational modules should be accompanied by a short diagnostic assessment and used to inform classroom design. Participants who demonstrate foundational proficiency can move directly into applied activities, while those requiring additional preparation can complete targeted modules before or during the program.

Develop cadre-specific learning pathways

After foundational AI training, subsequent programs should be tailored to the functional responsibilities of different ministries, departments, and cadres. Officers working in areas such as finance, health, education, justice, or administration encounter different processes, datasets, risks, and decision-making requirements; therefore, advanced AI training should group participants by department or functional area and focus on domain-specific use cases, workflows, and challenges relevant to their professional context. Bringing together officers with similar responsibilities can foster peer learning, enable discussion of shared challenges, and support the development of sector-specific AI applications

Conclusion

Artificial intelligence capability in the public sector should be understood as a professional and institutional competency, rather than simply the ability to operate AI tools. Effective public-sector use requires civil servants to recognize appropriate opportunities, understand data and technical requirements, assess risks and limitations, evaluate outputs, and exercise sound judgment about where human oversight and accountability are necessary. An AI-ready civil service is therefore one that can not only use AI, but also understand, question, manage and govern its use within public institutions.

The evidence examined in this guide indicates that this capability should develop progressively across the civil-service career pathway. Early-career officers benefit from foundational AI literacy, experimentation, and practical problem-solving; officers moving into management roles require greater emphasis on implementation, organizational processes, procurement, and evaluation; while senior officers need the ability to assess AI proposals, understand institutional and infrastructural implications, and guide governance and strategic adoption. The experience of atomcamp's five civil-service training sessions further demonstrates that no single training model is equally appropriate for every cohort. Training is more effective when its technical depth, practical activities, and learning outcomes align with participants' responsibilities, existing capabilities, and workplace context.

Future capacity building should therefore move beyond generic, tool-focused workshops toward role-based, problem-based, and capability-based learning. Foundational learning can establish a common baseline, while subsequent training should be increasingly customized by ministry, department, and cadre so officers can work on relevant processes, datasets, and public-sector challenges. Practical learning, responsible AI, data security, and evaluation should be integrated throughout this progression, supported by appropriate pedagogical approaches and assessment mechanisms that measure not only immediate learning but also workplace application.

For Pakistan, the objective should ultimately be to build a civil service that is equipped to use AI responsibly, implement it effectively, evaluate its implications, and govern its adoption strategically. This guide provides a foundation for that effort by connecting Pakistan's existing civil-service training architecture with evidence from practical training, established learning approaches, and a career-stage capability model. It is intended to support future program design and institutional decision-making while also providing a basis for further research on how AI capabilities can be developed and sustained across Pakistan's public sector.

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Supporting Documents

Post-Training Report, AI Capacity Building Workshop, CTP

Post-Training Report: AI for Public Sector, SMC and MCMC