colleague.ai

2026 Edition

A Comprehensive Guide to AI Tools for Educators

Plan lessons, grade with confidence, and choose AI that's actually built for the classroom — not a generic chatbot.

IN PARTNERSHIP WITH:

National Science Foundation

U.S. Department of Education

IES Institute of Education Sciences

AmplifyLearn.AI

A Note from Dr. Min Sun

Hello,

I'm Dr. Min, an education researcher, professor, and practitioner who's currently leading national research efforts in Generative AI in K-12 and leading Colleague AI, a spin-out company from the University of Washington's College of Education.

There are a growing number of AI tools for K-12, and I assure you, they are not all created equally! Putting a nice-looking user interface wrapper on ChatGPT or Gemini does not constitute a proven, evidence-based AI tool ready for K-12 usage.

Pedagogy matters A LOT when it comes to AI tools and how AI models and agents are built, trained, and fine tuned. Don't assume that just because something comes from a big, well-known company, that it's got strong pedagogical and evidence-based foundations, or that it's built with students' best interest at the center.

We wanted to make a guide to the growing landscape of AI tools in the market to explain what types of tools are out there, and what separates the wheat from the chaff.

This guide exists to give you a reference. The research we have been conducting at the University of Washington College of Education through AmplifyLearn.AI — funded by the NSF, the U.S. Department of Education, and the Institute of Education Sciences — has taught us that the quality gap between AI tools in education is significant and consequential. Not all AI tools are created equal, and the difference matters for the students in your classroom.

What follows is organised by task: what you are trying to accomplish as an educator. For each category of AI tool, you will find what these tools can do, what quality looks like in practice, and a side-by-side comparison of a strong output versus a weak one. You will also find guidance on prompting — because the way you ask matters — and a practical starting point so you can begin without feeling overwhelmed.

> **AI should amplify your professional judgment, not bypass it. You are still the expert in the room. This guide is designed to help you be an informed one.**

Dr. Min Sun

Co-founder and CEO, Colleague AI

Director, AmplifyLearn.AI National Research Center, University of Washington College of Education

01

The AI Tool Landscape

There is now an AI tool for almost every task in a school: lesson planning, assessment, grading, parent communication, differentiation, IEP writing, professional development, subject-specific content creation, and more. The market is growing rapidly, and not all of it is growing in the right direction.

Before diving into tool categories, three concepts will help you navigate the landscape.

1. Models, wrappers, and why the distinction matters. Most AI tools are built on top of large language models — systems trained on billions of pages of text that can generate fluent, coherent responses. The tool you see is a wrapper: an interface and set of configurations layered on top of that underlying model. Two tools built on the same underlying model can produce very different results depending on how they have been configured and what additional training has been applied.

> **"Built on ChatGPT" is not an educational credential.**

2. General-purpose versus education-specific tools. A general-purpose AI tool is built for anyone — writers, coders, business analysts, teachers, and for mostly adult users. They are no designed specifically for ages 5-7, for example.

An education-specific tool is configured and (ideally) trained specifically for the educational context, with outputs calibrated to curriculum standards, grade-level expectations, and pedagogical frameworks. The difference between the two is evident in their outputs and conversation.

3. What "built for education" should actually mean. For a tool to genuinely be built for K-12, it should be:

- ✓ trained on educational content
- ✓ calibrated to grade-level expectations
- ✓ aligned to curriculum standards,
- ✓ validated for pedagogical appropriateness
- ✓ Built with multiple stakeholders, from the superintendent down to the student
- ✓ Ingrained with K-12 specific research
- ✓ And built with pedagogical models and evidence-based practices.

Many tools claim to be built for education; fewer have done the work to earn that description.

02

Tool Categories, Capabilities, and Limitations

Each section below covers one category of AI tool.

Lesson Planning Tools

Lesson planning tools generate lesson plans, unit outlines, pacing guides, and standards-aligned activities from your inputs. At their best, they absorb the structural overhead of planning — formatting, sequencing, alignment checks — so you can focus your energy on the instructional decisions only you can make.

✓ What they can do	Generate lesson plans, unit outlines, pacing guides, and standards-aligned activities from a grade, subject, and standard.
★ A great tool	Align outputs to specific grade-level standards, apply appropriate Bloom's taxonomy levels, include differentiation options, and scaffold for the teacher's actual classroom context — not a generic classroom. It knows your students (their learning profile, strengths, weaknesses, competencies), knows your teachers, knows your district documentation, knows all state and highly common standards or can look them up, and will tell you who will struggle or be bored by a given lesson plan.
✗ A poor tool	Vague objectives that could apply to any grade; timing with no connection to actual instructional minutes; activities disconnected from the learning goal; no differentiation.

SAME REQUEST, TWO RESULTS

Add fractions with unlike denominators — Grade 4.

✓ A quality educational tool generates

Lesson Plan: Adding Fractions with Unlike Denominators

Grade 4 · CCSS.MATH.4.NF.B.3a · Bloom's: Apply · 45 min

CURRICULUM CONTEXT · AUTO-LOADED

Week 6 of the fractions unit. Students mastered equivalent fractions (4.NF.A.1) last week. Exit-ticket data: 6 students still need visual-model support. Model: direct instruction + guided inquiry.

Quality check · 8/8 criteria passed

- ✓ Measurable objective aligned to standard
- ✓ Prior-knowledge activation built in
- ✓ Worked examples before student practice
- ✓ Scaffolded guided → independent practice
- ✓ Embedded formative check + aligned exit ticket
- ✓ Timing calibrated to the 45-minute block

Differentiation · from class profile

Support (6 flagged): visual fraction-bar models; like-denominators scaffold first. **Standard:** optional number line. **Extension:** write word problems; explain strategies in writing.

Note: 3 ELL students identified — bilingual vocabulary support included in the materials package.

✕ A generic tool generates

Lesson Plan: Adding Fractions with Unlike Denominators

4th Grade · 45 minutes

Objective: Students will be able to add fractions with unlike denominators.

Introduction (5 min): Review what fractions are.

Direct Instruction (15 min): Explain that you need a common denominator. Show examples on the board.

Guided Practice (10 min): Work through examples as a class.

Independent Practice (10 min): Students complete worksheet.

Exit Ticket (5 min): Solve one problem.

Materials: whiteboard, worksheet, pencils. Differentiation: none.

- ✕ *Not linked to prior lessons or performance data*
- ✕ *No Bloom's level — defaults to generic "learn about"*
- ✕ *No quality framework or best-practice checks applied*
- ✕ *Differentiation is a placeholder, not actionable*
- ✕ *Same plan for every student, regardless of readiness*

Assignment & Activity Creators

Assignment and activity creators generate student tasks: writing prompts, discussion questions, projects, choice boards, interactive digital activities, games (physical, blended, or digital), and more. The critical question for this tool type is whether the task actually requires students to think — or whether it is something they can answer from general knowledge, without engaging the specific content, or by using another LLM to "cheat".

✓ What they can do	Draft writing prompts, discussion questions, projects, choice boards, and student tasks quickly across many subjects and formats, create physical and digital activities, homework, assignments, games, worksheets, and more.
★ A great tool	Produce tasks that require genuine thinking at the appropriate Bloom's level; include scaffolded instructions and clear success criteria; connect the task to a specific standard and learning goal; give unlimited options and creativity to teachers, not just worksheets and presentations and multiple choice quizzes; generate digital assets in minutes (like vibe coding for educators, minus the coding).
✕ A poor tool	Tasks students can complete without engaging the content; prompts with no connection to standards; one-size-fits-all regardless of grade level or prior knowledge, tasks that are easy to cheat and don't require cognitive engagement.

IN PRACTICE

Assignment & Activity Creators

✓ A quality educational tool generates

Grade 8 Argumentative Writing — Climate Solutions

Standard: CCSS.ELA-LITERACY.W.8.1 · Bloom's: Evaluate

CURRICULUM CONTEXT · AUTO-LOADED

Week 3 of persuasion unit. Class readings this week: policy brief, scientist's article, community activist's letter. Exit ticket data: 11/28 students need support with counterargument structure — flagged and scaffolded below. Learning model: Inquiry-based (class profile preference).

The task

Write a 4–6 paragraph argumentative essay claiming which approach — policy, science, or community action — has the greatest potential impact on climate outcomes. Support your argument with evidence from at least two of the three class texts assigned this week. Acknowledge and refute one counterargument.

Success criteria · co-developed class rubric, Week 1

- ✓ Arguable claim in introduction
- ✓ Two pieces of text evidence with explained connection
- ✓ Counterargument acknowledged and refuted
- ✓ Conclusion restates argument

Differentiation · auto-generated from class profile

Support (11 students): Graphic organiser + sentence frames. **Extension:** Add a second counterargument; compare two opposing source texts in depth.

✕ A generic tool generates

Grade 8 Argumentative Writing — Climate Change

Assignment

Write a well-structured 4–6 paragraph argumentative essay on one of the following topics:

- Should governments prioritise climate action over economic growth?
- Are individuals or corporations more responsible for climate change?
- Can renewable energy fully replace fossil fuels by 2050?

Choose one position and defend it using evidence. Acknowledge an opposing viewpoint and explain why your argument is stronger.

Requirements

- Clear thesis statement in the introduction
- At least two pieces of supporting evidence
- One counterargument addressed
- Strong conclusion

Tips: Use reliable sources. Cite your evidence. Proofread before submitting.

- ✕ *No standard aligned; no Bloom's level specified*
- ✕ *Not connected to class readings or curriculum sequence*
- ✕ *Generic topic choices — not tied to class texts or unit*
- ✕ *No Bloom's level — defaults to general persuasive writing*
- ✕ *Same assignment for all students — no differentiation*
- ✕ *No quality checks applied against pedagogical standards*
- ✕ *Tool has no knowledge of what students read last week, how students performed, or what the unit plan is*

Assessment Tools

Assessment tools generate questions, formative checks, exit tickets, and performance tasks. The most common failure mode here is recall: a quiz that only asks students to remember facts, when the standard requires them to apply, analyse, or evaluate. Quality assessment tools generate questions calibrated to the cognitive demand the standard actually requires.

✓ What they can do	Generate quiz and test questions, formative assessments, exit tickets, checks for understanding, and performance tasks aligned to a topic.
★ A great tool	Produce questions at specified Bloom's levels or depth of knowledge levels, align items to specific standards, vary question formats (multiple choice, constructed response, short answer), and distinguish between formative and summative purposes, work with rubrics (generated or provided)
✗ A poor tool	Questions that mismatch test to cognitive level and/or skill such as only recall when the standard requires higher-order thinking; limited variety in format; items students can answer by asking Gemini/ChatGPT; misaligned Bloom's levels or DOK levels.

IN PRACTICE

Assessment Tools

✓ A quality educational tool generates

Formative Assessment: Photosynthesis — Grade 6

Standard: NGSS MS-LS1-6 · Bloom's: Remember → Evaluate

CURRICULUM CONTEXT · AUTO-LOADED

End of Week 2, Cells and Life Processes unit. Common misconception flagged in discussion: students confusing inputs (CO_2, water) with outputs (glucose, oxygen). This assessment is calibrated to surface and address it.

Generated questions

Q1 (Remember — baseline): Name the three inputs required for photosynthesis.

Q2 (Understand — addresses flagged misconception): In your own words, explain why plants are called 'producers.' How does photosynthesis make this possible?

Q3 (Apply — standard target): Plant A gets sunlight; Plant B is in complete darkness. Both get water and CO_2. Predict and explain what happens to each plant over two weeks.

Q4 (Analyse): Using the leaf cross-section diagram, identify where photosynthesis occurs and explain why that location is suited to this function.

Q5 (Evaluate): A student says 'Photosynthesis is just how plants eat.' How accurate is this? What would you add?

Simplified version auto-generated for 4 ELL students. Results will feed next lesson's differentiation groupings.

✕ A generic tool generates

Quiz: Photosynthesis — Grade 6

1. What is photosynthesis?
a) How animals get energy from food · b) How plants make their own food using sunlight · c) How plants absorb water from soil · d) The process of cellular respiration

2. Where does photosynthesis take place?
a) Roots · b) Stem · c) Chloroplasts · d) Mitochondria

3. Which does a plant NOT need for photosynthesis?
a) Sunlight · b) Water · c) CO_2 · d) Nitrogen

4. What gas do plants release during photosynthesis?

5. Explain in your own words how photosynthesis works.

Answer Key: 1-b, 2-c, 3-d, 4-oxygen, 5-varies

[All questions at Remember/Understand — standard requires Apply and Analyse; the tool doesn't know that]

- ✕ *No standard specified; no Bloom's levels assigned*
- ✕ *Not calibrated to identified misconceptions*
- ✕ *Not connected to class discussion or identified misconceptions*
- ✕ *Same assessment for all students*
- ✕ *No feedback loop to lesson planning or differentiation*

Grading Tools

Grading tools apply rubrics to student work, generate written feedback, identify patterns across a class, and suggest, or in some cases provide, scores. They are most useful as a first-pass draft: the tool generates, the teacher reviews and refines. The biggest failure mode is generic feedback that doesn't connect to the specific student and their work or tell them what to do next or how to improve.

✓ What they can do	Apply rubrics to student work, generate written feedback comments, identify patterns across class submissions, and suggest scores based on criteria.
★ A great tool	Provide specific, actionable feedback tied to rubric criteria; surface common error patterns across the class; maintain consistency across student submissions; tell students what to do next, not just what was wrong; learn the teacher's style to imitate it when giving feedback; provide appropriate encouragement; provide well-formatted and easy-to-read feedback and grades; translate to other languages; maintain age-appropriate feedback without constant re-input.
✕ A poor tool	Context and nuance in borderline cases; the individual student relationship dimension of feedback; when a student needs human intervention rather than a score; generic praise that doesn't build skill.

SAME ESSAY, TWO KINDS OF FEEDBACK

Jordan's argumentative essay — scored 2/4.

✓ A quality educational tool generates

Feedback — Jordan M. · Argumentative Essay

Rubric: Claim & Evidence · Score 2/4

STUDENT CONTEXT · PERFORMANCE HISTORY

Jordan has grown in evidence use across two assignments (1/4 → 2/4). Counterargument has been a persistent challenge — flagged for the third time.

Strengths. Your claim in paragraph 1 is clear and arguable — "community-led initiatives have the greatest long-term impact." Stronger than your last draft.

For growth. Paragraph 2's evidence supports the claim, but the connection isn't explained — add "This matters because…" In paragraph 3 you name a counterargument but dismiss rather than refute it. *This was the target skill for the unit.*

Next step: Revise paragraph 3 with PEEL — Point → Evidence → Explanation → Link.

Growth note: evidence use has improved since September; counterargument is the remaining gap — two more practice opportunities are built into the unit plan.

× A generic tool generates

Feedback — Argumentative Essay

Score: 2/4 on Use of Evidence

Overall: Your essay shows a solid understanding of the topic and makes a clear argument. You demonstrate good writing skills.

Strengths: your introduction states your position; you included relevant evidence; your writing is generally clear.

Areas for improvement: develop your evidence more fully; your counterargument could be stronger; review your conclusion.

Suggestions: revisit the rubric; add more specific examples; proofread for grammar.

- × *Generic praise — doesn't identify what specifically worked*
- × *No reference to specific text in this student's essay*
- × *No knowledge of the student's history, goals, or unit plan*
- × *Next steps not connected to specific skill targets*

Rubrics

Rubric generators create assessment frameworks for any task type. The critical failure in this category is vagueness: descriptors that sound different but mean the same thing, or that describe effort and attitude rather than observable evidence of learning. A strong rubric makes the standard visible — students should be able to use it to self-assess.

✓ What they can do	Generate rubric structures for any task type, populate performance level descriptors, align criteria to specific standards.
★ A great tool	Produce specific, observable, measurable descriptors at each performance level; calibrate language to the grade band; align criteria to what the task is actually assessing — not generic virtues like 'effort'; know other assignments and rubrics for the class or student; check school or district documentation for provided rubrics if applicable.
✕ A poor tool	The difference between describing quality and describing effort; vague descriptors like 'shows understanding' or 'tries hard'; rubric levels that blur into each other with no clear distinction.

IN PRACTICE

Rubrics

✓ A quality educational tool generates

Rubric: Argumentative Essay — Grade 8

Criterion: Use of Evidence · Aligned: CCSS.ELA-LITERACY.W.8.1b

PURPOSE · SUMMATIVE · WEEK 4

Week 4 of persuasion unit. Learning model: Co-created with students on Day 1 (class profile preference for student ownership of assessment criteria).

4 — Expert: Selects two or more pieces of relevant textual evidence from the assigned class texts; accurately quotes or paraphrases; explicitly explains how each piece supports the specific claim; evidence is woven into the argument, not dropped in without connection.

3 — Proficient: Uses at least two pieces of textual evidence; mostly accurate quotation or paraphrase; provides some explanation of connection to claim, though it may be brief or partially developed.

2 — Developing: Uses one piece of evidence, or uses evidence without explaining its connection to the claim; may misquote or misrepresent the source; connection to argument unclear.

1 — Beginning: No textual evidence used, or evidence is unrelated to the claim being made.

Student-facing self-assessment version auto-generated. Calibrated to the three class texts assigned this week.

✕ A generic tool generates

Rubric: Argumentative Essay — Grade 8

Criterion: Use of Evidence

4 — Excellent: The student effectively uses multiple pieces of strong evidence to support their argument. Evidence is well-chosen and clearly supports the thesis. Sources are cited correctly.

3 — Proficient: The student uses evidence to support their argument. Most evidence is relevant and helps support the thesis. Sources are generally cited.

2 — Developing: The student uses some evidence, but it may not always be clearly connected to the argument. Evidence use is inconsistent. Some citation errors present.

1 — Beginning: The student uses little or no evidence. Evidence, when present, does not clearly support the argument. Citations may be missing.

- ✕ *No standard alignment; no Bloom's level; no unit context*
- ✕ *Descriptors blur between levels — 'effective' vs. 'relevant' vs. 'some' are not meaningfully distinct for students*
- ✕ *'Cited correctly' undefined — varies by grade and context*
- ✕ *Not tied to the class texts or specific evidence types*
- ✕ *No student-facing self-assessment version*
- ✕ *Not co-created — imposed rather than built with students*

Worksheets

Worksheet generators create practice activities for specific skills. The most common failure mode is rote practice: twenty identical computation problems with no context, no variation, and no opportunity for students to develop understanding alongside fluency. Strong worksheet tools combine skill practice with conceptual connection.

✓ What they can do	Generate practice worksheets for specific skills, create fill-in-the-blank, matching, and drill-and-practice activities, produce answer keys.
★ A great tool	Align difficulty to grade level, vary question types within a single worksheet, include clear instructions and context, calibrate to the specific skill being practised — connecting procedural fluency to conceptual understanding, adjust to age and grade-level; allow for saving, copying, printing, editing, and sharing; collect student work in any format - digital or a photo of handwritten work; hard to cheat digitally; connects to prior learning; recommends differentiation for a class.
✕ A poor tool	The difference between rote practice and meaningful skill application; appropriate cognitive demand; varied question types; worksheets that could apply to multiple grade levels or subject with minimal change.

IN PRACTICE

Worksheets

✓ A quality educational tool generates

Grade 3: Multiplication in Context

Standard: CCSS.MATH.CONTENT.3.OA.A.3 · Bloom's: Understand → Apply

CURRICULUM CONTEXT · AUTO-LOADED

Week 4 of multiplication unit. Students completed arrays and skip-counting. Common error from last week's check: students not connecting repeated addition to multiplication notation. Learning model: Problem-based (class profile).

Section 1 — Connect to prior learning: You know 4 + 4 + 4 = 12. Write this as multiplication: ___

Section 2 — Build understanding visually: Draw an array for 4 × 6. Total squares: ___

Section 3 — Skill practice with reasoning: a) 4 × 6 = ___ (How does your array help?) · b) 6 × 4 = ___ (What do you notice about a and b?) · c) 4 × 7 = ___ (How can 4×6 help? Don't count — reason.)

Section 4 — Real-world application: The library has 4 shelves, 8 books each. Write an equation and solve. Could you solve it with addition? Which is faster?

Section 5 — Communicate thinking: 'Explain to a student who was absent: what does 4×6 mean? Draw it if it helps.'

Support version auto-generated for 6 students (identified from last week's data): number lines + arrays pre-drawn; problems begin with 2× groups before progressing to 4×.

× A generic tool generates

Grade 3 Multiplication Practice Worksheet

Name: _____ Date: _____

Directions: Solve the multiplication problems below.

Section 1: Basic Facts

4 × 7 = ___ 8 × 9 = ___ 6 × 3 = ___
5 × 8 = ___ 7 × 4 = ___ 9 × 6 = ___
3 × 8 = ___ 8 × 8 = ___ 4 × 9 = ___

Section 2: Word Problems

1. Sara has 3 bags with 6 apples each. How many apples?

2. A classroom has 4 rows of 7 desks. How many desks?

Section 3: Challenge

Write your own multiplication word problem and solve it.

Answer Key: Available for teachers on request.

- × *No standard specified; no Bloom's; no curriculum context*
- × *No connection to prior learning or identified misconceptions*
- × *No visual models or conceptual scaffolding*
- × *Rote computation only — no reasoning or communication*
- × *No differentiation for students who need support*
- × *Could apply to any Grade 3 class with no modification — tool has no knowledge of this class's learning sequence*

Presentations

Presentation tools generate slide outlines, draft slide content, and write speaker notes. The most common failure is producing what is essentially a document divided into chunks — slides packed with text, no visual logic, and content that doesn't match the cognitive level of the intended audience. A strong presentation tool understands the difference between a slide and a page.

✓ What they can do	Generate slide outlines, draft content for each slide, create speaker notes, build presentations on specific topics or standards.
★ A great tool	Structure content logically for the intended audience and grade level; limit text on each slide to key terms or one central idea; suggest visuals and examples; include speaker notes with talking points and discussion prompts; allow for themes; take subject of material into account when designing; turn lesson plan into a presentation with standards; make engaging for age-appropriate; adapt style to suit K-12 context; applies pedagogy and evidence-based practices to slide development; produces slides for audio, visual, and text-based learners
✗ A poor tool	Basic presentation design principles; age-appropriateness of examples and language; factual accuracy in content-heavy slides; in some cases, the fundamental difference between a slide and a document.

IN PRACTICE

Presentations

✓ A quality educational tool generates

Slide Outline: The Water Cycle — Grade 5

Standard: NGSS 5-ESS2-1 · Bloom's: Understand → Explain

CURRICULUM CONTEXT · AUTO-LOADED

Week 2, Earth's Systems unit. Students completed states of matter last week — slides build directly on this. Class profile: strong visual learners; hands-on connections and discussion preferred over lecture.

Slide 1 — Hook (states-of-matter bridge): 'The water you drink today might have been inside a dinosaur.' [Visual: Earth's water age timeline] Discussion: 'Where do you think water goes when a puddle dries up?' — activates prior knowledge before new content.

Slide 2 — Key terms only (3 maximum): Evaporation → Condensation → Precipitation [Diagram: sun → vapour → cloud → rain → collection] Instruction note: Students trace the path first, then label.

Slide 3 — Deepen with real-world data: 'The Arctic is losing sea ice at an accelerating rate.' Discussion: 'Which stage of the cycle does this affect?'

Slide 4 — Check for understanding: Exit question on slide: 'Where does the water in your water bottle come from? Explain using today's vocabulary.'

Speaker notes for each slide include timing, discussion moves, and differentiation prompts — generated from class profile.

× A generic tool generates

Presentation: The Water Cycle — Grade 5

Slide 1: Introduction to the Water Cycle
The water cycle, also known as the hydrological cycle, describes the continuous movement of water on, above, and below the surface of the Earth. Understanding the water cycle is essential for learning about Earth's systems.

Slide 2: The Four Main Stages
1. Evaporation: Heat from the sun causes liquid water to turn into water vapor. 2. Condensation: Water vapor cools and forms clouds. 3. Precipitation: Water falls as rain, snow, or hail. 4. Collection: Water collects in oceans, lakes, and rivers.

Slide 3: Why the Water Cycle Matters
The water cycle distributes fresh water, regulates climate, supports life, and shapes landscapes over time.

Slide 4: Review Questions
What are the four stages of the water cycle? What causes evaporation? How is snow different from rain?

- × *No standard specified; no prior-knowledge connections*
- × *No class context — identical output for any Grade 5 class*
- × *Text-heavy slides — each is essentially a paragraph*
- × *No visual guidance, no discussion prompts*
- × *No connection to prior learning or student interests*
- × *Speaker notes absent — teacher has no teaching moves*
- × *Review questions at Remember level only*

Differentiation Tools

Differentiation tools adapt existing content for different reading levels, learning profiles, or cognitive entry points. The most common failure is surface differentiation: a 'modified' version that is simply shorter or uses simpler words, without maintaining the same learning goal. Genuine differentiation changes the scaffold, not the destination.

✓ What they can do	Adapt existing content for different reading levels, grade bands, or learning profiles; generate scaffolded and extension versions of lessons and tasks.
★ A great tool	Maintain the same core learning goal across all versions; provide genuine scaffolding (sentence frames, vocabulary support, graphic organiser prompts); create extension tasks that deepen thinking rather than simply add more; adjust cognitive difficulty to any higher or lower level; knows specific student performances and strengths or weaknesses; adjusts to individual student based on student's profile and data.
✕ A poor tool	The difference between adjusting surface features and truly differentiating; IEP-specific accommodations; when simplification has removed the cognitive goal entirely; students who need acceleration, not just more practice; over-adjust too much up or down and unable to handle or identify nuanced differences.

IN PRACTICE

Differentiation Tools

✓ A quality educational tool generates

Immigration in the Early 20th Century — Grade 8 History

Standard: CCSS.ELA-LITERACY.RH.6-8.1 · Bloom's: Analyse

STUDENT GROUPINGS · LAST MONTH'S READING ASSESSMENTS

Group 1 (7 students, Lexile 850–1000L): Standard text

Group 2 (9 students, Lexile 650–850L): Scaffolded version

Group 3 (4 students, ELL Intermediate): Language-supported

Group 4 (6 students, above grade): Extension analysis

All versions share the same learning goal: identify and explain push/pull factors from primary and secondary sources.

Standard (Group 1): [Original text — omitted for space] Discussion: 'What evidence does the author use? Is it enough?'

Scaffolded (Group 2): Same text + vocabulary in margin (persecution, tenement, instability defined in context). Reading scaffold: 'Find two reasons people left. Underline the words that tell you.'

ELL Support (Group 3): Simplified sentences, key vocabulary highlighted, cognate support, bilingual glossary, sentence frame: 'People left because ___. They hoped to find ___.'

Extension (Group 4): Original text + 1905 immigrant letter. 'Compare push factors across both documents. What does the letter reveal that the textbook paragraph does not?'

✕ A generic tool generates

Differentiated Reading: Immigration, Early 20th Century

On-Level Version: In the early 20th century, waves of immigrants arrived in the United States, fleeing poverty, persecution, and political instability. They settled in urban centres, taking low-wage factory jobs and living in crowded tenements.

Below-Level Version: Many people moved to the United States in the early 1900s. They left because life was hard. Some were poor. Others were not safe. When they arrived, they found factory jobs and lived in city apartments.

Above-Level Version: Mass immigration reflected complex push and pull factors varying by country of origin, socioeconomic class, and religious or ethnic background. Immigrants occupied the lowest rungs of the economic ladder while contributing to rapid growth of American manufacturing.

Discussion (same for all groups): Where did immigrants come from? Why did they come? Where did they live?

- ✕ *Lexile not calibrated to actual student data*
- ✕ *Same learning goal not maintained across all levels*
- ✕ *Below-level loses analytical goal — becomes recall only*
- ✕ *No ELL-specific language support*
- ✕ *Same discussion questions for all — no access scaffolding*
- ✕ *Tool has no knowledge of which students need which version*

ELL / MLL Tools

Tools for English language learners and multilingual learners simplify text, provide language scaffolding, generate bilingual materials, and adapt content to different proficiency levels. The critical distinction here is between providing access and lowering expectations — the best ELL tools help students access the same rigorous content while building the language skills to engage with it independently over time.

✓ What they can do	Simplify text, generate bilingual materials, provide language scaffolding, adapt content to Beginning, Intermediate, and Advanced proficiency levels.
★ A great tool	Maintain academic language development goals while providing access scaffolding; calibrate to specific proficiency levels; preserve content rigour while improving comprehensibility; include structures that build toward independent language use.
✗ A poor tool	The difference between comprehensible input and over-simplified content that doesn't build language; cultural responsiveness; the goal of language acquisition alongside content learning; appropriate proficiency-level calibration.

IN PRACTICE

ELL / MLL Tools

✓ A quality educational tool generates

ELL Support: Photosynthesis — Grade 6

Standard: NGSS MS-LS1-6 · WIDA Level: 3 (Intermediate)

STUDENT CONTEXT · CLASS PROFILE

4 students at this level; home languages: Spanish ×2, Somali ×1, Amharic ×1. Language development goal: Build academic vocabulary while maintaining full content rigour of MS-LS1-6.

Pre-teach vocabulary with cognate support

- photosynthesis / fotosíntesis (Spanish cognate flagged)
- chlorophyll — 'the green substance in leaves that captures sunlight' (defined in context, not in isolation)
- carbon dioxide — 'the gas in air that we breathe out'
- glucose — 'a kind of sugar that gives the plant energy'

Adapted text · comprehensible input, full scientific accuracy maintained

Plants make their own food through photosynthesis. Leaves capture sunlight using chlorophyll. The plant takes in water through its roots and carbon dioxide from the air. Using sunlight's energy, it converts these into glucose.

Language production frames

'Plants use ___ and ___ to make ___.' · 'The purpose of photosynthesis is to ___.'

Paired discussion (home language first, then English): 'In your own words — or in your home language first — explain what a plant needs to make food.'

Progress check: 3-question comprehension probe in simplified language, aligned to same standard as on-level version.

✕ A generic tool generates

Simplified Science Reading: Photosynthesis

Easy Version for ESL Students

Photosynthesis is how plants make food. Plants need:

1. Sunlight (from the sun)
2. Water (from the soil)
3. Carbon dioxide (from the air)

Plants use these to make glucose. Glucose is food for the plant. Plants also make oxygen, which we breathe.

Simple formula: Sunlight + Water + Carbon Dioxide → Glucose + Oxygen

Vocabulary

- Photosynthesis: how plants make food
- Glucose: plant food / sugar
- Oxygen: the gas we breathe

Questions

1. What do plants need to make food?
2. What do plants produce?
3. Where do plants get water?

- ✕ *No WIDA proficiency level specified*
- ✕ *No cognate support for specific home languages*
- ✕ *Content simplified below grade-level rigour*
- ✕ *No language production frames — comprehension only*
- ✕ *No bilingual support or home-language bridge*
- ✕ *One version for all ELL students regardless of proficiency*
- ✕ *Tool has no knowledge of students' home languages, proficiency levels, or language development goals*

IEP Tools

IEP tools assist with drafting goal language, generating accommodation and modification suggestions, creating progress monitoring templates, and summarising evaluation data. This is one of the most legally and professionally sensitive categories of educational AI. The output is a starting point for the IEP team — never a finished document. Professional and legal judgment must always override generated language.

✓ What they can do	Draft IEP goal language, generate accommodation and modification suggestions, create progress monitoring templates, help summarise evaluation data.
★ A great tool	Align goal language to specific disability categories and SMART criteria (who, will do what, by when, as measured by); integrate IDEA compliance considerations; produce measurable, time-bound objectives with clear monitoring methods, assist teachers without replacing them, understand and adapt to particularly intense or complex disabilities for one or multiple students, execute quality checks before providing output.
✕ A poor tool	Legal nuances of IDEA compliance; individual student context that only the IEP team holds; the primacy of parent and guardian voice; when professional and legal judgment must override generated language.

IN PRACTICE

IEP Tools

✓ A quality educational tool generates

IEP Annual Goal: Reading Comprehension

Grade: 4 · Disability: Specific Learning Disability (Reading)

PRESENT LEVEL · 3 MARCH ASSESSMENT

On teacher-administered probe, student identified main idea with 45% accuracy on 3rd-grade texts. Grade-level benchmark is 80%. Gap: approximately one year below grade level.

Annual Goal

By [date], given a 4th-grade informational text (Lexile 740–820L), [Student] will independently identify the main idea and at least two supporting details with 80% accuracy across 4 of 5 consecutive trials, as measured by weekly teacher-administered reading probes.

Short-term Objective 1

By [date], given a 3rd-grade informational text with graphic organiser support, [Student] will identify the main idea with 80% accuracy in 4 of 5 teacher-prompted opportunities.

Short-term Objective 2

By [date], given a 3rd-grade informational text without graphic organiser, [Student] will identify two supporting details in 3 of 4 trials.

Measurement: Weekly probe; 8-week progress checkpoint.

DRAFT — IEP team review required. Parent and student input, legal verification, and qualified SPED educator sign-off required before this language is finalised.

✗ A generic tool generates

Suggested IEP Goals: Reading

[No present level of performance — goals not anchored to any baseline data]

Suggested Annual Goal Option 1

[Student] will improve their reading comprehension skills to meet grade-level expectations by the end of the IEP period, as measured by teacher observation and assessment.

Suggested Annual Goal Option 2

[Student] will demonstrate improved ability to identify the main idea and supporting details in grade-level texts, showing progress as measured by quarterly assessments.

Suggested Accommodations

- Extended time on assessments
- Preferential seating
- Simplified directions
- Use of graphic organisers
- Access to audiobooks

Suggested Modifications

- Reduced assignment length
- Modified reading materials
- Alternative assessment formats

- ✗ *Goals do not meet SMART criteria*
- ✗ *Goals are not measurable — no baseline, no timeline, no measurement method specified*
- ✗ *Accommodations are generic — not matched to this student's disability category or assessed needs*
- ✗ *IDEA compliance not verified*
- ✗ *Tool has no knowledge of the student's evaluation data, IEP history, or what the team has already tried*

AI Tutors

AI tutors provide on-demand explanations, answer student questions, offer practice problems, and give feedback on student responses. The most important distinction is between a tutor that gives students the answer and one that guides students using pedagogical tools and approaches. The best AI tutors use Socratic approaches — prompting students to think, predict, and discover, rather than simply delivering information.

✓ What they can do	Provide on-demand explanations, answer student questions, offer practice problems, give immediate feedback on student responses, support self-paced learning.
★ A great tool	Adapt explanation style and complexity to the student's demonstrated level; track misconceptions and adjust; use questions to guide students to discovery rather than giving answers; know when to prompt teacher involvement; adjust to age range and competency level; allows for speech input, speech output; works in 60+ languages; adjusts to any language mid-sentence; has built-in safety and security infrastructure; offers insights for teachers, access to student-AI conversations; alerts educators and administrators to concerning behavior.
✕ A poor tool	Social-emotional cues that a student needs human support; when a student is finding shortcuts around learning rather than learning; grade-appropriate boundaries; the limits of AI interaction without teacher oversight; no alert system for educators and schools for concerning behavior or conversation.

IN PRACTICE

AI Tutors

✓ A quality educational tool generates

AI Tutor: Algebraic Expressions — Grade 6

Standard: CCSS.MATH.6.EE.A.2

STUDENT CONTEXT · SESSION HISTORY

This student understands what a variable represents but has difficulty distinguishing additive language ('three more than n') from multiplicative language ('three times n'). Flagged in 2 prior sessions. This session targets that gap.

AI: You've got the idea of what a variable does — good. Now let's build on that. What do you think 'three more than n' means in everyday language?

[Student: like... n plus three?]

AI: Exactly. And how about 'three times n'?

[Student: 3n?]

AI: Right. So here's a test: if n = 5, what is 'three more than n'? And then what is 'three times n'?

[Student works through both]

AI: You got it. Now try this yourself: 'seven less than twice a number.' Write the expression, then tell me what each part means.

Session flag sent to teacher dashboard: Student confuses additive vs. multiplicative language in algebraic expressions. 1 additional targeted session recommended before assessment.

✕ A generic tool generates

AI Tutor: Algebraic Expressions

Student: I'm confused about writing algebraic expressions. Can you help?

AI: Of course! Let me explain algebraic expressions.

An algebraic expression includes numbers, variables (letters representing unknown values), and operations like addition, subtraction, multiplication, and division.

Examples: • 'three more than a number' = n + 3 · • 'twice a number' = 2n · • 'five less than a number' = n - 5

Here are some practice problems: 1. Write an expression for 'four more than a number' · 2. Write an expression for 'twice a number minus six' · 3. Write 'the product of eight and a number'

Try these and let me know if you need help! Did this explanation help?

- ✕ *No knowledge of this student's prior sessions or gaps*
- ✕ *No connection to class curriculum or current unit*
- ✕ *Explains the concept rather than guiding discovery*
- ✕ *No adaptive response to what this student already knows*
- ✕ *Teacher has no visibility into this interaction*
- ✕ *No flagging of persistent errors for teacher follow-up*
- ✕ *Generic examples — not linked to class curriculum or what students have been working on this week*

School Communication & Newsletter Tools

Communication tools draft family-facing messages, school newsletters, announcements, and professional correspondence from bullet-point inputs. They are genuinely useful for absorbing the drafting overhead of routine communication. The failure mode is generic, corporate-sounding output that doesn't reflect the school's voice or the warmth of the educator-family relationship.

✓ What they can do	Draft family-facing messages, school newsletters, announcements, and professional correspondence from bullet-point inputs.
★ A great tool	Produce warm, organised, community-appropriate communication; adjust tone between formal and conversational; make information clear and actionable for families; reflect the school's actual voice rather than generic corporate language.
✕ A poor tool	Sounding like your school or reflecting your community's voice; cultural and contextual nuance in communication; the human relationship dimension of school-family communication; require additional work or translation that a good tool doesn't; fails to adhere to best practices in school community engagement.

IN PRACTICE

School Communication & Newsletter Tools

✓ A quality educational tool generates

Family Communication: Student-Led Conferences

CONTEXT · SCHOOL PROFILE

Riverside Elementary — English/Spanish bilingual community. School communication style: warm and direct. Families respond well to clear action items early in the message.

English draft

Dear Riverside Families,

Student-Led Conferences are on Thursday, November 14th — and these are worth clearing your calendar for. This year, your child will guide the conversation, walk you through their portfolio, and share where they want to grow. It's one of the most meaningful evenings of the school year.

Sign-ups are open now (link below) — slots go fast. Conferences run 3:00–7:00 PM. Need a different time? Reach out to your child's teacher directly.

We can't wait to see you there.
The Riverside Team

Spanish version: Auto-generated — culturally adapted, not a literal translation. Warmth and tone calibrated to community profile, not just language-swapped.

[Both versions reviewed for action item clarity]

✗ A generic tool generates

Email: Student-Led Conferences Notification

Subject: Student-Led Conferences — November 14th

Dear Parents and Guardians,

I hope this message finds you well. I am writing to inform you that Student-Led Conferences are scheduled for Thursday, November 14th, from 3:00 PM to 7:00 PM.

During Student-Led Conferences, students will have the opportunity to share their learning progress with families. This is a valuable opportunity for students to take ownership of their educational journey.

To schedule your conference, please use the sign-up link below. Appointments are first-come, first-served. If you cannot attend, please contact us to arrange an alternative.

We look forward to seeing you and celebrating your child's growth and achievements.

Thank you for your continued support.
Warm regards, [Teacher Name], [School Name]

- ✗ *Not calibrated to school's voice or community culture*
- ✗ *No multilingual version — requires separate request*
- ✗ *'I hope this message finds you well' — generic boilerplate*
- ✗ *Action items buried in paragraphs — not front-loaded*
- ✗ *Does not reflect the school's tone or community relationship*
- ✗ *Tool has no knowledge of school voice or family demographics*

Teacher Professional Development Tools

Professional development tools build structured learning plans and set professional goals for a school or district's employees, particularly faculty. A strong PD tool is specific, milestone-based, and grounded in named frameworks, evidence-based practices, and the current skills and competencies of employees.

✓ What they can do	Build structured PD plans, set professional goals, summarise research, generate reflection prompts, or connect educators to relevant frameworks and resources.
★ A great tool	Create specific, milestone-based learning plans with measurable outcomes based on the current skills and competencies of educators and evidence of such in the classroom; generate reflection questions that prompt genuine professional growth rather than surface reflection.
✕ A poor tool	Accountability and follow-through; the coaching relationship; individualized needs that a generic plan cannot anticipate.

IN PRACTICE

Teacher Professional Development Tools

✓ A quality educational tool generates

Professional Learning Plan — [Teacher Name]

Created from: Mid-year instructional coaching review

GROUNDED IN · ACCOUNTABLE TALK (MICHAELS & O'CONNOR, 2012)

School improvement goal 2b: Increase student discourse from 20% to 40% of class time by June 2026.

Month 1 — Establish baseline and build knowledge

- Read Talk Moves, Ch. 1–3 (Chapin, O'Connor & Anderson)
- Record 20 minutes of instruction; count student-to-teacher talk turns using provided protocol
- Reflection: 'Which discussion moves do I already use? Where do students disengage — and why?'

Month 2 — Implement and document

- Introduce 2 Accountable Talk moves per week: revoicing and pressing for reasoning
- Video one lesson; compare student talk ratio to baseline
- Share one observation with instructional coach

Month 3 — Assess and reset

- Has student discourse increased? Which moves work?
- Set a new 3-month target based on what you observed

Check-ins: Monthly 30-min coaching conversation. Connected to school improvement plan: Goal 2b. Resources: Curated and verified — not generic search results.

✕ A generic tool generates

Teacher Professional Development Plan

Goal: Improve student engagement and discussion skills.

Month 1

- Research strategies for increasing student participation
- Read one book or article about student engagement
- Observe a colleague's classroom

Month 2

- Implement two or three new discussion strategies
- Reflect on what is working and what needs adjustment
- Discuss progress with department head or mentor

Month 3

- Continue refining discussion strategies
- Collect student feedback on classroom discussions
- Set goals for next semester

Resources to Explore

- Books on student engagement (search for suggestions)
- Online professional learning communities
- Professional development workshops in your district

- ✕ *No specific instructional framework named*
- ✕ *Not connected to school goals or coaching structure*
- ✕ *Resources vague — 'search for books about this topic'*
- ✕ *No measurement of progress — reflection questions only*
- ✕ *Generic enough to apply to any teacher in any subject in any school — no contextual awareness whatsoever*
- ✕ *Tool has no knowledge of this teacher's practice, goals, prior PD, or what the school improvement plan requires*

Web-to-Classroom Tools

Web-to-classroom tools convert URLs, articles, and real-world content into classroom-ready activities: comprehension questions, vocabulary lists, discussion prompts, even assessments. A strong tool reads and understands the snip, screenshot, URL, or article, and uses it as input to generate an age- and grade-appropriate activity, lesson plan, or assessment as directed by the educator.

✓ What they can do	Convert URLs, articles, and real-world content into classroom-ready activities: vocabulary lists, comprehension questions, discussion prompts, lesson plans, worksheets, presentations, quizzes, or assessments.
★ A great tool	Generate questions at multiple Bloom's levels that require engaging the specific text; include vocabulary pre-teaching; connect content to broader themes; provide extension tasks alongside core activities.
✕ A poor tool	Whether generated activities are actually grounded in the source text; reading level match to your students; text-dependent thinking.

IN PRACTICE

Web-to-Classroom Tools

✓ A quality educational tool generates

Article → Classroom: 'The Decline of Arctic Sea Ice'

Grade 8 · Standard: MS-ESS2-4 + RST.6-8.8 · Bloom's: Analyse → Evaluate

CURRICULUM CONTEXT · AUTO-LOADED

Week 3, Earth's Climate unit. Focus: evaluating scientific evidence. This week's literacy standard RST.6-8.8 requires students to evaluate evidence in scientific texts. Article reading level: 1080L — appropriate for on-level Grade 8. Simplified version auto-generated for 5 students.

Close reading — Paragraph 3 (text-dependent): The author states: 'The Arctic is warming four times faster than the global average.' What evidence does the author provide to support this claim? Is the evidence sufficient? Explain your reasoning.

Inference (Paragraphs 4–5): Based on the data presented, what can you infer about the relationship between sea ice loss and ocean temperature? Use specific details from the text — not general knowledge.

Evaluate a claim: The article presents a 2035 prediction. What assumptions does it rely on? What would have to be true for it to hold?

Perspective extension: The author is a climate scientist. How might this article read differently if written by a fisherman who depends on Arctic fishing for their livelihood?

Vocabulary (context-determined from this specific text): saline, albedo, feedback loop — infer from context first.

✕ A generic tool generates

Reading Activity: Arctic Sea Ice Article

Instructions: Read the article, then answer the questions.

Comprehension Questions

1. What is happening to Arctic sea ice?
2. Why is sea ice important for the environment?
3. What are two causes of sea ice loss?
4. How does this affect polar bears and Arctic animals?
5. What do scientists predict will happen in the future?

Vocabulary

Find these words in the article and write a definition:
• Arctic · • Melting · • Climate change · • Ecosystem

Discussion Questions

- What surprised you about this article?
- What can we do to help the environment?
- Do you think climate change is serious? Why?

Writing Extension: Write a short paragraph about what you learned.

- ✕ *No standard aligned; no Bloom's level specified*
- ✕ *Questions largely answerable without reading the article*
- ✕ *Vocabulary words too basic — not from article's academic language; selected generically, not from this specific text*
- ✕ *Questions 1–5 require no close reading of this article*
- ✕ *No Bloom's progression; no text-dependent questions*
- ✕ *Tool has no knowledge of curriculum sequence, reading levels, or what students are studying this week*

Subject-Specific Tools (Maths, Science, Art, History, and more)

Subject-specific tools generate content, problems, explanations, and activities for individual disciplines. The failure mode is treating all subjects as generic content delivery — missing the thinking frameworks, conventions, and ways of knowing that define each discipline. A history lesson is not just content about the past; it involves sourcing, corroboration, and contextualisation. A maths activity is not just computation; it involves number sense, reasoning, and mathematical communication.

✓ What they can do	Generate subject-specific content, problems, explanations, examples, and activities for Maths, Science, Art, History, ELA, Social Studies, and other disciplines.
★ A great tool	Apply discipline-specific conventions and accuracy standards (mathematical notation, scientific method, historical sourcing, art criticism frameworks); reflect each subject's pedagogical approach rather than treating all content the same, be really good at reading, displaying, or using subject-specific symbols, visuals, terminology, concept, formulas, etc.
✗ A poor tool	Subject-specific ways of thinking (inquiry-based science, historical thinking, number sense over computation); technical accuracy in content-heavy disciplines; the difference between a discipline's content and its way of knowing, generating correct visuals or uses of symbols, concepts, and principles.

IN PRACTICE

Subject-Specific Tools (Maths, Science, Art, History, and more)

✓ A quality educational tool generates

Grade 3 Mathematics: Multiplication — Conceptual + Procedural

Standard: CCSS.MATH.CONTENT.3.OA.A.3 · Bloom's: Understand → Apply

CURRICULUM CONTEXT · AUTO-LOADED

Week 4, Operations unit. Students mastered repeated addition and arrays last week. Error pattern from 8 students' work: not connecting multiplication to repeated addition. Learning model: Problem-based (class profile).

Problem launch (connects to prior knowledge): 'You know that 4 + 4 + 4 = 12. Can you write that as a multiplication equation?'

Build understanding: Draw an array for 4 × 6. How many total? ___

Reason and practise (do not just compute — explain): a) 4 × 6 = ___ (How does your array help?) · b) 6 × 4 = ___ (What do you notice about a and b?) · c) 4 × 7 = ___ (Use 4×6 to help — don't count.)

Real-world application (discipline-specific pedagogy): Library: 4 shelves, 8 books each. Write an equation. Could you solve this with addition? Which is faster — and does the answer change? (Number sense, not computation)

Communicate mathematical thinking: 'Explain to a student who was absent what 4 × 6 means. Draw it if it helps.'

Support version (8 students, from error data): number lines and arrays pre-drawn; starts with 2× groups.

✕ A generic tool generates

Grade 3 Multiplication Lesson

Learning Objective: Students will practise multiplication facts up to 10 × 10.

Warm-Up: Count by 4s: 4, 8, 12, __, __, __, __, __

Lesson: Multiplication is a fast way to add the same number many times. Example: 4 × 3 = 4 + 4 + 4 = 12

Practice Problems

4 × 7 = ___ 8 × 9 = ___ 6 × 3 = ___
5 × 8 = ___ 7 × 4 = ___ 9 × 6 = ___
3 × 8 = ___ 8 × 8 = ___ 4 × 9 = ___

Word Problems

1. Sara has 3 bags of 6 apples. How many apples total?
2. A classroom has 4 rows of 7 desks. How many desks?

Challenge: Write your own multiplication word problem.

- ✕ *No standard; no Bloom's level; no curriculum context*
- ✕ *No subject-specific pedagogy — treated as generic content*
- ✕ *No number sense or reasoning — computation only*
- ✕ *No conceptual connection; no communication of thinking*
- ✕ *No differentiation for students who need support*
- ✕ *Applies to any Grade 3 class anywhere — no adaptation to this class's learning sequence, error patterns, educational model, or what was taught last week*

03

Why pedagogy in AI models matters.

Not all AI tools in K-12 are equal. How models are built, whether they have been fine-tuned, whether they use RAGs (retrieval-augmented generation), and how any AI agents within the tool have been designed — all of this shapes the quality of what comes out.

> **Understanding this matters enormously for your students.**

The comparison examples in each tool section above represent a real and consistent gap between tools that have been built with pedagogical intent and tools that have not.

The technical architecture matters: a model fine-tuned on high-quality educational materials, with carefully designed agents and retrieval systems built around curriculum standards, will behave differently from a general-purpose model with an educational interface.

The practical test is simple: apply the same critical standard you would to any instructional material. If a colleague handed you a lesson plan with vague objectives, generic activities, and no connection to your standards, you would not use it as-is. Apply that same lens to AI-generated content. Ask yourself:

Would I stake my professional reputation on this output? Would I hand this to my students and be satisfied that it was the highest educational quality?

Think critically about quality at every step. Read AI outputs the way an experienced teacher reads a textbook chapter: look for alignment to standards, appropriate cognitive demand, accuracy of content, and age-appropriateness of language and examples.

If an output would require significant revision before it's usable, the tool is generating raw material — which may still be useful, but is not the same as purpose-built educational content.

Don't forget what's at stake: student learning, student growth, student confidence, graduation journeys, career readiness.

Every lesson, every activity, every piece of feedback counts. Poor quality AI-generated content can create learning friction, cause confusion, discourage students, and waste precious instructional time. On the other side of that equation: a well-designed AI tool, used well, gives you the ability to personalise learning every single day — adapting to where each student actually is, to their learning needs, in a way that was never practically possible before given the sheer volume of time and work it would have required.

Choose your tools the way you choose your instructional materials: with professional judgment, healthy scepticism, and the student at the centre of every decision.

Prompting Basics for Educators

AI tools produce outputs based on the instructions they receive. The quality of your prompt directly shapes the quality of what comes back. This is not a limitation — it is a feature. The educator with good prompting skills consistently gets better, more usable results.

THE ANATOMY OF A GOOD PROMPT

A well-constructed prompt has five components. You do not need all five every time, but including more of them consistently produces better outputs.

Role: Tell the AI who you are and what context you're working in. Example: "You are helping a 4th-grade teacher prepare a maths lesson."

Context: Describe the specific situation — grade level, subject, prior knowledge, the standard you're working toward. The more specific, the better.

Task: State clearly what you want. Not just "make a lesson" but "create a 45-minute lesson plan with a warm-up, direct instruction, guided practice, and an exit ticket."

Constraints: Tell it what to avoid or what limits apply. "Do not include videos — we do not have tech access today." "Keep reading level at Grade 3." "This is for English language learners at intermediate proficiency."

Format: Specify how you want the output structured. "Use a table." "Give me a bulleted list." "Write the rubric with four performance levels."

There are many printable prompting technique sheets available, such as the one below.

Looking for more? Try an in-depth read of Google's Guide to Prompt Engineering.

Common prompting mistakes and how to fix them

Too vague: "Make a lesson about fractions." → Fix: Add grade, standard, length, and what you want students to be able to do by the end.

No grade-level anchor: Without it, most tools will default to a generic adult-appropriate level. Always specify grade or reading level.

Accepting the first draft: Treat AI output as a starting point. Prompt again: "Make the exit ticket harder — it should require students to apply, not just recall."

Forgetting your students: Generic prompts produce generic outputs. Include information about your actual students: "This is a class with several ELL students at intermediate level, and a few students who are working above grade."

Not specifying format: If you need a table, say so. If you need a Word-ready document structure, say so. The tool will match the format you describe.

Where and How to Start

Learning to use AI tools well is itself a learning process — and it is worth approaching it the way you'd approach learning anything: with scaffolding, with realistic goals, and by building one skill on top of another. No one learns every tool at once. You don't need to.

The sequence below is a practical starting point in the Colleague AI platform. It walks through a connected workflow that touches most of the tool categories in this guide — so you can see how they relate to each other in real use. You do not need to complete it all at once. Each step is a usable output on its own.

Join a self-paced, simple, hands-on mini-class →

Complete the steps below in the Colleague AI platform. Each step builds on the one before it, so you can see how the tools connect — and evaluate the quality of each output as you go.

1. Create a lesson plan
2. Quality-check the plan
3. Generate a rubric
4. Differentiate
5. Create a presentation
6. Generate an activity or assignment
7. Submit as a student
8. Grade your own submission

> **After completing this sequence, you will have experienced every major tool category in this guide from both the educator and student perspective. That experience is worth more than reading any overview — including this one.**

How do you evaluate AI platforms? **Here are 60+ questions to ask K-12 AI vendors** - the most comprehensive list of questions published to date!

Looking for an introduction to AI? Want to understand what it is?

AI is Maths, Not Magic! Download our introduction and guide for educators new to AI.

Or try our free AI mini-class and start trying and using AI today!

colleague.ai

Questions?
Contact us: hello@colleague.ai

Colleague.ai
Kirkland, WA

In Partnership With:

colleague.ai

AmplifyLearn.AI

National Science Foundation

IES Institute of Education Sciences

U.S. Department of Education