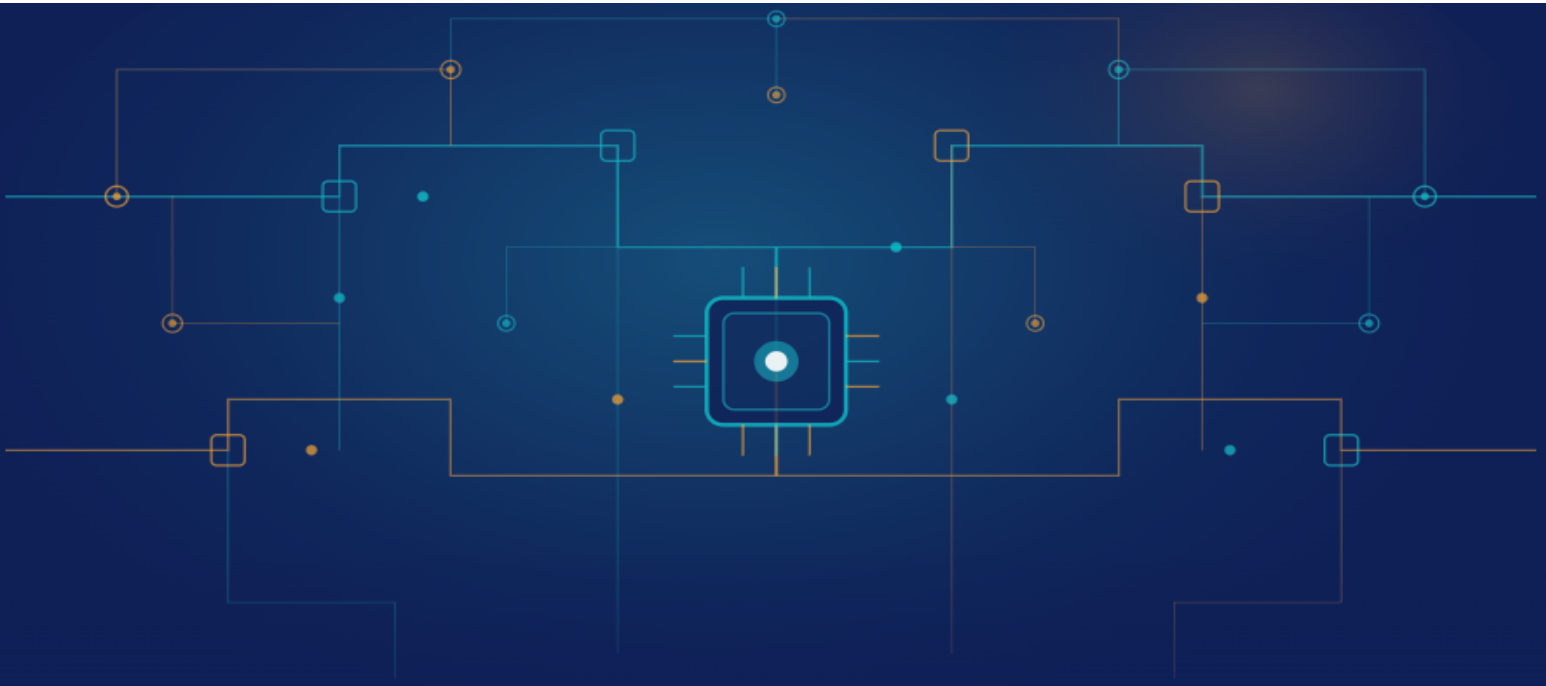




AI in the Classroom Before the Classroom

A Practitioner's Guide for Teacher Educators
and Pre-Service Teachers in India



Adit Gupta

*AI in the Classroom Before the Classroom:
A Practitioner's Guide for Teacher Educators and Pre-Service Teachers in India*

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The views expressed in this guide are those of the author and do not necessarily represent the views of any institution, organisation, or body with which the author is affiliated.

Every effort has been made to ensure the accuracy of the information presented in this guide. Tool availability, platform features, and policy details are subject to change. Readers are advised to verify current information independently.

The AI Interaction Knowledge (AIK) framework described in this guide was developed through research at MIER College of Education, Jammu. The Continuous and Comprehensive Evaluation (C²E) model is an original institutional framework developed and implemented at MIER College of Education.

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A Note Before You Begin

This guide was not written in a research lab. It was not written for a journal. It was written at a desk in Jammu by someone who has spent nearly three decades in teacher education, watching good teachers struggle to keep up, institutions fall behind, and student teachers graduate into a world their training had not quite prepared them for.

That is not a criticism of anyone. Teacher education in India carries enormous weight. It carries the NEP 2020 vision, the ITEP reforms, NAAC expectations, the hopes of hundreds of thousands of young people who want to become teachers, and the practical realities of institutions doing their best with what they have. The people working within this system, including teacher educators and the principals of colleges of education, are not resistant to change. Most of them are simply waiting for something practical to hold on to.

This guide is an attempt to offer exactly that.

Artificial intelligence has arrived in education faster than most of us expected, and it is not going away. Within a couple of years of tools like ChatGPT becoming widely available, teachers and student teachers across the world were already using them, sometimes wisely, sometimes not, but almost always without guidance from the institutions responsible for their preparation. That gap between what is happening and what is being taught is what this guide seeks to close.

What you will find here is practical. Every chapter is organised around real problems that teacher educators and pre-service teachers face. Every suggestion has been considered in the context of Indian teacher education, not Silicon Valley, not a well-funded university in London, but the realities of teacher education programmes in cities, towns, and rural districts across this country. Where tools are recommended, they are free. Where examples are given, they are grounded. Where caution is warranted, it is stated plainly.

What you will not find here is hype. AI is not going to solve the deep structural challenges facing teacher education in India. It is not a magic answer to overcrowded classrooms, undertrained supervisors, or patchy school infrastructure. What it can do, when used thoughtfully, is make teacher preparation richer, more responsive, and more honest about what teaching actually demands.

This guide grew out of work at MIER College of Education, Jammu, an institution that has been seriously experimenting with technology-enhanced learning for several years. Many of the examples and approaches described here were developed, tested, and refined in that context. They are offered not as the only way, but as one institution's honest attempt to figure this out and to share what it has learned.

If you are a teacher educator wondering where to begin, this guide is for you. If you are a student teacher trying to work out how AI fits into your preparation, this guide is for you. If you are a principal or department head seeking to move your institution forward without losing your colleagues along the way, this guide is especially for you.

Read it the way it was written, practically, critically, and with your own students in mind.

Adit Gupta

MIER College of Education (Autonomous), Jammu

How to Use This Guide

There is no single right way to read this guide. It was designed to be useful at different entry points, depending on where you are and what you need most right now.

If you are new to AI in education, read from the beginning. Chapter 1 will give you a clear, jargon-free overview of what has changed and why it matters. The AIK framework introduced there, with its four practical lenses for working with AI, will make every subsequent chapter easier to follow.

If you are a busy teacher educator with a specific problem to solve, go straight to the chapter that addresses it. Each chapter is designed to stand alone. You do not need to have read Chapter 2 to benefit from Chapter 5.

If you are an institutional leader, a principal, a head of department, or responsible for academic policy, start with Chapters 1, 8, and 9. They will give you the strategic overview, the ethical grounding, and a practical starting plan. Then fill in the rest as your context requires.

At the end of every chapter, you will find a **Try This Week** box. Each box contains a single, concrete action that requires no budget, no institutional approval, and no technical expertise. These are the most important part of this guide. Reading about AI does not change anything. Trying something small does.

A Word on Tools

Every AI tool mentioned in this guide is either free or available at no cost in its basic form. No platform has been included because of any commercial relationship. Where tools have real limitations, such as in Indian language support, low-connectivity settings, or accuracy, those limitations are stated directly.

Tools change. Platforms update, improve, and occasionally disappear. Rather than anchoring this guide to specific product names that may be outdated by the time you read this, the focus throughout is on what you are trying to do and how to approach it. The specific tool you use matters less than the competence and judgement you bring to using it.

The Appendix at the back of this guide includes a curated list of tools that were free and functional at the time of writing. Treat it as a starting point, not a definitive list.

CHAPTER 1: Why AI, Why Now, Why Teacher Education

Section 1.1: What Has Actually Changed?

Not long ago, if a student teacher wanted help planning a Class 8 lesson on photosynthesis, they had a few options. They could consult their textbooks. They could ask a senior colleague. They could search the internet and piece something together from whatever they found. The process took time, the quality varied, and the result depended heavily on who they happened to know and what they happened to find.

Today, that same student teacher can open a free AI tool on their phone, type a request in plain English or Hindi, and receive a structured lesson plan in under thirty seconds. They can ask for it to be simplified for a mixed-ability class. They can ask for examples drawn from everyday life in a small town. They can ask for five different ways to explain the same concept and pick the one that feels right. The whole process takes less time than it used to take to find a halfway decent resource online.

That is what has changed. And it has changed fast.

It is worth being clear about the kind of change this is, because not every new technology deserves the attention it receives. Educational technology has a long history of promising to transform teaching, only to fade quietly. Interactive whiteboards gathered dust in staffrooms. Tablet initiatives stalled when the devices broke and the budget for replacements ran out. Online learning platforms were adopted enthusiastically but largely ignored once the initial excitement wore off.

AI is different for one very specific reason. Previous technologies changed how information was delivered. AI changes how knowledge is generated, shaped, and responded to. For the first time, a teacher or student teacher has access to something that can produce original, contextualised, personalised content on demand, in any subject and at any level, in response to whatever they need at that moment.

This does not make AI infallible. It makes mistakes. It sometimes produces content that sounds authoritative yet is factually incorrect. It can reflect biases present in the data it was trained on. It has no understanding of the specific children in a particular classroom in Rajouri, Mysuru, or Bhilai. Those limitations are real, and this guide will return to them throughout.

But the core change is real, too, and significant enough that teacher education cannot afford to ignore it any longer. The question is no longer whether AI will be part of the teaching landscape. It already is. The question is whether those responsible for preparing teachers will engage with it seriously enough to shape its use.

Section 1.2: Why Teacher Education Specifically, and Why First?

There is a version of this conversation that starts with schools. It asks how classroom teachers can use AI, how school students are already using it, and what schools should do about it. That is an important conversation, and it is happening in many places. But this guide starts one step earlier, because if teacher education does not respond first, everything that follows will be slower, more chaotic, and less effective than it should be.

Here is the simple logic. Every teacher who will enter an Indian classroom over the next ten to fifteen years is currently in a B.Ed. or ITEP programme, or will be shortly. What they learn during that preparation, the habits they form, the tools they become comfortable with, and the judgements they develop about what works and what does not will shape how they teach for the rest of their careers. Teacher education is not just a stepping stone to the classroom. It is where professional identity is formed.

If that formation happens without serious engagement with AI, we will produce a generation of teachers who are either afraid of it, dismissive of it, or using it badly without understanding why. All three outcomes are avoidable. But they are only avoidable if the people responsible for teacher preparation take this seriously now, not after the schools have already moved ahead.

There is another reason teacher education needs to lead rather than follow. Teacher educators are uniquely powerful. A single teacher educator who develops genuine AI competence and integrates it thoughtfully into their practice not only improves their own teaching. They influence every student teacher who passes through their course, potentially dozens each year, each of whom will go on to teach hundreds of school students over a career. The multiplier effect is extraordinary. No other professional development investment in education has that kind of reach.

This is not an abstract argument. At MIER College of Education in Jammu, integrating technology-enhanced learning into teacher preparation took several years of deliberate effort, including collaboration with the Commonwealth of Learning on a blended learning transformation across more than twenty courses. That experience showed, clearly and repeatedly, that when teacher educators themselves become genuinely competent and confident with a new approach, their student teachers follow with far less resistance than anyone expected. The barrier is almost never the student teachers. The barrier is the preparation they receive.

AI presents the same opportunity and the same responsibility. Teacher education institutions that engage with it seriously will produce teachers who are prepared for the classrooms they will actually enter. Those that do not will produce teachers who figure it out on their own, inconsistently, without guidance, and sometimes badly.

The choice of which of those two groups to belong to is available right now. That is why this guide exists.

Section 1.3: What Is a Realistic Expectation? Introducing the AIK Framework

Before we go any further, it is worth being honest about what AI can and cannot do. Not because the limitations are more important than the possibilities, but because unrealistic expectations are one of the main reasons people give up on new approaches too quickly. They try something, it does not work the way they imagined, and they conclude that the whole thing was overrated. That pattern has happened with enough educational technologies already. It does not need to happen again with AI.

So here is an honest picture.

What AI can genuinely do well

AI can generate content quickly. Lesson plans, quiz questions, case scenarios, feedback on written work, rubrics, explanations of difficult concepts in simpler language, translations across Indian languages, summaries of long documents. These are things AI does reliably and fast, and they represent real savings of time and effort for teacher educators and student teachers who are already stretched.

AI can respond to context. If you tell it that you are working with B.Ed. students in a rural internship setting, preparing a lesson for a multilingual Class 6, it will adjust what it produces accordingly. That responsiveness is genuinely useful and genuinely different from anything that existed before.

AI can be a thinking partner. It can push back on ideas, suggest alternatives, ask clarifying questions, and help you think through a problem more systematically. Used this way, it is less like a tool and more like a well-read colleague who is always available and never too busy.

What AI cannot do

AI cannot know your students. It has no idea who is sitting in the third row, what that student struggled with last week, or what kind of encouragement they need today. That knowledge lives with the teacher, and no amount of AI capability will change that.

AI cannot replace professional judgement. It can produce a lesson plan, but it cannot decide whether that plan is right for this class, on this day, with this particular learning objective in mind. That decision belongs to the teacher.

AI makes mistakes, sometimes confidently. It can produce factually incorrect information in a tone that sounds completely authoritative. This is one of its most important limitations,

and it is the reason this guide returns repeatedly to the skill of evaluating what AI produces rather than simply accepting it.

AI is not neutral. It reflects patterns in the data it was trained on, which means it can carry biases, particularly around language, culture, and context. An AI tool trained primarily on English-language data will not always serve multilingual Indian classrooms well without careful, critical use.

The AIK Framework: Four Practical Lenses

Understanding what AI can and cannot do is the starting point. But understanding alone does not make anyone a competent user of AI. What is needed is a set of practical skills for working with AI effectively, critically, and purposefully.

This is where the AI Interaction Knowledge framework, referred to throughout this guide as AIK, becomes useful. AIK was developed through research and practice at MIER College of Education and proposes that working effectively with AI requires four interconnected competencies. These are not technical skills. They do not require any programming knowledge or special expertise. They are thinking skills, specifically the kind of thinking that turns AI from an unpredictable tool into a reliable professional resource.

The four dimensions of AIK are as follows.

Prompt Design Competency is the ability to ask AI the right way. Most people who are disappointed with AI have asked it something vague, received something generic in return, and concluded that AI is not very useful. The problem is rarely the AI. It is the prompt. Asking AI to "make a lesson plan" produces something very different from asking it to "create a 40-minute lesson plan for Class 9 students on the water cycle, using everyday examples from a semi-urban Indian setting, with one activity that does not require any devices." The second request takes thirty seconds longer to write and produces something ten times more useful. Prompt Design Competency is the skill of knowing how to construct that second kind of request.

Iterative Refinement Competency is the ability to improve what you get through a continuing conversation with AI. The best AI outputs rarely come from a single exchange. They come from a process: you ask, you evaluate what comes back, you identify what is missing or what needs to change, and you ask again with that specific adjustment. This back-and-forth is not a sign that AI has failed. It is how AI is meant to be used. Iterative Refinement Competency is the skill of knowing how to keep that conversation productive rather than going around in circles.

Output Evaluation Competency is the ability to judge what AI produces. This is perhaps the most important of the four dimensions, and the one most often neglected. Every piece of AI-generated content needs to pass through a human filter before it is used in a classroom,

shared with a student, or submitted as work. Is the information accurate? Is it appropriate for this context and this age group? Does it reflect the values and culture of this community? Does it actually meet the learning objective it was meant to serve? These are questions that only a knowledgeable, thoughtful professional can answer. Output Evaluation Competency is the skill of asking those questions consistently and critically.

AI Limitation Understanding is the meta-cognitive dimension of AIK. It is the awareness of when AI is the right tool for a task and when it is not. A student teacher who uses AI to generate a reflective journal entry has not reflected. A teacher educator who accepts an AI-generated lesson observation report has not supervised. Knowing where AI adds value and where it undermines the very purpose of an activity is a judgement that has to be developed deliberately. AI Limitation Understanding is the skill of making that judgement well.

These four dimensions are not a checklist to be completed once and set aside. They are lenses that apply every time you use AI for any professional purpose. Throughout this guide, you will see them referred to in each chapter as practical anchors for the specific applications discussed.

The figure below presents the AIK framework visually. Keep it in mind as you move through the chapters that follow.

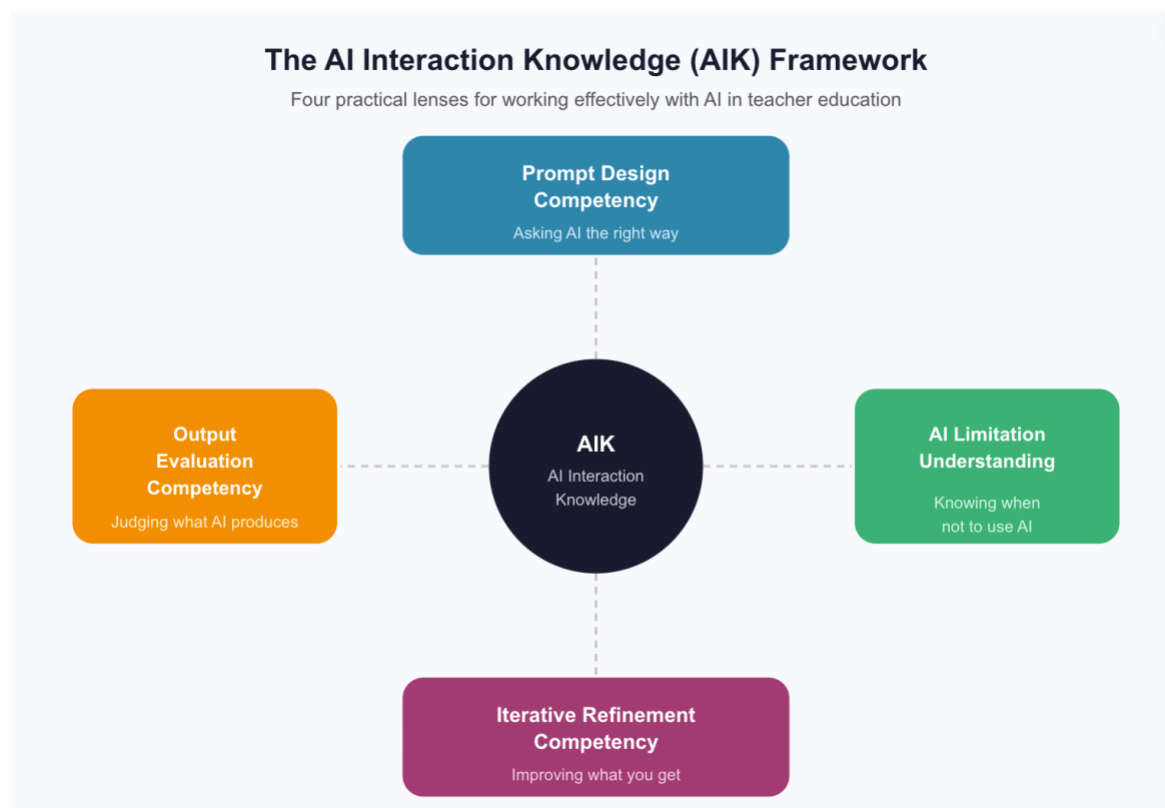


Figure 1: The AIK Framework

Section 1.4: Where Do You Stand? A Quick Self-Assessment

Before moving forward, take five minutes with this self-assessment. It is not a test. It is a starting point that helps you locate yourself honestly and use this guide as efficiently as possible.

Read each statement and circle or tick your score using this scale:

2 = Yes, confidently | 1 = Partially or sometimes | 0 = Not yet

Table 1: AIK Self-Assessment for Teacher Educators

#	Statement	0	1	2	Your Score
Part A: Your Relationship with AI					
1	I have used an AI tool at least once for a professional task such as planning, writing, or giving feedback.	0	1	2	
2	I understand what a prompt is and why the way I phrase a request affects what AI produces.	0	1	2	
3	I can name at least two free AI tools I could use tomorrow without any technical setup.	0	1	2	
Part A Total					/6
Part B: Your Teaching and Supervision Practice					
4	I have discussed AI, formally or informally, with my student teachers.	0	1	2	
5	I have redesigned or considered redesigning at least one assignment because AI could complete it too easily.	0	1	2	
6	I feel able to judge whether AI-generated content is accurate, appropriate, and suitable for my context.	0	1	2	
Part B Total					/6
Part C: Your Institution					
7	My department has some written or verbal guidance on AI use, however basic.	0	1	2	

8	I could direct a colleague to at least one useful resource on AI in teacher education right now.	0	1	2	
	Part C Total				/4
Part D: Your Broader Readiness					
9	I believe developing AI competence is a professional responsibility for teacher educators, not just something student teachers should figure out on their own.	0	1	2	
10	I feel ready to try at least one AI-supported activity with my student teachers within the next two weeks.	0	1	2	
	Part D Total				/4
	TOTAL SCORE				/20

What Your Score Means

Score	Your Level	What This Means	Your Priority Chapters
17 to 20	Ready to Lead	You have strong foundations and genuine confidence. Use this guide to sharpen your practice and support colleagues.	Chapters 7, 8, and 9
11 to 16	Building Confidence	You are moving in the right direction. A few focused chapters will close the remaining gaps quickly.	Chapters 2, 3, and 6
5 to 10	Getting Started	You are at exactly the right place at the right time. This guide was written with you in mind.	Start at Chapter 1 and read in sequence
0 to 4	Starting Fresh	No prior experience is needed here. Every expert started exactly where you are now.	Start at Chapter 1, go slowly, try the Try This Week boxes first

Note your score and your level somewhere you will find it again. When you reach the Closing Note at the end of this guide, score yourself a second time. The gap between the two scores is your evidence of growth.

TRY THIS WEEK

Ask any AI tool one question related to something you are currently teaching or supervising. Then ask the same question again, but this time add three specific details: the subject, the level, and the setting. Compare the two responses. That difference is Prompt Design Competency in action. Note which of the four AIK dimensions felt most unfamiliar when you read about them in Section 1.3. That is where to pay closest attention as you move through the chapters ahead.

CHAPTER 2: The Teacher Educator's Own Practice First

Before we talk about what student teachers should do with AI, we need to talk about you.

Section 2.1: Why You Need to Go First

There is a tendency in institutions to think about AI as something to manage in students, to set rules about it, to warn against its misuse, and to design assessments that prevent it. That is understandable. But it puts the cart before the horse.

If you have not used AI yourself, regularly and purposefully, you cannot supervise its use by others. You cannot spot when a student teacher has outsourced their thinking to it. You cannot design assessments that remain meaningful in an AI-accessible world. And you cannot model the kind of critical, reflective engagement with new tools that good teaching has always required.

This chapter is about your practice first. Not your institution's policy. Not your student teachers' assignments. Yours.

The good news is that starting is simpler than most people expect. You do not need a training programme or a technology budget. You need a free account on any major AI platform and thirty minutes of genuine curiosity. Everything in this chapter can be tried today, on your own, without anyone else's permission or involvement.

Section 2.2: Three Things You Can Do This Week

The three applications below are entry points. They are not the most sophisticated things AI can do. They are the most immediately useful, and they are the ones most likely to make a genuine difference to your working week within days of trying them.

Design better teaching sessions

Preparing a discussion on classroom management? Ask AI to generate six scenario-based questions drawn from real B.Ed. classroom situations. Preparing a lecture on assessment? Ask it to produce five common misconceptions that student teachers hold about formative evaluation. You will not use everything it produces. But you will almost certainly find two or three ideas you would not have thought of on your own, and you will find them in under two minutes.

The AIK lens here is Prompt Design Competency. The more specific your request, the more useful the output. "Give me discussion questions on classroom management for second-

year B.Ed. students who are about to begin their school internship" will outperform "give me classroom management questions" every single time.

Give faster, richer feedback on student work

Written feedback is one of the most time-consuming parts of a teacher educator's week. AI can help in a specific and bounded way. Write your initial feedback as you normally would. Then paste it into an AI tool and ask: "How could this feedback be more specific and more actionable for a student teacher?" Use whatever improves your original. Discard the rest.

This is not about replacing your feedback with AI-generated text. Your professional judgement about the student's work remains entirely yours. AI simply helps you express that judgement more clearly and usefully.

Generate teaching scenarios and case vignettes

Good case-based teaching requires a steady supply of realistic, contextually appropriate scenarios. Creating them from scratch takes time. Ask AI to generate a classroom scenario involving a student teacher who struggles to manage a multilingual Class 7 during a science lesson. Ask for it to be set in a government school in a semi-urban district. Ask for three possible ways the situation could unfold. Evaluate what comes back using your Output Evaluation Competency, adjust what needs adjusting, and you have a teaching case ready for your next session.

Section 2.3: Redesigning Assignments for an AI-Accessible World

This is where many teacher educators feel the most pressure, and understandably so. If a student teacher can paste your assignment question into AI and receive a competent answer in thirty seconds, what is the point of the assignment?

The honest answer is that if AI can fully complete your assignment without any input from the student's actual experience, observations, or professional judgement, the assignment was probably not assessing what you thought it was assessing. AI has simply made that visible.

The solution is not to ban AI. It is to design assignments that require what AI cannot provide: the student-teacher's own classroom experience, reflections, and specific context.

Table 2 offers three redesigned assignment formats that remain meaningful regardless of AI access.

Table 2: Redesigning Assignments for an AI-Accessible World

Traditional Assignment	The Problem	Redesigned Version	Why AI Cannot Do It
Write a lesson plan on any topic of your choice.	AI produces a competent lesson plan in seconds.	Plan a lesson you actually taught during internship. Annotate each section explaining what you changed from your original plan and why.	Requires real classroom experience and genuine reflection.
Write an essay on formative assessment.	AI writes fluent essays on any topic effortlessly.	Observe one assessment moment during your internship. Analyse it against two formative assessment principles. Include what you would do differently.	Requires a specific observation that only the student teacher witnessed.
Describe three classroom management strategies.	AI lists strategies accurately and at length.	Describe one classroom management challenge you personally faced. Evaluate two strategies you tried. Reflect on what worked and what did not.	Requires personal experience, honest reflection, and professional judgement.

Section 2.4: Your Department's AI Use Policy — A Starting Draft

Most teacher education colleges/departments in India do not yet have a written AI use policy. That is not a criticism. The technology moved faster than any reasonable institutional process could follow. But the absence of guidance leaves student teachers and faculty alike in an uncomfortable grey area.

A policy does not need to be long or legally complex. It needs to answer three questions clearly: what is permitted, what is not permitted, and what is expected when AI is used. Figure 2 offers a ready-to-use draft. The language is plain, and the categories are simple. Adapt it to suit your institution's tone, have one conversation with your colleagues before circulating it, and treat it as a living document that you revisit as practice evolves. It does not require senior approval to be useful at the course level. Start there.

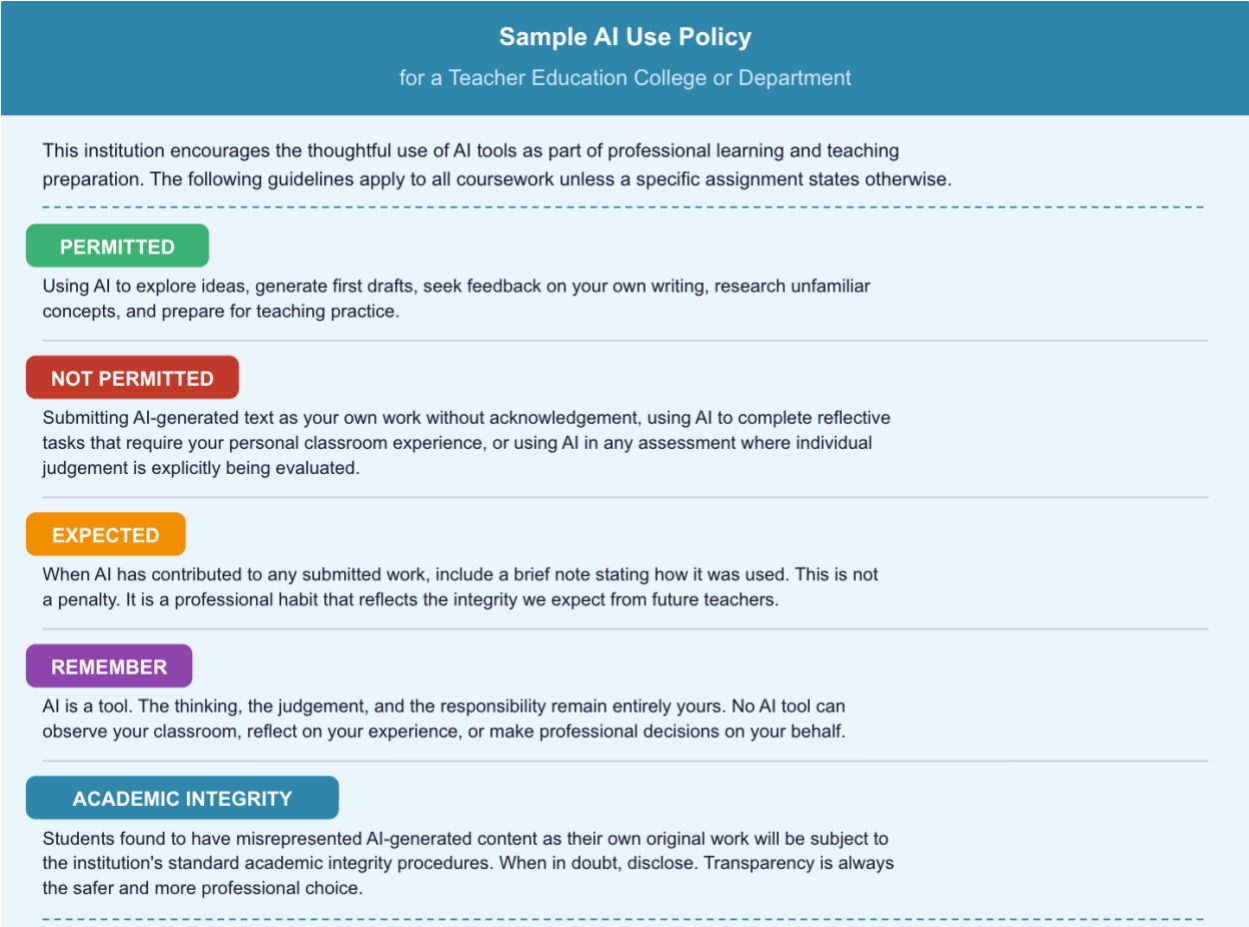


Figure 2: Sample AI Use Policy for a Teacher Education College or Department

TRY THIS WEEK

Take one assignment you currently set for student teachers. Paste the question into a free AI tool and read what it produces. Ask yourself honestly: Does this response demonstrate what I actually want my students to learn? If not, you already know what the assignment was testing. If yes, redesign the question using Table 2 as your guide. Either outcome is useful.

CHAPTER 3: Helping Student Teachers Plan Better Lessons

Lesson planning is where student teachers spend the most time and feel the most anxious. It does not have to be that way.

Section 3.1: AI as a Planning Partner, Not a Ghostwriter

The single most important thing to establish before student teachers use AI for lesson planning is this: AI is a starting point, not a finishing line.

This distinction matters enormously. A student teacher who pastes a topic into AI and submits whatever comes back has not planned a lesson. They have copied one. They have also missed the entire point of the planning process, which is not to produce a document but to think carefully about how learning happens.

Used well, AI accelerates and enriches that thinking. It generates options the student teacher would not have considered. It suggests examples drawn from contexts they specify. It offers alternative explanations for difficult concepts. It does the first-draft work that frees the student teacher to focus on the more important second-draft work, which is adapting, questioning, and improving what AI produced.

That is the framing student teachers need before they open any AI tool. Planning with AI is a professional skill. It requires judgement, not just access.

Section 3.2: A Lesson Plan Built with AI — A Worked Example

The best way to understand how AI-assisted planning works is to see it happen from beginning to end. The example below follows a second-year B.Ed. student teacher preparing a lesson on the water cycle for Class 6 in a government school setting.

Step 1: The first prompt

The student teacher opens a free AI tool and types:

"Create a 40-minute lesson plan on the water cycle for Class 6 students in a government school in a semi-urban setting. The class has 42 students, mixed ability, and limited access to devices. Use everyday examples from local life."

The AI produces a structured plan with an introduction, main activity, and closing assessment. It suggests using a local river or seasonal rainfall as a context hook. It proposes a group activity using simple materials available in most schools.

Step 2: Applying Output Evaluation Competency

The student teacher reads the plan critically. Two things need adjustment. The suggested activity assumes access to measuring cylinders, which this school does not have. The explanation of evaporation uses vocabulary too advanced for this class level. Both are fixable.

Step 3: Iterative Refinement in action

The student teacher goes back to AI:

"The activity uses equipment that this school does not have. Suggest an alternative using only paper, a blackboard, and chalk. Also, simplify the explanation of evaporation for students reading at a Class 4 level."

The revised output is significantly more usable. One more exchange addresses the closing assessment question, making it open-ended rather than recall-based.

Step 4: The student teacher's own contribution

The final plan includes the student teacher's knowledge of this specific class, the timing adjustments they know from experience, and the particular student who will need a differentiated task during the group activity. None of that came from AI. All of it came from the student teacher. That combination is what good AI-assisted planning looks like.

Section 3.3: Planning for Multilingual and Mixed-Ability Classrooms

One of the most persistent challenges in Indian teacher education is preparing student teachers for classrooms that do not look like the textbook examples they study. Most school classrooms in India are multilingual, mixed-ability, and under-resourced. Most lesson planning templates used in teacher education programmes do not reflect that reality.

AI is genuinely useful here, if prompted correctly.

A student teacher preparing for a multilingual Class 7 Hindi-medium school can ask AI to generate the same concept explanation in two languages simultaneously, or suggest vocabulary scaffolding for students whose home language differs from the medium of instruction. A student teacher working with a mixed-ability class can ask AI to generate three versions of the same activity at different levels of complexity, then select and adapt the most appropriate one for each learner group.

The key is specificity in the prompt. Vague requests produce generic outputs. The more the student teacher describes the actual classroom they are preparing for, the more useful AI

becomes. This is Prompt Design Competency applied directly to the realities of Indian schooling.

Table 3 shows how small changes to a prompt produce significantly more contextually appropriate outputs.

Table 3: How Prompt Specificity Improves AI Output for Lesson Planning

Vague Prompt	Specific Prompt	What Changes in the Output
Plan a lesson on fractions for Class 5.	Plan a 35-minute lesson on fractions for a Class 5 Hindi medium class with 38 students, including 8 who are significantly behind grade level. Use market-based examples familiar to children in a small town.	Output includes differentiated tasks, local context examples, and language appropriate for the medium of instruction.
Give me a science activity on plants.	Give me a no-device activity on plant parts for Class 4 in a rural school with no lab equipment. It should work for a class that includes students from farming families.	Output draws on agricultural context, uses materials available in any rural setting, and avoids assumptions about equipment.
How do I explain the Constitution to Class 8?	Explain the Preamble of the Indian Constitution for Class 8 students in a school near the Line of Control where civic identity is personally meaningful. Keep it age-appropriate and discussion-based.	Output is contextually sensitive, prompts genuine discussion, and avoids generic civics textbook language.

Section 3.4: What the Supervisor Should Look For

When a teacher educator reviews an AI-assisted lesson plan, the question is not whether AI was used. In most cases, it will have been. The question is whether the student teacher has thought.

The checklist in Figure 3 gives supervisors a practical framework for that review. It can also be shared directly with student teachers, so they know what is expected before they submit.

Supervisor's Checklist for Reviewing AI-Assisted Lesson Plans

Review each item. A strong plan should meet all six criteria.

What to Look For	Yes	Needs Work
1. Context fit Does the plan reflect the actual classroom: level, language, resources, and setting?	☐	☐
2. Learning objective clarity Is the objective specific, measurable, and aligned to the activity and assessment?	☐	☐
3. Evidence of adaptation Has the student teacher modified the AI output, not just accepted it as produced?	☐	☐
4. Accuracy of content Has the student teacher verified that subject content in the plan is factually correct?	☐	☐
5. Assessment alignment Does the closing assessment actually check whether the learning objective was met?	☐	☐
6. Teacher's own thinking Is there evidence of the student teacher's own professional judgement anywhere in the plan?	☐	☐

A plan that scores Yes on items 1, 3, and 6 reflects genuine engagement with the planning process.

A plan that scores Needs Work on items 3 and 6 suggests the student teacher has not moved beyond the AI output.

Figure 3: Supervisor's Checklist for Reviewing AI-Assisted Lesson Plans

TRY THIS WEEK

Ask a student teacher to plan one lesson using AI as a first-draft tool. Then ask them to annotate the plan in a different colour, marking every change they made and writing a sentence explaining why. Collect those annotations. They will tell you more about the student teacher's thinking than the plan itself ever could.

CHAPTER 4: Micro-Teaching and Simulated Practice

The rehearsal before the performance matters more than most teacher education programmes admit.

Section 4.1: Why Micro-Teaching Needs a Rethink

Micro-teaching has been a cornerstone of teacher preparation for decades. The idea is sound: give student teachers a low-stakes space to practise before they face a real classroom. The problem is that in most teacher education programmes, the low-stakes space is still high-pressure. Peers are watching. The supervisor is evaluating. The student teacher performs rather than practises.

AI changes this in a genuinely useful way. It offers something that no peer group or supervisor can offer: an infinitely patient, always available rehearsal partner that does not judge, does not remember last week's poor performance, and can play any role the student teacher needs it to play.

This chapter shows how to use that possibility practically and purposefully.

Section 4.2: AI as a Simulated Student

The most immediately useful application of AI in micro-teaching preparation is role play. A student teacher can ask AI to play the role of a student in their target class and then practise explaining a concept until the explanation actually works.

This is more demanding than it sounds. AI, when prompted well, asks the kinds of questions that real students ask. It expresses confusion in ways that reveal whether the teacher's explanation is actually clear or just familiar to the teacher. It pushes back. It misunderstands. And unlike a peer pretending to be a student, it does not let the student teacher off the hook out of politeness.

Three worked examples are shown in Table 4. Each shows the role-play prompt a student teacher might use and what kind of practice it generates.

Table 4: Using AI as a Simulated Student — Three Worked Examples

Subject and Level	Role Play Prompt	What the Practice Develops
Science, Class 7: Photosynthesis	"Play the role of a Class 7 student who understands that plants need sunlight but cannot understand why they also need carbon dioxide. Keep asking questions until my explanation makes sense to you."	Clarity of explanation, ability to handle conceptual confusion, patience with repeated questioning.
Mathematics, Class 5: Fractions	"Play a Class 5 student who keeps confusing the numerator and denominator. Respond to my teaching naturally, including making the same mistake again even after I correct it once."	Diagnostic skill, ability to try multiple explanatory approaches, tolerance for slow progress.
Social Science, Class 9: Democracy	"Play a Class 9 student who is engaged but keeps asking why democracy is better than other systems. Push back on every answer I give with a follow-up question."	Handling challenge, depth of subject knowledge, composure under questioning.

Section 4.3: Preparing for Difficult Classroom Moments

Beyond concept explanation, AI can help student teachers rehearse the moments that no lesson plan prepares them for. A student who challenges the teacher's authority. A question the teacher cannot answer. A classroom that loses focus mid-lesson. These situations cause the most anxiety among pre-service teachers, and they are almost never practised before the real thing happens.

AI can simulate all of them. The student teacher simply describes the situation and asks AI to play it out. What makes this valuable is not that AI replicates a real classroom perfectly. It does not. What it does is force the student teacher to think on their feet, try a response, evaluate whether it worked, and try again. That cycle of attempt and reflection is exactly what micro-teaching is supposed to create.

Figure 4 presents a simple protocol for running an AI-assisted difficult-moment rehearsal. It can be used independently by student teachers or facilitated by a teacher educator as a structured pre-practicum activity.

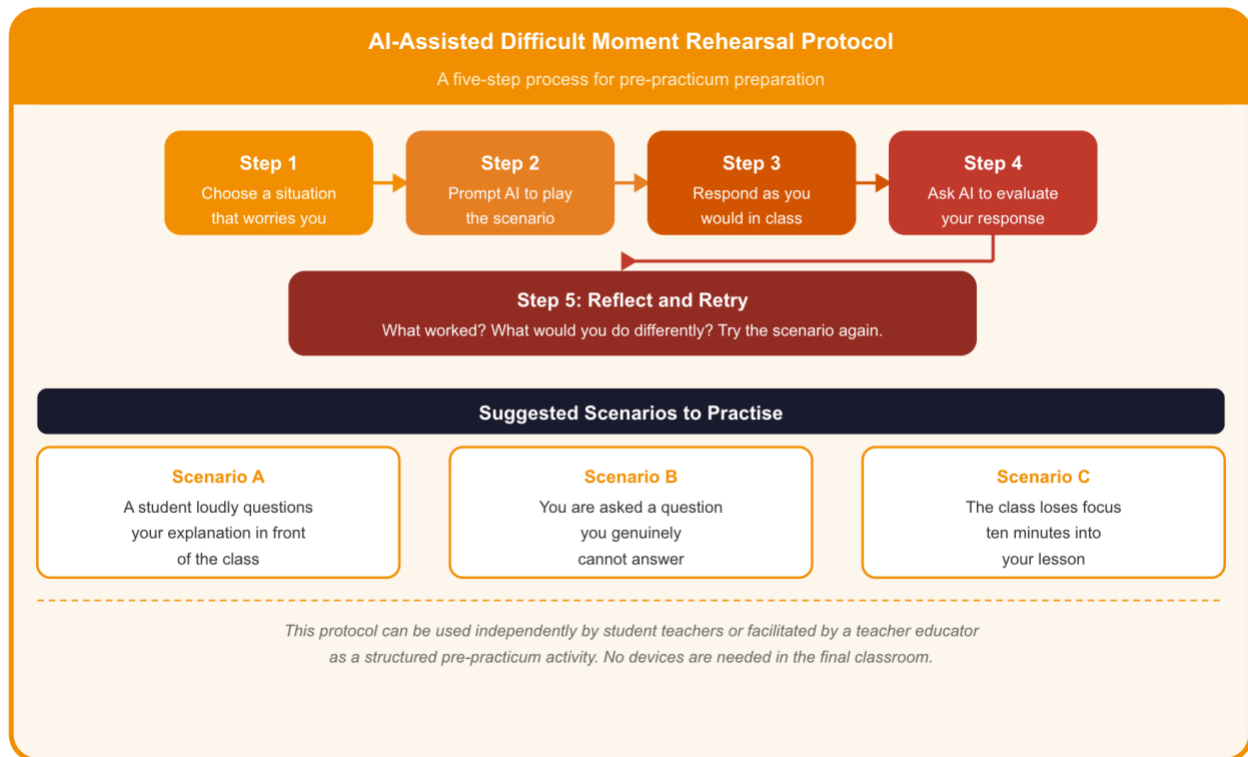


Figure 4: AI-Assisted Difficult Moment Rehearsal Protocol

Section 4.4: Analysing Your Own Micro-Teaching

One of the most valuable things a student teacher can do after a micro-teaching session is to analyse it honestly. Most do not, because reviewing one's own performance is uncomfortable, and there is rarely a structured way to do it.

AI makes this more accessible. The process is straightforward.

First, if the micro-teaching session was recorded, the student teacher uses a free transcription tool such as Otter.ai or even Google's built-in transcription on an Android device to convert the recording to text. Second, they paste the transcript into an AI tool and ask specific analytical questions. Not "was I good?" but "how many times did I ask a closed question versus an open question?" or "at what points did student responses suggest confusion?" or "how long was my average wait time after asking a question?"

These are questions that a busy supervisor with twenty student teachers to observe simply cannot answer for every session. AI can. And the act of asking them teaches the student teacher what good teaching looks and sounds like, which is ultimately more valuable than being told.

This is Output Evaluation Competency applied to the student teacher's own practice, turning the camera inward rather than outward.

TRY THIS WEEK

Before the next micro-teaching session, ask one student teacher to spend ten minutes with an AI tool playing the role of a confused student on their chosen topic. Ask them to bring a written note of two things the rehearsal revealed that they had not anticipated. Discuss those two things as a group before the session begins. That ten-minute conversation will be more useful than most pre-micro-teaching briefings.

CHAPTER 5: The Practicum and School Internship

The practicum is where theory meets reality. It is also where most student teachers feel most alone.

Section 5.1: The Supervision Gap

The school internship is the most important phase of pre-service teacher preparation. It is also the most under-supported. In most B.Ed. and ITEP programmes across India, student teachers spend weeks in schools with minimal supervision, infrequent visits from their college mentor, and cooperating teachers who are willing but often untrained in providing structured feedback.

This is not a criticism of anyone involved. Teacher education institutions are stretched. Schools are busy. The ratio of supervisors to student teachers makes meaningful individual support difficult in most contexts.

AI cannot replace a good mentor. What it can do is partially fill the gap that exists when a good mentor is not available, which, in the Indian context, is more often than anyone would like to admit.

Section 5.2: Structured Observation with AI Support

Before a student teacher walks into a school for an observation visit, they typically receive one instruction: observe the teacher and write a report. That instruction is almost never specific enough to produce useful learning.

AI can help generate a structured observation framework tailored to exactly what the student teacher will observe. The process takes five minutes and transforms the quality of what they notice and record.

A student teacher heading to observe a Class 8 mathematics lesson on algebra can ask AI to generate an observation checklist focused on how the teacher handles student errors, manages pacing, and transitions between explanation and practice. The result is not a generic observation form. It is a purposeful lens for that specific lesson, in that specific subject, at that specific level.

Table 5 shows three examples of how a tailored observation prompt produces a more focused framework than a standard observation template.

Table 5: Tailored AI-Generated Observation Frameworks

Observation Context	Standard Approach	AI-Tailored Framework Focus
Class 8 Mathematics: Algebra	Generic teaching observation form covering voice, board work, and timing.	How does the teacher respond to student errors? How is the transition from worked examples to independent practice managed?
Class 6 Science: Water Cycle	Generic checklist covering questioning techniques and student engagement.	What analogies does the teacher use? How are multilingual students supported during explanation?
Class 10 English: Essay Writing	Generic form covering lesson structure and classroom management.	How does the teacher scaffold the writing process? What feedback strategies are used during the activity?

Section 5.3: Reflective Journaling with AI as a Thinking Partner

Reflective journaling is a standard requirement in most practicum programmes. It is also one of the most frequently faked. Student teachers write what they think their supervisor wants to read rather than what they actually experienced, thought, or struggled with.

AI can change this dynamic, but only if it is used in the right way. The risk is that student teachers ask AI to write their reflections for them, which defeats the purpose entirely. The opportunity is to use AI as a thinking partner that asks the questions the student teacher needs to be asked.

The protocol given in Figure 5 makes this distinction concrete. It should be shared with student teachers at the start of their practicum.

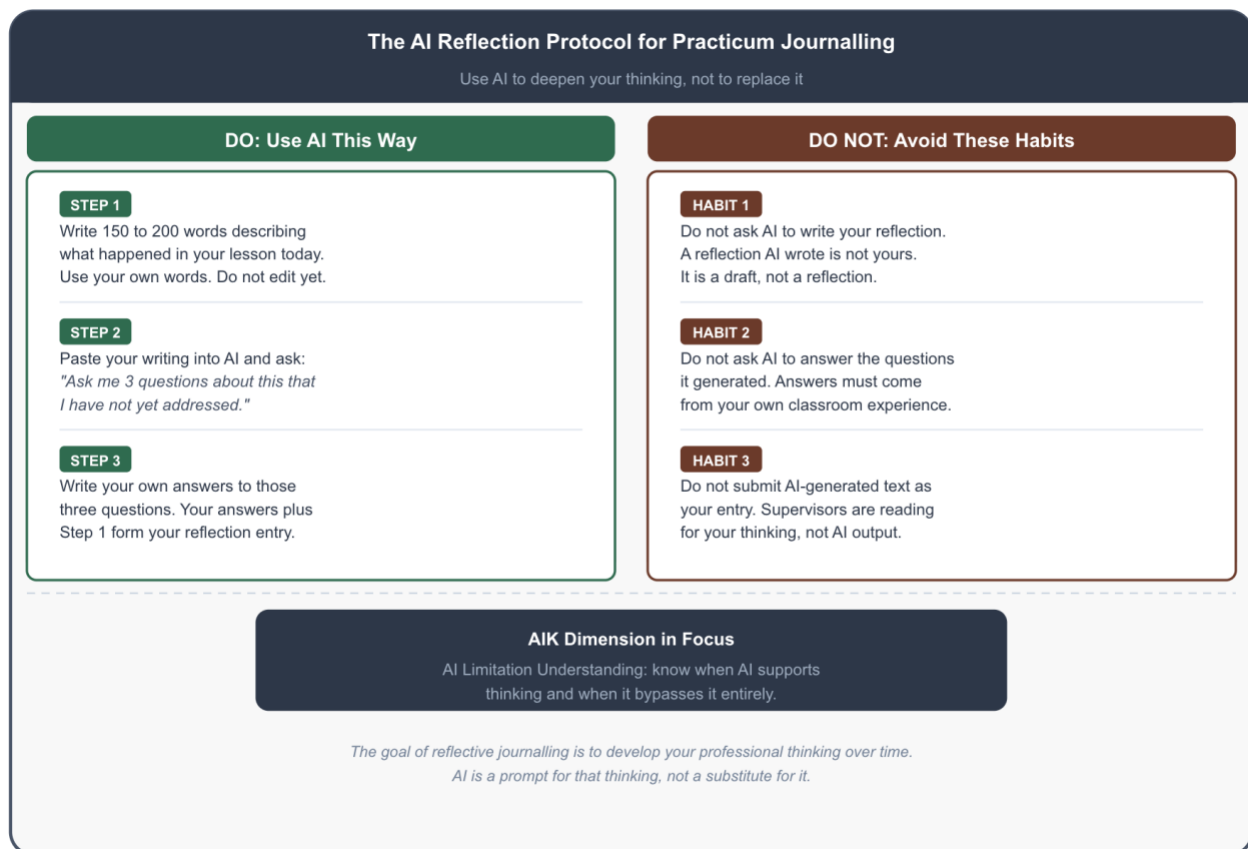


Figure 5: The AI Reflection Protocol for Practicum Journalling

Section 5.4: When the Lesson Goes Wrong

Every student teacher has a lesson that goes badly. Something does not land, the class loses focus, the timing collapses, or a student says something that throws the whole plan off course. How the student teacher processes that experience matters as much as the lesson itself.

AI can support that processing through a structured debrief. The student teacher describes what happened in plain terms and then asks AI a specific sequence of questions rather than a general one like "what went wrong?" That general question produces a generic answer. Specific questions produce useful ones.

A practical debrief sequence looks like this. First, ask AI: "Based on what I have described, what are two possible reasons the activity lost momentum at the fifteen-minute mark?" Second, ask: "What would a more experienced teacher have done differently at that point, and why?" Third, ask: "What is one thing I could try in the next lesson to address this?" Each question targets a specific kind of thinking: diagnostic, analytical, and forward-looking. Together, they turn a demoralising experience into a professional learning moment.

The debrief works best when the student teacher writes their own responses after each AI question rather than simply reading what AI produces. The writing is the thinking. That is where the learning lives.

Section 5.5: What the School Mentor Can Do

Many cooperating teachers in schools are genuinely invested in supporting student teachers, but are unsure how to give structured feedback. Most were never taught how. AI can help here, too, in a very simple way.

A cooperating teacher who observed a lesson can describe what they saw in two or three sentences and ask AI to generate three specific, constructive feedback questions to discuss with the student teacher. Not evaluative statements. Questions. "What were you hoping would happen when you asked the class to work in groups?" or "At what point did you feel you lost their attention, and what did you try?" These questions open a professional conversation rather than closing one down with a judgement.

This approach requires no training, no device in the classroom, and no technical expertise beyond the ability to type a few sentences on a phone. It is one of the most accessible AI applications in this entire guide, and one of the most practically useful.

TRY THIS WEEK

Before the next practicum visit, ask each student teacher to write one sentence completing this prompt: "The moment I am most nervous about during my internship is..." Collect the responses. Paste them together into an AI tool and ask it to generate a tailored observation framework and a debrief question set for the top three emerging concerns. Share the results with your student teachers before they go into schools. That preparation takes twenty minutes and addresses fears that most practicum programmes never name directly.

CHAPTER 6: Assessment, Feedback, and Portfolios

Assessment is the part of teaching that most student teachers fear. It should be the part they find most interesting.

Section 6.1: Why Assessment Needs to Change

For decades, assessment in teacher education has meant one thing: a written examination at the end of the semester. The student teacher memorises, reproduces, and moves on. What they actually learned about teaching, how they grew as a professional, what they can do in a classroom, none of that is captured by a three-hour paper.

NEP 2020 calls for a shift from recall-based assessment to competency-based evaluation. The UGC has pushed institutions towards continuous internal assessment. NAAC expects evidence of student learning, not just examination scores. The policy direction is clear. What has been missing is a practical model that institutions can actually implement.

At MIER College of Education, this challenge led to the development of the Continuous and Comprehensive Evaluation model, referred to throughout this guide as C²E. It is not a theoretical framework. It is a working assessment system, implemented across courses, refined through experience, and designed specifically for the realities of Indian teacher education.

Section 6.2: The C²E Four-Assessment Model

The C²E model distributes assessment across four components, each targeting a different dimension of teacher competence. No single component carries all the weight. Together, they build a picture of the student teacher as a developing professional rather than a test-taker.

Figure 6 presents the model visually. A full description of each component follows.

A1: Analytical Assignment requires student teachers to research a topic, construct an argument, and demonstrate higher-order thinking. It is submitted in two stages: a preliminary outline with sources and a final piece, with feedback given between the two stages. AI can support the planning process and help student teachers locate relevant sources, but the argument and analysis must be the student teacher's own.

A2: Open-Book Scenario-Based Examination presents student teachers with a realistic classroom situation and asks them to analyse and respond to it using any resources they have. It assesses reasoning and professional judgement rather than memory. AI can assist

teacher educators in designing the scenarios and rubrics, but cannot complete the task on the student teacher's behalf in any meaningful way.

A3: ICT-Based Quiz uses digital platforms to administer short, concept-focused assessments at regular intervals throughout the semester. These provide diagnostic feedback to both student teachers and faculty. AI is genuinely useful here for generating well-constructed questions and plausible distractors that test understanding rather than recall.

A4: Micro-Credential requires student teachers to complete a recognised short course from a platform such as SWAYAM, NPTEL, LinkedIn Learning or Coursera, and to submit a brief reflective report connecting what they learned to their teaching practice. It builds the habit of self-directed professional learning that good teachers sustain throughout their careers.

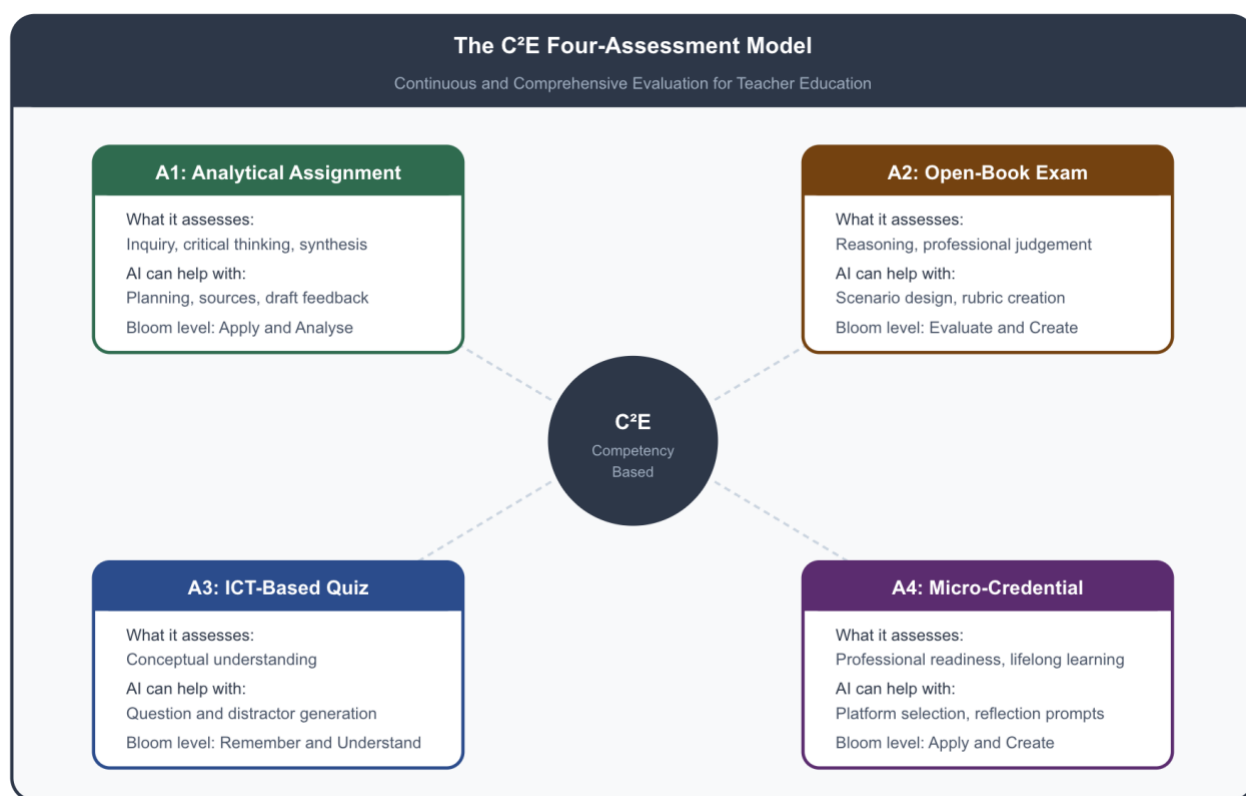


Figure 6: The C²E Four-Assessment Model in Teacher Education

Section 6.3: Using AI to Give Better Feedback

Written feedback is one of the most time-consuming parts of a teacher educator's week and one of the most valuable things they can offer a student teacher. The problem is that when

time is short, feedback becomes generic. "Good effort." "Needs more depth." "See me." These comments do not help anyone grow.

AI can help make feedback more specific without taking more time. The process is simple. Write your initial response to the student's work as you normally would. Then paste both the student's work and your feedback into an AI tool and ask: "How could this feedback be more specific and more actionable?" Read what comes back. Use what improves your original. Discard what does not.

The key principle is that your professional judgement about the quality of the work remains entirely yours. AI is helping you express that judgement more usefully, not forming it for you. That distinction is important and worth making explicit to student teachers when you model this process with them.

Section 6.4: Portfolios, Rubrics, and Academic Integrity

Teaching portfolios are one of the most powerful assessment tools in teacher education and one of the most poorly implemented. Most student teachers treat them as a collection exercise, gather documents, and present them in a folder. A portfolio should tell the story of a developing professional. AI can help student teachers think about that story by asking them reflective questions about the evidence they are selecting and what it shows about their growth.

Rubrics that genuinely differentiate between performance levels are harder to write than most people expect. AI is useful here. Ask it to generate a rubric for a specific assessment task, evaluate what it produces using Output Evaluation Competency, and refine it through iteration. The resulting rubric will almost always be clearer and more specific than one written under time pressure from scratch.

Academic integrity in an AI-accessible world is not about prohibition. It is about transparency. Student teachers should be taught to disclose how AI contributed to any piece of submitted work, not because they are being policed but because that habit of transparency is exactly what they will need to model for their own school students in the years ahead.

TRY THIS WEEK

Take the most recent piece of written feedback you gave a student teacher. Paste both their work and your feedback into a free AI tool. Ask: "How could this feedback be more specific and more actionable?" Read the response. If it suggests improvements, use them. If not, you have just confirmed the quality of your own feedback. Either outcome is useful.

CHAPTER 7: Multilingual Classrooms and Low-Resource Settings

Most AI guides assume everyone has fast internet, a laptop, and works in English. This chapter does not.

Section 7.1: The Reality This Guide Cannot Ignore

Pick up almost any practical guide on AI in education and you will notice something. The examples assume reliable connectivity. The tools assume English as the working language. The classroom being imagined has devices, bandwidth, and students who are digitally comfortable.

That is not the classroom most Indian teacher educators are preparing student teachers for.

The reality is more varied and more interesting. A student teacher doing their internship in a government school in a semi-urban district of Jammu and Kashmir, Bihar, or Odisha is working in a context where connectivity is intermittent, the medium of instruction may not be English, devices may be shared or absent, and students come from homes where nobody has ever used an AI tool. Preparing that student teacher well means being honest about what AI can and cannot do in that specific context.

This chapter is that honest conversation.

Section 7.2: AI Tools That Work in Indian Languages

The good news is that AI language support has improved significantly and continues to improve. Several major free tools now handle Indian languages with reasonable competence. The honest qualifier is that performance varies considerably across languages, and for some languages, the tools are still unreliable enough that teacher educators should verify outputs carefully before using them.

Table 6 gives a practical, honest assessment of current language support across the tools most accessible to Indian teacher educators.

Table 6: AI Tool Performance Across Indian Languages

Language	Current AI Support	Practical Recommendation
Hindi	Strong. Most major free tools handle Hindi well for content generation, translation, and explanation.	Suitable for lesson planning, scenario generation, and quiz questions. Verify technical vocabulary carefully.

Urdu	Moderate. Script handling varies. Some tools perform better with Roman Urdu than Nastaliq script.	Use for idea generation and planning. Have a language-proficient colleague review final outputs.
Punjabi	Moderate. Gurmukhi script support is improving but inconsistent across tools.	Use for generating ideas in English and then translating manually for classroom use.
Tamil	Moderate to good. Tamil support is stronger than many other Indian languages due to volume of digital content.	Suitable for basic content generation. Verify subject-specific terminology with subject experts.
Kannada	Moderate. Improving but still inconsistent for complex academic content.	Use cautiously. Best applied to simple explanations and vocabulary scaffolding.
Bengali	Moderate to good. Reasonable performance for general content.	Suitable for lesson ideas and simple explanations. Verify accuracy for curriculum-specific content.
Telugu	Moderate. Performance varies across tools.	Use for planning support in English. Translate outputs with human review before classroom use.
Others	Variable and often limited. Many regional languages have minimal AI support currently.	Default to English or Hindi for AI-assisted tasks. Use human translation for classroom delivery.

Note: AI language capability changes rapidly. Treat this table as a guide for the time of writing, not a permanent assessment.

Section 7.3: When Connectivity Is Unreliable

Unreliable internet is not an edge case in Indian teacher education. It is a daily reality for a significant proportion of institutions and school internship sites. The strategies below require no sustained connectivity and can be prepared in advance using whatever access is available.

Prepare offline, use in class. AI-generated content, lesson plans, question banks, scenario sets, and differentiated activity sheets can all be prepared during periods of connectivity and saved locally. The classroom delivery requires no internet at all. This is how most teacher educators in low-connectivity settings should think about AI: as a preparation tool, not a live classroom tool.

Use mobile data strategically. Most free AI tools work adequately on a standard mobile data connection. A student teacher with a smartphone can use AI for lesson planning and reflection journaling during periods when WiFi is unavailable, using mobile data for short, purposeful interactions rather than sustained browsing.

Download and save. Any AI-generated resource that will be used in class should be saved as a document or screenshot immediately after generation. Do not rely on being able to retrieve it later. This is a simple habit that prevents significant frustration.

Section 7.4: Preparing Student Teachers for Low-Tech Classrooms

There is a question that this guide has been building towards and that no other AI guide for educators seems to ask directly: how do you prepare student teachers to use AI thoughtfully when most of their future students will never interact with an AI tool in school?

The answer matters because the risk of AI-focused teacher education is that it prepares teachers for a classroom that does not yet exist while neglecting the classroom that does. A student teacher who becomes dependent on AI for lesson planning, feedback, and reflection may be poorly prepared for a posting in a school where none of those tools are available.

The solution is not to avoid AI in teacher preparation. It is to be deliberate about what AI is developing. When a student teacher uses AI to generate five different explanations of a concept and then selects the best one, they are developing their ability to evaluate explanations, a skill that transfers to any classroom regardless of technology access. When they use AI to simulate a confused student and practise their response, they are developing their explanatory thinking, not their AI dependency.

The AIK framework is useful here precisely because its four dimensions, Prompt Design, Iterative Refinement, Output Evaluation, and AI Limitation Understanding, are all fundamentally thinking skills. They transfer. A student teacher who has developed strong Output Evaluation Competency will be a more critical, careful, and effective teacher, whether or not AI is available in their future school.

Figure 7 summarises the key principles for using AI purposefully in low-resource teacher education contexts.

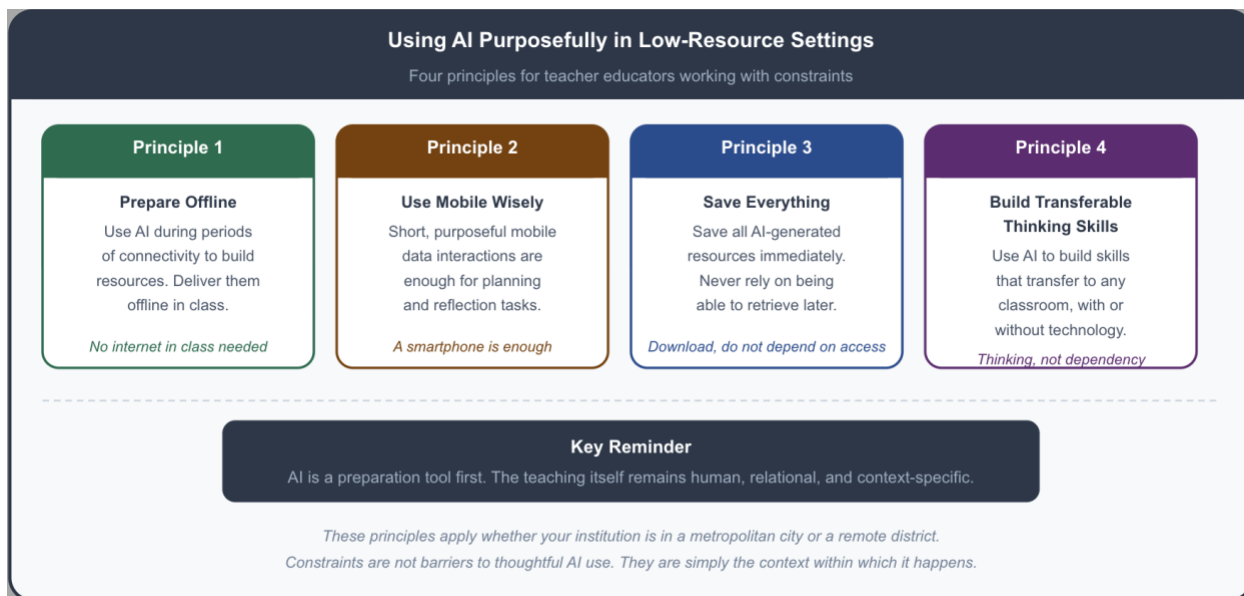


Figure 7: Four Principles for Teacher Educators Working with Constraints

TRY THIS WEEK

Try one complete AI interaction in a language other than English. Use whichever Indian language is most relevant to your student teachers' school internship context. Note what the tool does well and where it struggles. Bring those specific observations into your next session. Your student teachers' future classrooms will be multilingual. Their AI competence should account for that reality from the beginning.

CHAPTER 8: Ethics, Responsibility, and the Human Teacher

AI can do many things. The question worth asking is not what it can do, but what it should do, and who decides.

Section 8.1: This Is Not a Warning Chapter

Most writing about AI ethics in education reads like a caution label on a medication box. Long, dense, and designed to protect the writer rather than inform the reader.

This chapter takes a different approach. Ethics in AI use for teacher education is not a separate topic to be addressed once and filed away. It is a thread that runs through every decision a teacher educator makes about how AI is introduced, used, supervised, and evaluated in their programme. The previous seven chapters have woven that thread in at every point. This chapter makes it explicit.

Three questions organise what follows. What do student teachers need to understand before they take AI into schools? What does AI genuinely not replace in a teacher? And how do teacher educators handle the practical ethical questions that come up in daily use?

Section 8.2: What Student Teachers Need to Understand Before They Enter Schools

Student teachers who graduate without a clear, honest understanding of AI will pass that confusion on to their school students. That is the real stakes of getting this right.

There are three things every pre-service teacher should be able to explain clearly before they complete their programme.

First: AI generates, it does not know. Large language models produce text by predicting what words are likely to follow other words based on patterns in vast amounts of data. They do not understand content the way a teacher does. They do not verify facts before stating them. A student teacher who understands this will not trust AI output uncritically, and will not teach their school students to do so either.

Second: AI reflects the data it was trained on. That data carries biases, gaps, and assumptions, many of which are invisible unless you are looking for them. Content generated in English about Indian contexts may carry assumptions that do not fit. Content about communities that are underrepresented in digital data will be less accurate. Student teachers need to be alert to this, particularly when generating content about communities, cultures, and histories that are close to home.

Third: Transparency is a professional value, not a compliance requirement. Disclosing how AI was used in a piece of work is not about following a rule. It is about modelling the kind of intellectual honesty that good teachers demonstrate and that school students need to see.

Section 8.3: What AI Cannot Replace in a Teacher

This question deserves a direct answer rather than a philosophical discussion. Three things are stated plainly below. They are not sentimental claims. They are observable realities about what teaching actually involves.

Relationships. Teaching is fundamentally a relational activity. The trust a student places in a teacher, the way a teacher notices that a particular student is struggling on a particular day, and the long-term professional investment in a young person's growth are none of these replicable by any AI system. They require presence, consistency, and genuine human attention over time.

Contextual judgement. A teacher in a classroom is making dozens of micro-decisions every minute, based on information that no AI tool has access to. The mood of the class. The student in the back row, who usually participates but has been quiet all morning. The moment when the planned activity is not working, and something different is needed right now. These judgements draw on knowledge that is embodied, relational, and contextual in ways that AI cannot match.

Moral authority. Teachers carry a kind of authority that comes from being a person with values, a history, and genuine stakes in the outcomes of their students' lives. When a teacher tells a student that honesty matters, or that persistence pays off, or that this community is worth caring about, that message carries weight precisely because it comes from a human being who means it. AI has no values. It has patterns. The difference matters enormously in a classroom.

Figure 8 presents these three dimensions as a visual anchor for discussion with student teachers.

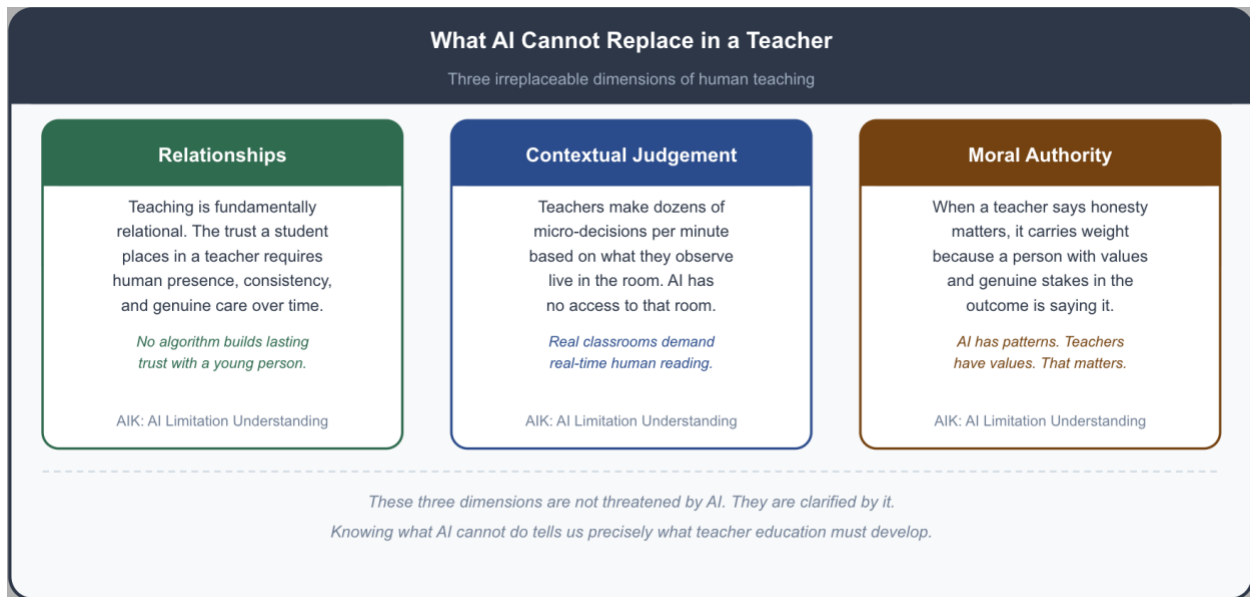


Figure 8: Three Irreplaceable Dimensions of Human Teaching

Section 8.4: Practical Ethics in Daily Use

The big ethical questions about AI in education are important. But teacher educators also face smaller, more immediate questions every day. Three of the most common are addressed directly below.

What do I tell student teachers about data privacy?

The simplest rule is this: never put personally identifiable information about a real student into any AI tool. No names, no school names, no identifying details about families or communities. When generating scenarios and case studies, use fictional names and generic settings. This is not overcaution. It is basic professional practice.

What if a student teacher submits AI-generated work and I cannot prove it?

The better question is: does the assignment design make this possible in the first place? An assignment that requires specific classroom observations, personal reflection, or evidence from a named practicum placement cannot be meaningfully completed by AI alone. Invest in better assignment design rather than detection tools. Detection tools are unreliable and create an adversarial relationship with student teachers that undermines the trust good supervision requires.

How do I talk to school students about AI honestly?

Age-appropriately and without either fear or uncritical enthusiasm. A Class 4 student needs to understand that AI is a computer programme that predicts words, not a person who

thinks. A Class 11 student needs to understand how AI systems are trained, what that means for bias and accuracy, and why critical evaluation of AI output is a life skill. Student teachers should be able to have both conversations before they graduate.

TRY THIS WEEK

Ask your student teachers this question in your next session: "What do you think a student in Class 6 understands about how AI actually works?" Do not correct their answers immediately. Listen carefully. What they say will reveal the assumptions they are carrying into their future classrooms. Those assumptions are your next teaching priority.

CHAPTER 9: Getting Started When You Have Nothing

You do not need a budget, a policy, or a tech committee. You need thirty minutes and genuine curiosity.

Section 9.1: For Institutions at Zero

This chapter is for the teacher educator who has read everything in this guide and is now thinking: This is all very well, but our institution has no AI policy, no dedicated device for faculty use, unreliable internet, and colleagues who raise an eyebrow at the first mention of anything technological.

That is most institutions in India right now. And it is exactly where change begins.

The history of educational innovation is not a story of well-resourced institutions leading the way. It is a story of individual practitioners deciding to try something, documenting what happened, sharing it with one colleague, and slowly building momentum from there. AI adoption in teacher education will follow the same pattern. This chapter gives you a concrete 90-day plan for doing exactly that. Nothing in it requires institutional approval for the first thirty days. Nothing in it requires a budget. Nothing in it requires your colleagues to agree with you before you begin.

Section 9.2: The 90-Day Starter Plan

Figure 9 presents the plan visually. The three phases are described in detail below.



Figure 9: The 90-Day Starter Plan

Days 1 to 30: Awareness and Exploration

This phase is entirely personal. Do not announce anything. Do not ask for permission. Simply try one AI tool for a task you already do every week. Plan a session. Generate some discussion questions. Give feedback on a piece of student work. Do it with AI alongside your normal process and compare the results.

Keep a brief running note. Not a formal document. A few lines after each attempt: what you asked, what you got, what you used, what you discarded. By the end of thirty days, you will have enough personal experience to have an informed opinion, which is the only foundation worth building on.

Identify one colleague who seems curious. Share one specific example of something AI helped you do. Not an argument for why AI matters. Just a specific, concrete thing that happened. That conversation is the seed of everything that follows.

Days 31 to 60: One Structured Experiment

Choose one assignment in one course and redesign it using the ideas in Chapter 2 or Chapter 3. Tell your student teachers honestly what you are trying and why. Ask them to share their experience of the redesigned assignment, what worked for them, what felt different, and what concerned them.

Document what happens. Student responses, your own observations, anything that surprised you. You are not trying to prove that AI works. You are trying to find out what happens in your specific context with your specific students. That specificity is what makes your experience worth sharing.

Days 61 to 90: Reflect, Share, and Decide

Write a one-page reflection on the experiment. What worked? What did not? What would you do differently? Share it informally with two or three colleagues over tea, not in a meeting. Frame it as a conversation, not a presentation. Ask what they think rather than telling them what to think.

Then make three decisions: what to continue in the next semester, what to modify, and what to stop. Write those decisions down. That written decision is the beginning of an institutional position on AI, and it emerged from practice rather than policy, which is the only way institutional change actually sticks.

Section 9.3: Bringing Sceptical Colleagues Along

Every institution has colleagues who are sceptical about AI. Some are cautious because they have seen too many technology initiatives come and go. Some are concerned about

academic integrity. Some simply have not had time to engage. All of these positions are reasonable.

The single most effective strategy for bringing sceptical colleagues on board is not argument. It is a demonstration through shared experience. When a colleague sees that you tried something specific, documented it honestly, including what did not work, and are sharing it as a question rather than a conclusion, the conversation changes. Scepticism meets curiosity rather than advocacy.

Three things to avoid. Do not evangelise. Do not send links to articles about how AI is transforming education. Do not schedule a meeting to discuss AI adoption before anyone has tried anything. All three approaches generate resistance before experience has had a chance to generate curiosity.

Three things to do instead. Share one specific thing AI helped you do this week. Invite one colleague to try one thing alongside you. Ask what concerns them most, and listen without immediately offering reassurance. Those three actions, repeated over a semester, will move most institutions further than any top-down policy initiative.

Section 9.4: Free Resources to Get You Started

No guide on AI in education should end without pointing practitioners to what is actually available and free. Table 7 lists the most useful starting points available to Indian teacher educators at the time of writing.

Table 7: Free Starting Points for Teacher Educators

Resource	What It Offers	Where to Find It
ChatGPT (free tier)	General-purpose AI for planning, feedback, scenario generation, and content creation. Works in Hindi and several other Indian languages.	chat.openai.com
Google Gemini (free)	Strong multilingual support including Indian languages. Integrates with Google Docs and Drive. Useful for drafting, summarising, and generating teaching materials.	gemini.google.com
Microsoft Copilot (free)	Built into Edge browser. Useful for summarising documents, generating content, and assisting with planning tasks. No installation needed.	copilot.microsoft.com
Claude (free tier)	Particularly strong for sustained contextual tasks: developing scenarios,	claude.ai

	refining feedback, and iterative planning conversations.	
SWAYAM	India's national online education platform. Free courses on AI, digital pedagogy, and educational technology with recognised NPTEL certification under the NCeF.	swayam.gov.in
DIKSHA	National digital infrastructure for teachers. Includes professional development resources relevant to technology integration in ITEP and B.Ed. contexts.	diksha.gov.in
Google for Education	Free educator training programmes, certifications, and the Applied Digital Skills curriculum. The Google Certified Educator programme is self-paced and available at no cost.	edu.google.com/for-educators
LinkedIn Learning	Structured courses on AI, digital skills, and professional development. One-month free trial available. Certificates contribute to professional portfolios.	linkedin.com/learning
UNESCO AI in Education Resources	Free policy guides and competency frameworks on AI in education, including the AI Competency Framework for Teachers.	unesco.org/en/digital-education/artificial-intelligence

Note: Platform availability and features change regularly. Verify current access at the time of use.

TRY THIS WEEK

Identify one colleague who is curious but has not yet tried anything. Share one specific thing AI helped you do this week, not a general claim, a specific example. Offer to show them rather than tell them. That conversation is how institutional change actually begins. It does not begin with a policy. It begins with a person.

CLOSING NOTE: The Teacher AI Cannot Be

There is a version of this guide that ends with a list. Ten things to remember. Five next steps. Three key takeaways. That version would be easier to write and easier to forget.

This one ends differently.

Everything in this guide has been practical. Deliberately so. The AIK framework, the lesson planning protocols, the reflection tools, the 90-day plan, all of it was designed to be used on Monday morning, not filed away after a weekend workshop. That practicality was a deliberate choice because the gap between knowing about AI and actually doing something with it is where most good intentions go to die.

But practicality without purpose is just efficiency. And efficiency is not what teacher education is for.

Teacher education exists because someone decided, a long time ago, that the people who teach children deserve preparation, not just instruction. The act of standing in front of a classroom full of young people and taking responsibility for their learning is serious enough to warrant years of study, practice, reflection, and mentorship. Teachers are not technicians executing a curriculum but professionals making hundreds of judgements every day about what each particular child in each particular moment needs most.

AI does not change any of that. What it changes is the landscape within which that professional work happens. The tools available. The expectations students bring. The information teachers can access. The time that can be saved on tasks that do not require human judgement, freeing more energy for the tasks that do.

Used well, AI makes more room for the human parts of teaching. More time for the conversation that a struggling student needs. More capacity for the feedback that actually helps, rather than the feedback that merely covers the page. More mental space for the kind of creative, responsive teaching that no lesson plan, AI-generated or otherwise, can fully anticipate.

That is the opportunity this guide has tried to make visible and accessible. Not AI as a replacement for good teaching. AI is a context within which good teaching becomes, if anything, more necessary and more valuable than before.

The student teachers you are preparing will spend their careers in classrooms where AI is as ordinary as the internet is today. What they will need, in those classrooms, is not technical fluency with whatever tools happen to exist at that moment. Those tools will change. What

they will need is the judgement to know when to use them, the critical capacity to evaluate what they produce, the ethical clarity to be honest about how they are used, and the professional confidence to know that none of it replaces what only a teacher can do.

That is what you are developing. It always was.

This guide was one attempt to help. Take what is useful. Adapt what needs adapting. Share what works. And if something in these pages sparked even one conversation, one experiment, or one moment of genuine curiosity in a student teacher who might otherwise have graduated without engaging seriously with any of this, then it has done what it set out to do.

About the Author



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Adit Gupta is Professor and Principal of MIER College of Education (Autonomous), Jammu, and Director of the MIER Group of Institutions. He holds a PhD in Learning Environments from Curtin University, Australia and brings nearly three decades of experience in teacher education, educational technology, and institutional leadership.

His research spans AI in education, psychometric instrument development, blended learning, and technology-enhanced teacher preparation. He has developed a portfolio of original frameworks and instruments for understanding how educators and institutions engage with emerging technologies, including the AI Interaction Knowledge framework, which runs throughout this guide.

Between 2021 and 2024, he led a three-phase technology-enhanced learning transformation project at MIER College of Education in partnership with the Commonwealth of Learning, resulting in the development of over twenty blended courses and a benchmarking score of 4.1 out of 5 across ten domains of institutional TEL practice. That project is the direct institutional foundation from which this guide grew.

He serves as Regional Editor of Learning Environments Research, published by Springer, and as Editor-in-Chief of the MIER Journal of Educational Studies, Trends and Practices. His work has been recognised through the Australian Government Endeavour Executive Award and the United States Government International Visitor Leadership Programme.

This guide represents his first attempt to step outside the journal article and the book chapter and write something that a teacher educator in Jammu, Jaipur, or Jorhat can pick up on a Sunday evening and actually use on Monday morning. He hopes it is useful. He would be glad to hear from anyone for whom it was.

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Appendix A: AI Tools for Teacher Educators — A Curated List

The tools listed below were free or freely accessible at the time of writing. They are organised by use case rather than by platform, because what you are trying to do matters more than which company made the tool. Where tools have limitations relevant to Indian teacher educators, those are noted plainly.

This list is not exhaustive and will date. Treat it as a starting point. The best way to stay current is to follow one reliable source on AI in education rather than trying to track every new development.

For Lesson Planning and Content Generation

ChatGPT (chat.openai.com) — The most widely used general-purpose AI tool. The free tier is adequate for most teacher education tasks. Strong performance in English, reasonable in Hindi and several other Indian languages. Occasionally produces factually incorrect content. Always verify subject-specific information before classroom use.

Google Gemini (gemini.google.com) — Strong multilingual support, including several Indian languages. Integrates well with Google Docs and Drive, which many Indian institutions already use. Useful for drafting, summarising, and generating teaching materials.

Microsoft Copilot (copilot.microsoft.com) — Built into the Edge browser and free to use. Particularly useful for summarising documents and assisting with planning tasks. Accessible on low-end devices without installation.

Claude (claude.ai) — Exceptionally strong for sustained, contextual professional tasks. Particularly useful for developing detailed lesson scenarios, refining feedback, working through planning challenges iteratively, and generating case vignettes for teacher education. Free tier available. Performs best in English but handles Hindi and other Indian languages with reasonable competence.

For Feedback and Assessment

ChatGPT, Gemini, and Claude — All three handle feedback refinement tasks well. Paste your draft feedback and ask for it to be made more specific and actionable. Use the output as a starting point, not a final product.

Grammarly (grammarly.com) — Free tier available. Useful for helping student teachers improve the clarity and accuracy of their written work. Not an AI tutor but a practical writing support tool.

For Multilingual Support

Google Translate (translate.google.com) — Still the most reliable free tool for Indian language translation. Useful for generating bilingual teaching materials and scaffolding content for multilingual classrooms. Verify translations with a language-proficient colleague before classroom use.

Gemini — Better than most tools for generating content directly in Hindi, Tamil, Bengali, and several other Indian languages without translating from English first.

For Transcription and Micro-Teaching Analysis

Otter.ai (otter.ai) — Free tier provides limited transcription minutes per month. Useful for converting micro-teaching recordings to text for self-analysis. Performs best with clear audio in English.

Google's Live Transcription — Available on Android devices. Free, requires no account, and works in several Indian languages. Adequate for micro-teaching analysis in low-resource settings.

For Professional Development

SWAYAM (swayam.gov.in) — India's national online education platform. Free courses on AI, digital pedagogy, and educational technology with NPTEL certification recognised under the National Credit Framework. The most important platform for Indian teacher educators seeking structured professional development in this area.

DIKSHA (diksha.gov.in) — National digital infrastructure for teachers. Includes professional development resources on technology integration relevant to the ITEP and B.Ed. context.

Google for Education (edu.google.com/for-educators) — Free educator training programmes, certifications, and the Applied Digital Skills curriculum. The Google Certified Educator programme is a recognised credential that teacher educators can pursue independently at no cost. Courses are practical, self-paced, and directly applicable to classroom and institutional contexts.

LinkedIn Learning (linkedin.com/learning) — Offers structured courses on AI, digital skills, and professional development. A one-month free trial is available and many Indian institutions provide institutional access. Certificates earned are widely recognised and can contribute to professional portfolios. Particularly useful for teacher educators wanting structured pathways rather than self-directed exploration.

UNESCO Digital Library (unesdoc.unesco.org) — Free access to UNESCO's full range of AI in education publications, including the AI Competency Framework for Teachers and the AI

and Education guidance for policy makers. Essential reading for teacher educators wanting a global perspective.

All tools listed were available and functional at the time of writing. Platform features, pricing, and availability change regularly. Verify current access before recommending any tool to student teachers or colleagues.

Appendix B: Sample AI Use Policy for a Teacher Education Institution

This policy template was introduced in Chapter 2 as Figure 2. It is reproduced here in full text form for institutions that wish to adapt, print, and circulate it as a standalone document without extracting it from the guide.

The language is intentionally plain. It is designed to be understood by student teachers, faculty, and institutional administrators without legal expertise. Adapt the wording to suit your institution's tone and context. Have one conversation with your colleagues before circulating it. Treat it as a living document that you revisit as practice and understanding evolve.

AI Use Policy for Teacher Education Institutions

A Departmental Working Document — Adapt Freely

Purpose

This policy provides clear, practical guidance on the use of artificial intelligence tools in coursework, teaching practice, and professional learning. It applies to all student teachers and faculty unless a specific assignment or activity states otherwise.

Our Position

This institution encourages the thoughtful and transparent use of AI tools as part of professional learning and teaching preparation. AI is a resource, not a replacement for professional thinking, judgement, or the relational dimensions of teaching. Used well, it can enhance the quality of preparation. Used carelessly, it can undermine the very competencies this programme exists to develop.

Permitted Uses

The following uses of AI are permitted and encouraged:

Using AI to explore ideas, generate first drafts, and seek feedback on your own writing. Using AI to research unfamiliar concepts, generate teaching scenarios, or prepare for teaching practice. Using AI to refine lesson plans, develop rubrics, or generate quiz questions, provided the output is critically evaluated and adapted before use. Using AI as a thinking partner for reflection, provided the reflection itself remains your own.

Uses That Are Not Permitted

The following uses of AI are not permitted:

Submitting AI-generated text as your own original work without acknowledgement. Using AI to complete reflective tasks, observation reports, or practicum journals that require your

personal classroom experience. Using AI in any assessment where individual professional judgement is explicitly being evaluated.

What Is Expected

When AI has contributed to any piece of submitted work, include a brief note stating how it was used. This disclosure is not a penalty. It is a professional habit that reflects the intellectual honesty we expect from future teachers.

Example of an acceptable disclosure: *"AI was used to generate an initial list of discussion questions, which were then reviewed, modified, and contextualised for the specific classroom being planned for."*

Academic Integrity

Misrepresenting AI-generated content as entirely your own original work, particularly in reflective or experience-based assessments, is a breach of academic integrity and will be addressed through the institution's standard procedures. When in doubt, disclose. Transparency is always the safer and more professional choice.

Data Privacy

Do not enter personally identifiable information about real students, schools, or families into any AI tool. Use fictional names and generic settings when generating case studies or scenarios. This is not overcaution. It is basic professional practice.

Review

This policy will be reviewed at the end of each academic year in light of evolving practice and emerging guidance from regulatory bodies, including NCTE and UGC.

This policy may be freely adapted by teacher education institutions across India and beyond. Attribution to this guide is welcome but not required. What matters is that the conversation it is designed to start actually happens.

Appendix C: Responsible AI Use Commitment for Student Teachers

This commitment document is designed to be used at the start of a semester, not handed out as a compliance exercise. The difference matters. A document signed without discussion is a formality. A document signed after a genuine conversation about what it means is a professional anchor.

The recommended process is simple. Distribute the document in the first or second session of the semester. Read through it together. Invite questions. Ask student teachers what they agree with readily and what they find themselves wanting to push back on. That conversation, not the signature, is the point.

The commitment can also be returned to at the end of the semester as a reflective tool. Did you honour it? Where did it feel straightforward? Where did it feel difficult? What would you add or change now that you have spent a semester working with AI in your preparation?

Responsible AI Use Commitment

For Student Teachers in Teacher Education Programmes

My Understanding

I understand that AI tools are resources that can support my learning and professional preparation. I also understand that they cannot replace my thinking, my classroom experience, my professional judgement, or my responsibility as a developing teacher.

I understand that AI systems can produce inaccurate, biased, or contextually inappropriate content, and that it is my professional responsibility to evaluate everything AI produces before using it in any educational context.

I understand that the skills this programme is developing in me, including the ability to observe, reflect, plan, teach, and respond to real students in real classrooms, cannot be developed by AI on my behalf.

My Commitments

I commit to using AI transparently. When AI contributes to any piece of work I submit, I will disclose how it was used.

I commit to using AI critically. I will not accept AI output without evaluating its accuracy, appropriateness, and relevance to the specific context I am working in.

I commit to protecting privacy. I will not enter personally identifiable information about real students, schools, families, or communities into any AI tool.

I commit to keeping the thinking mine. In reflective tasks, observation reports, practicum journals, and experience-based assessments, the thinking, the language, and the professional judgement will be my own.

I commit to asking when uncertain. If I am unsure whether a particular use of AI is appropriate, I will ask my teacher educator before proceeding rather than after.

My Aspiration

I aspire to be the kind of teacher who uses every available resource thoughtfully, shares what works honestly, and remains curious about new tools without losing sight of what teaching is fundamentally about: the relationship between a teacher and a learner, and the responsibility that relationship carries.

Signed

Name: _____

Programme: _____

Institution: _____

Date: _____

Semester: _____

This commitment document may be adapted freely by teacher education institutions. It is intended as a starting point for conversation, not a legal instrument. What it asks of student teachers is no more and no less than what good professional practice has always required.

Appendix D: Sources and Further Reading

This guide was written as a practitioner resource, not an academic paper. It does not carry a formal reference list. What it carries instead is this: a curated set of sources and further reading, organised by theme, each with a plain-English note on what it offers and why it is worth your time. Every source listed here is either freely accessible online or available through institutional library access. None has been included for the sake of comprehensiveness. Each one is here because it is genuinely useful to a teacher educator who wants to go further.

On AI in Education: Starting Points

UNESCO (2021). AI and Education: Guidance for Policy-Makers. Paris: UNESCO. Available free at unesdoc.unesco.org. The clearest and most balanced overview of AI's implications for education from a global perspective. Written for policy makers but accessible to practitioners. A good first serious read for anyone new to the field.

UNESCO (2024). AI Competency Framework for Teachers. Paris: UNESCO. Available free at unesdoc.unesco.org. Identifies the competencies teachers need to engage with AI effectively and ethically. Directly relevant to the AIK framework introduced in this guide. Essential reading for teacher educators designing professional development in this area.

Holmes, W., Porayska-Pomsta, K., Holstein, K., et al. (2022). Ethics of AI in Education: Towards a Community-Wide Framework. *International Journal of Artificial Intelligence in Education*, 32(3), 504-526.

The most thorough treatment of ethical questions in AI and education available in the research literature. Dense but worth the effort. Particularly useful for Chapter 8 of this guide.

On Teacher Education and Technology

Mishra, P. and Koehler, M. J. (2006). Technological Pedagogical Content Knowledge: A Framework for Teacher Knowledge. *Teachers College Record*, 108(6), 1017-1054. The foundational paper on TPACK. Essential background for understanding where the AIK framework sits in relation to existing teacher knowledge frameworks. Freely available through Google Scholar.

Redecker, C. and Punie, Y. (2017). European Framework for the Digital Competence of Educators: DigCompEdu. Publications Office of the European Union. Available free at the EU publications portal. A comprehensive, practical framework for understanding digital competence in teaching. Useful for institutional competency mapping exercises described in Chapter 9.

Moorhouse, B. L. and Kohnke, L. (2024). The Effects of Generative AI on Initial Language Teacher Education: The Perceptions of Teacher Educators. System, 122, 103290. One of the first empirical studies specifically examining how teacher educators perceive generative AI. Directly relevant to the concerns and questions raised throughout this guide.

On Assessment Reform in Teacher Education

Black, P. and Wiliam, D. (1998). Assessment and Classroom Learning. Assessment in Education, 5(1), 7-74.

The foundational paper on formative assessment. Still the most cited and most useful starting point for anyone thinking seriously about assessment reform. Directly relevant to Chapter 6 and the C²E model.

Biggs, J. and Tang, C. (2011). Teaching for Quality Learning at University (4th ed.). Maidenhead: Open University Press.

The most practical treatment of constructive alignment available. Chapter 6 of this guide draws directly on Biggs and Tang's principles. Widely available through institutional libraries.

On Indian Teacher Education Policy

Ministry of Education (2020). National Education Policy 2020. Government of India, New Delhi.

Available free at education.gov.in. Essential reading for anyone working in Indian teacher education. The policy framework within which this entire guide is situated.

NCTE (2021). National Council for Teacher Education Amendment Regulations 2021. Published in the Gazette of India, 26 October 2021.

The regulatory foundation for the Integrated Teacher Education Programme. Essential for institutions implementing or preparing to implement ITEP.

One Source Worth Following Regularly

EdSurge (edsurge.com)- A free online publication covering education technology with a practical, practitioner-oriented perspective. More useful than most academic journals for staying current on how AI tools are actually being used in educational settings. Recommended as a weekly read for teacher educators wanting to stay informed without being overwhelmed.

This reading list reflects sources available and relevant at the time of writing. The field is moving quickly. New research, new frameworks, and new policy guidance will emerge. The sources listed here will remain useful as foundations even as the landscape around them changes.



**AI is a context within which
good teaching becomes,
if anything, more necessary
and more valuable than before.**



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