

NotebookLM in Teaching

10 Unexpected Ways to Use NotebookLM with Your Students



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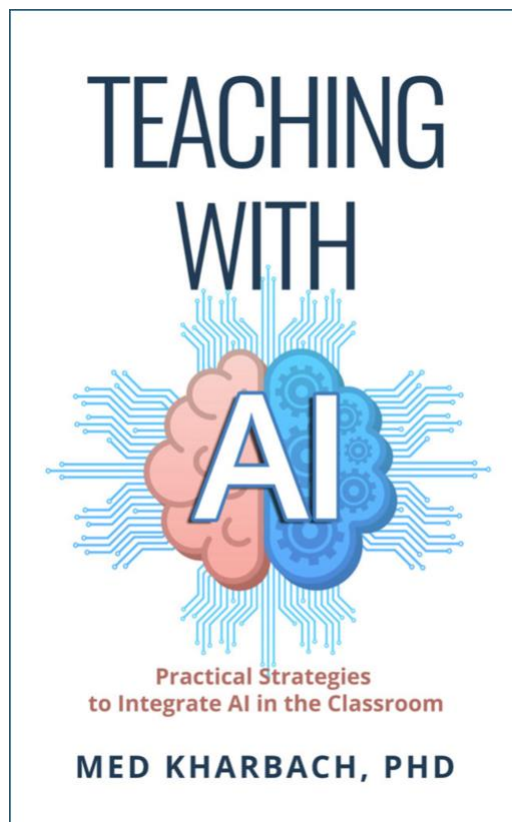
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Teaching with AI

Practical Strategies to Integrate AI in The Classroom

In [Teaching with AI](#), I speak directly to you as a teacher working through real classroom questions about AI. The book helps you build strong AI literacy so you understand how these systems work, where they help, and where caution is needed. I share concrete classroom strategies, examples drawn from practice, and ways to align AI use with sound pedagogy and professional judgment. My goal is to support you in using AI thoughtfully as part of your teaching, in ways that deepen learning and keep human expertise at the center.

Grab your copy [here](#).



Introduction

NotebookLM is arguably one of the best AI assistants available for teachers and students today. I included it in my list of [top educational AI tools for 2025](#), and given the recent features Google has added, the platform is becoming a serious alternative to ChatGPT and Claude. The power of NotebookLM lies in its approach to how AI interacts with information. You build a contained context window by uploading select sources, and then you leverage the full power of Google's AI technology to work with those specific materials. Everything the AI produces stays grounded in what you've provided.

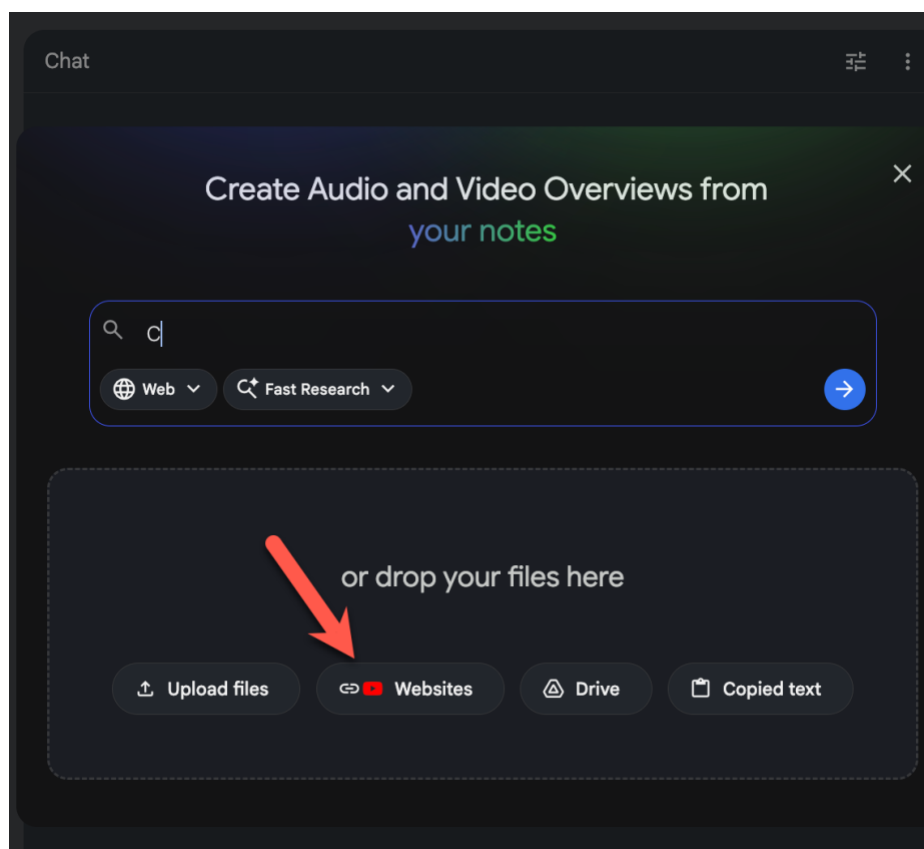
General purpose chatbots draw from vast training data which makes them flexible but also prone to generating plausible-sounding information that isn't actually accurate. The contained context window in NotebookLM reduces these instances of hallucination significantly. When you ask a question, the AI looks at your uploaded documents rather than guessing based on patterns in its training. The responses become more accurate, more relevant, and more trustworthy because they're tethered to sources you've chosen and, ideally, sources you've already read yourself.

In this guide, I share ten practical ways students and teachers can use NotebookLM to support learning. These aren't the obvious applications you'll find in a quick tutorial. They're strategies grounded in how people actually learn: through self-assessment, dialogue, visualization, and the kind of careful source work that serious academic tasks require. Each section offers a specific use case along with concrete suggestions for putting it into practice.

In the following sections, I share ten practical strategies for using NotebookLM in educational settings. Some focus on individual study habits, others support collaborative and dialogic engagement, and a few address the specialized demands of research and academic writing. You don't need to use all ten. Start with one or two that fit your context, see how your students respond, and build from there.

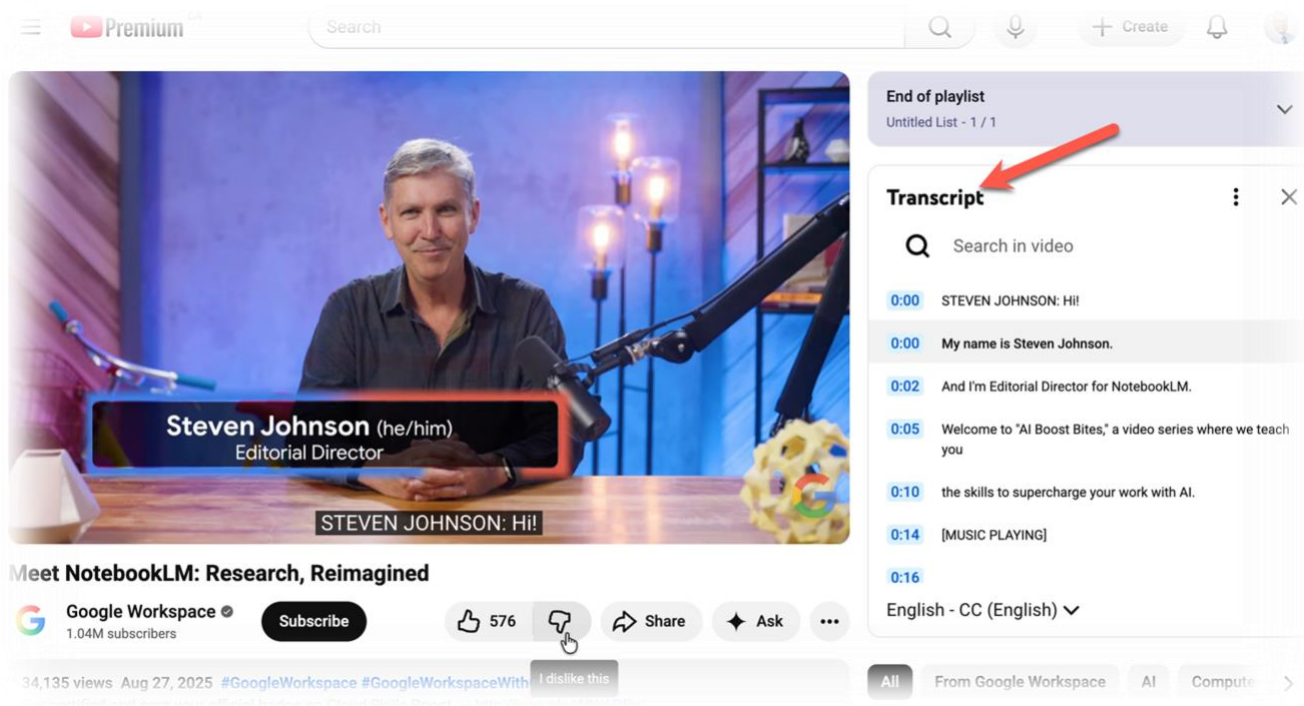
1. Summarize YouTube Videos

YouTube has quietly become one of the richest libraries of educational content available today. From documentary-style explainers to university lectures and expert interviews, students now have access to hours of high-quality material on almost any subject. The challenge, of course, is time. A 45-minute lecture might contain exactly the information a student needs, but finding and extracting those key ideas can feel like searching for specific pages in a book without an index.



This is where AI tools like NotebookLM become handy. Students can feed video content into the platform and ask it to summarize the main arguments, pull out key concepts, or even generate study questions based on what was covered. The tool does the heavy lifting of condensing lengthy material into something more manageable which frees students to focus on understanding and applying the ideas rather than just trying to keep up with the pace of the video.

Now, here's an honest note from my own experience: I don't fully trust AI to watch and interpret video content directly. The technology isn't quite there yet when it comes to accurately processing visual and audio information together. So my preferred approach is a simple workaround. I open the YouTube video, scroll down below the player, and click on the transcript option. YouTube auto-generates transcripts for most videos, and you can copy that entire text with one click. From there, I paste the transcript directly into NotebookLM as a source document. This way, the AI is working with the actual words spoken in the video.



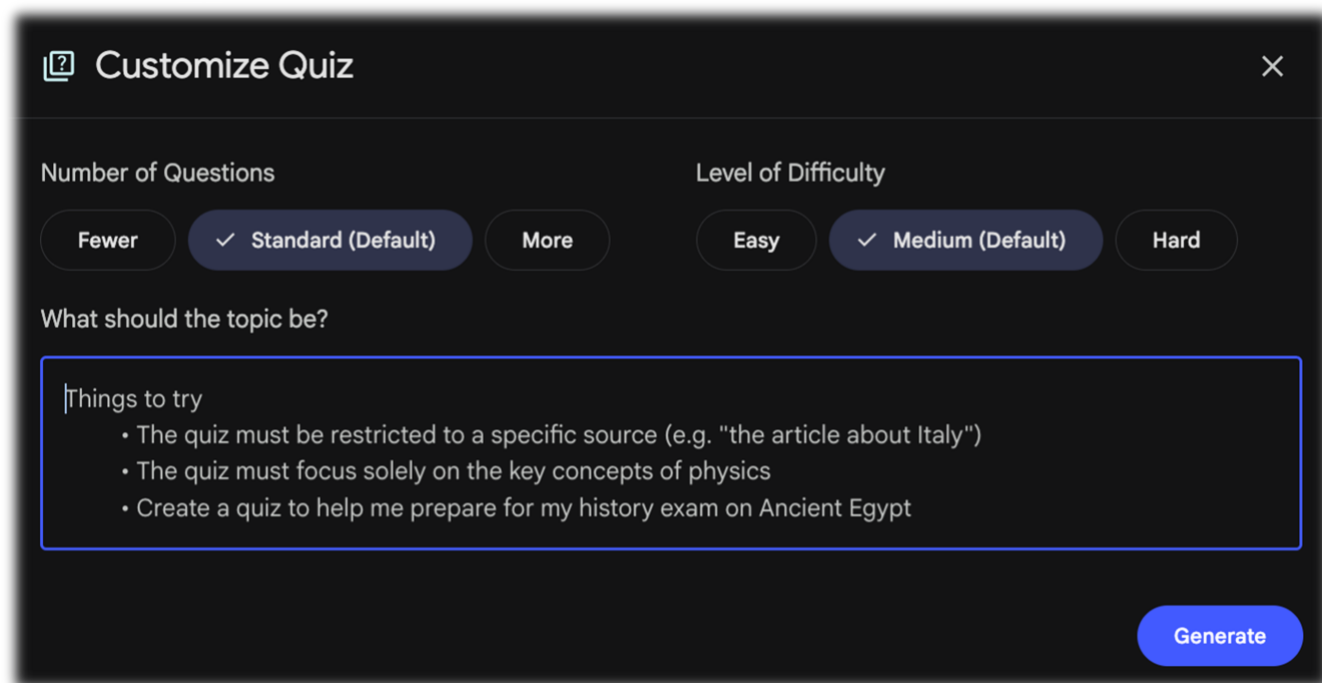
This strategy works particularly well for research projects, exam preparation, or any situation where students need to process multiple video sources efficiently. They can compare ideas across several videos, identify common themes, or locate specific moments worth rewatching. It puts students in control of the content and this shift alone makes a real difference in how deeply they engage with the material.

2. Formative Self-Assessment

Comprehension monitoring is one of those metacognitive strategies that sounds technical but describes something students do naturally when reading goes well. It's the internal check that happens when a reader pauses and asks, "Wait, did I actually understand that?" Researchers like Baker (1979) and Maki and McGuire (2002) have studied this process for decades, sometimes calling it self-assessment of comprehension or metacomprehension. Baker (1979, 1989) described it as the evaluation and regulation of one's own ongoing comprehension processes. In plain terms, it's the skill of knowing when you've grasped something and when you haven't, then adjusting your approach accordingly.

The problem is that many students struggle with this kind of self-awareness, especially when working independently. They read a chapter or watch a lecture and assume they understood it because the words made sense in the moment. But understanding individual sentences isn't the same as grasping the larger argument or being able to apply those ideas later. Without regular checkpoints, students often discover the gaps in their comprehension only when it's too late, usually during an exam or when trying to complete an assignment.

NotebookLM offers a practical solution through its quiz feature. After uploading a reading, transcript, or set of notes, students can generate quiz questions based on that specific content. These aren't generic questions pulled from a database; they're tied directly to the material the student is supposed to learn. Answering them becomes an honest test of whether the concepts actually stuck. When a student gets a question wrong or hesitates before answering, that moment of uncertainty is valuable information. It signals exactly where they need to go back and spend more time.



What makes this approach powerful is the immediacy. Students don't have to wait for a teacher to grade something or schedule a review session. They can check their own understanding right after engaging with new material, which is precisely when that feedback is most useful. The quiz feature essentially automates the comprehension monitoring process, giving students a structured way to practice a skill that many never develop on their own.

3. Dialogic Reasoning

Dialogic reasoning comes from the work of Mikhail Bakhtin (1981), the Russian philosopher who argued that meaning isn't something we arrive at alone. It emerges through dialogue, through the back-and-forth exchange of ideas between voices. In a classroom, this might look like a Socratic seminar or a small group discussion where students build on each other's thinking. The value isn't just in hearing different perspectives but in the way those perspectives push us to clarify, defend, and sometimes revise our own understanding. Dialogue forces thinking into the open where it can be examined and sharpened.

The challenge for students is that these kinds of rich conversations don't always happen on demand. Study groups fall through, office hours don't align with schedules, and sometimes a student is working through material at midnight with no one to talk to. This is where NotebookLM can serve as a surprisingly capable

dialogue partner. Students upload their course materials, class notes, or highlights from their readings, and then they have a source-grounded companion ready to engage with their questions at any hour.

The key is asking the right kinds of questions. A student might upload their notes from a history unit and then ask something like, "Based on these sources, what were the main tensions between economic interests and moral arguments during this period?" Or they could try, "How would the author of this article respond to the argument made in my lecture notes?" These prompts invite the kind of comparative, analytical thinking that good classroom discussions produce. The AI draws only from the uploaded sources, so the conversation stays grounded in the actual course content.

This approach also helps students prepare for class discussions and written assignments. By rehearsing their thinking in dialogue form, they often discover which ideas feel solid and which ones need more development. They might realize they can't quite explain a concept they thought they understood, or they might stumble onto a connection between readings they hadn't noticed before. NotebookLM becomes a thinking partner that helps students externalize their reasoning, which is often the first step toward genuinely owning the material.

4. Identify Research Gaps

Finding a genuine research gap is one of the most difficult parts of academic work. You can read dozens of papers and still struggle to articulate what hasn't been studied yet or where the existing literature falls short. NotebookLM can help with this process, but the approach matters. The tool works best when you've already done the intellectual groundwork yourself, meaning you've actually read the papers you're uploading, engaged with the arguments, and formed your own understanding of the field.

This isn't just about academic integrity. Reading the sources yourself serves two practical purposes. First, it helps you grow as a scholar in your discipline. You start recognizing patterns, debates, and methodological choices that shape your field. Second, and just as important, it gives you the background knowledge to evaluate what the AI produces. If you haven't read the papers, you have no way of knowing whether NotebookLM's suggestions are genuinely insightful or completely off base. AI can fabricate ideas that sound plausible, and the only real safeguard against that is your own familiarity with the material.

Once you've done that reading, you can upload multiple papers and ask NotebookLM to identify areas that remain underexplored across the sources. The tool can scan for topics mentioned briefly but never developed, populations or contexts that weren't included in existing studies, or methodological approaches that haven't been tried. Because NotebookLM grounds its responses in your uploaded documents, the suggestions stay connected to your actual literature base rather than pulling from generic knowledge about the field.

Another strategy I find useful is to do the gap identification work yourself first. As you read, jot down your own hunches about what's missing or what questions the authors didn't answer. Then upload those notes alongside the original papers and ask NotebookLM to help you refine and expand your ideas. You might prompt it to suggest research questions based on the gaps you've noticed, or ask it to identify which of your ideas has the strongest support in the existing literature. This keeps you in the driver's seat intellectually with the AI serving as a sounding board.

5. Audio Summaries

One of the most underrated features in NotebookLM is its audio summary tool, sometimes called the podcast feature. You upload your course materials, research articles, or notes, and the platform generates a conversational audio overview of the content. Two AI voices discuss the key ideas, highlight important points, and walk through the material in a way that feels surprisingly natural. For students who learn better through listening than reading, this opens up a completely different way to engage with academic content.

Customize Audio Overview

Format

- Deep Dive** ✓
A lively conversation between two hosts, unpacking and connecting topics in your sources
- Brief**
A bite-sized overview to help you grasp the core ideas from your sources quickly
- Critique**
An expert review of your sources, offering constructive feedback to help you improve your material
- Debate**
A thoughtful debate between two hosts, illuminating different perspectives on your sources

Choose language
English

Length
Short | **Default** | Long

What should the AI hosts focus on in this episode?

Things to try

- Focus on a specific source (“only cover the article about Italy”)
- Focus on a specific topic (“just discuss the novel’s main character”)
- Target a specific audience (“explain to someone new to biology”)

Generate

The practical benefits are obvious. Students can listen to these audio summaries while commuting, exercising, walking between classes, or doing household tasks. Time that would otherwise be lost becomes study time. A student with a long bus ride to campus can use that commute to review lecture material or prepare for an upcoming discussion. This flexibility is especially valuable for students juggling work, family responsibilities, or heavy course loads.

What makes this feature even more practical is the level of control it offers. Students aren't stuck with a generic summary. They can guide the focus of the audio by adjusting their prompts or by being selective about which sources they upload. If a student wants the podcast to concentrate on a specific chapter or a particular set of concepts, they can structure their uploads accordingly. This means the audio output stays relevant to what they actually need to learn rather than covering everything at the same surface level.

There's also something cognitively valuable about hearing material presented in a different format. Reading activates one set of processing pathways, and listening activates another. Students who have already read a text might catch new connections or notice different emphases when they hear the same ideas discussed aloud. The audio summary becomes a form of review that doesn't feel repetitive because the mode of engagement has changed. For auditory learners especially, this can be the difference between information that fades quickly and information that actually sticks.

6. Visualize Understanding

Sometimes the best way to develop a nuanced understanding of complex material is to see it laid out visually. A dense reading on economic systems or a theoretical framework with multiple interconnected concepts can remain fuzzy in a student's mind until they encounter a diagram that shows how the pieces fit together. Visual representation does something that linear text often can't: it reveals structure, hierarchy, and relationships at a glance. For many learners, that spatial arrangement is what finally makes an idea click.

NotebookLM's infographics feature addresses this need directly. Students upload their course materials, whether readings, lecture notes, or research articles, and the tool can generate visual representations of the key concepts. These might include flowcharts showing processes, diagrams mapping relationships between ideas, or structured overviews that break down complex arguments into digestible components. The student doesn't need any design skills. The AI handles the visual translation, turning text-heavy content into something the eye can navigate more intuitively.

The platform also offers slides and video overview features that serve a similar purpose. A student preparing for an exam might generate a slide deck that distills a unit's worth of material into a sequential visual format. Each slide becomes a mental anchor, a frame they can recall when trying to retrieve information later. The video overviews add another layer by combining visual elements with narration, which reinforces the material through multiple channels simultaneously. These outputs aren't meant to replace deep reading, but they offer a different entry point into the content.

Customize Infographic

Choose language
English

Choose orientation
 Landscape
 Portrait
 Square

Level of detail
 Concise
 Standard
 Detailed BETA

Describe the infographic you want to create
 Guide the style, color, or focus: "Use a blue color theme and highlight the 3 key stats."

Generate

What makes these tools particularly valuable is how they support the review process. After a student has engaged with the original material, generating a visual summary can reveal whether they truly understood the structure of the argument or just followed along with the words. If the infographic doesn't match their mental model, that mismatch is useful feedback. It signals where their understanding might be incomplete. Visualization becomes both a study aid and a comprehension check, helping students see not just the content but also the shape of their own learning.

7. Source Comparison and Synthesis

One of the most demanding skills in academic work is reading multiple sources on the same topic and figuring out how they relate to each other. Do the authors agree? Do they contradict each other on key points? Are they even asking the same questions, or are they talking past one another? This kind of comparative analysis is essential for literature reviews, research papers, and argumentative essays, but it

requires holding several complex arguments in mind at once. Many students find this overwhelming, especially when the sources are lengthy or use discipline-specific language.

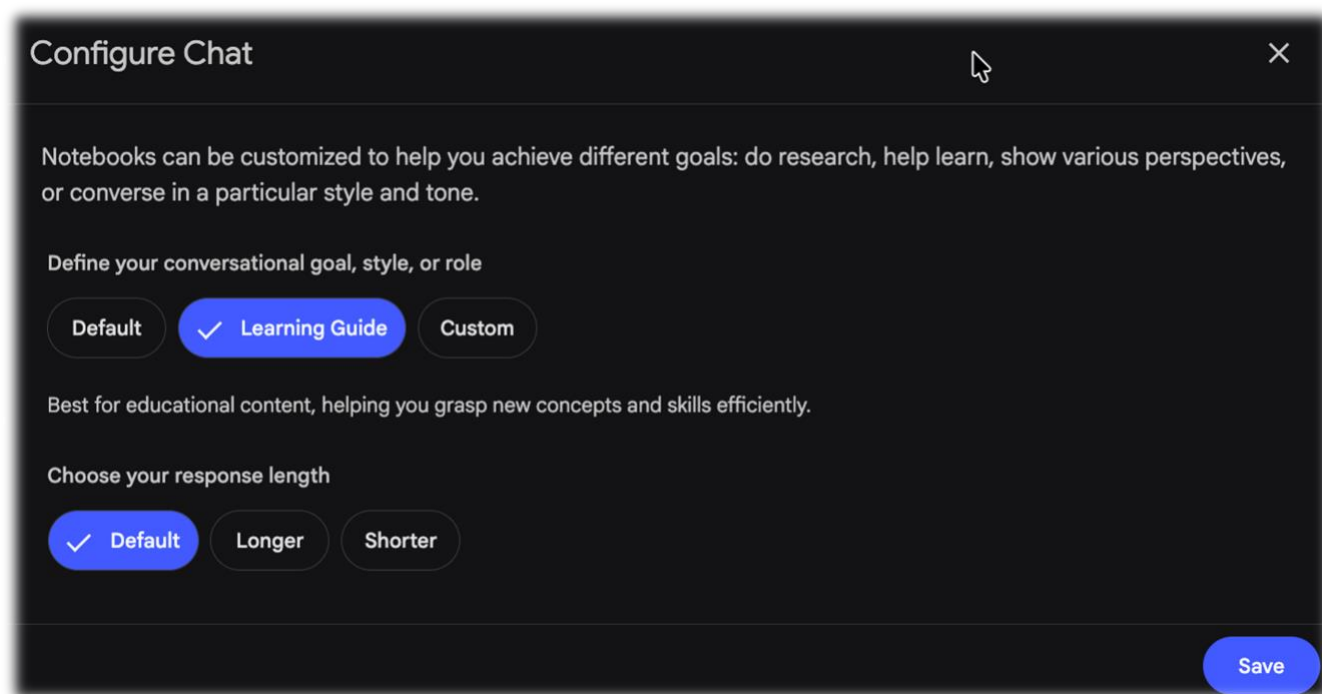
NotebookLM can serve as a useful tool for this kind of work. Students upload several articles or chapters that address a shared topic, then ask the platform to identify where the authors align and where they diverge. The AI can surface points of agreement that might not be obvious on first reading, particularly when different authors use different terminology to describe similar phenomena. It can also flag contradictions or tensions, highlighting moments where one source's conclusions challenge another's assumptions or findings.

This feature is particularly valuable during the early stages of writing a literature review. Students often struggle to move beyond summarizing each source individually. They produce a list of "this author said X, and this author said Y" without ever putting the sources into conversation with each other. NotebookLM can help bridge that gap by modeling what synthesis actually looks like. When a student sees the AI identify a point of tension between two sources, they gain a concrete example of the kind of analytical move they should be making in their own writing.

The tool also helps students locate their own position within a scholarly conversation. Once they can see where the existing sources agree and disagree, they're better equipped to identify where their own argument might fit. Maybe they want to side with one author over another, or perhaps they notice a question that none of the sources adequately addresses. That kind of insight is hard to reach when you're still struggling to keep the individual arguments straight. Having a clear map of the conversation makes it much easier to figure out what you want to contribute to it.

8. Study Guide Generation

Generic study guides have an obvious limitation: they cover what the textbook or curriculum thinks is important, not necessarily what a particular course actually emphasized. Every instructor makes choices about which concepts to spend time on, which examples to highlight, and which debates to explore in depth. A student relying on a pre-made study guide might review material that was barely mentioned in class while skipping over topics their professor spent three lectures unpacking. The mismatch can lead to frustrating exam experiences where students feel prepared but for the wrong things.



NotebookLM allows students to build study guides from their own materials. They upload their class notes, lecture slides, highlighted readings, and any other resources specific to their course. Then they ask the platform to generate a study guide based on that content. The result is a review document shaped by what their instructor actually taught, organized around the concepts and examples that appeared in their specific learning experience. This personalized approach means the study guide reflects the course as it was delivered, not as some abstract curriculum committee imagined it.

The process also reinforces learning in ways that downloading a generic guide never could. When students gather their notes and decide which materials to upload, they're already doing a form of review. They have to think about what they covered, which readings connected to which lectures, and where the major themes emerged. That organizational work is itself a cognitive exercise. By the time NotebookLM generates the study guide, the student has already engaged with the material more actively than if they'd simply pulled a summary off the internet.

Students can also customize the output based on their needs. If they know a particular unit will be heavily tested, they can upload more materials from that section and ask for a more detailed breakdown. If they struggle with certain concepts, they can request explanations or additional practice questions focused on those areas. The study guide becomes a living document that responds to the student's actual gaps. This

kind of targeted review is far more efficient than wading through pages of content that a student already understands perfectly well.

9. Writing Feedback and Argument Testing

One of the trickiest parts of academic writing is knowing whether your argument actually holds together. Students often feel confident about a draft until someone points out that a key claim isn't supported by the evidence, or that they've misread a source, or that two sections of their paper seem to contradict each other. These problems are hard to catch on your own because you already know what you meant to say. Your brain fills in the gaps and smooths over the inconsistencies. Getting outside feedback is essential, but peers aren't always available, and instructor feedback typically arrives after the deadline has passed.

NotebookLM offers a useful workaround. Students can upload their draft alongside the sources they're drawing from, then ask the platform to evaluate whether their argument accurately represents the source material. The AI can check whether a quoted passage actually supports the claim the student is making, whether a paraphrase captures the original author's meaning, or whether the student has overstated or mischaracterized a source's position. This kind of source-checking is tedious to do manually, but it's exactly where many student papers go wrong.

Beyond accuracy, students can also use the tool to test the logic of their reasoning. They might ask NotebookLM to identify gaps in their argument, places where they've made a leap without sufficient support, or moments where their evidence doesn't quite connect to their thesis. The AI can point out where a reader might raise objections or where a counterargument hasn't been addressed. This feedback arrives while the student still has time to revise, which is precisely when it's most valuable. Knowing that your third paragraph has a logical gap is useful information on a Tuesday night, less so on a graded paper returned two weeks later.

This process also helps students develop a stronger sense of what rigorous argumentation looks like. When NotebookLM flags a weakness, students have to figure out how to fix it. Maybe they need to find additional evidence, qualify a claim, or restructure a section entirely. That revision work builds skills that transfer to future writing projects. Over time, students start internalizing the questions the AI raised and

begin asking those questions themselves as they draft. The tool functions as a kind of training ground, helping students become their own best editors by showing them what careful readers notice.

10. Preparing for Discussions or Presentations

Walking into a seminar or standing up for a presentation can be nerve-wracking, especially when students know they might face tough questions. The anxiety often comes not from lack of preparation but from uncertainty about what others might ask. Students can spend hours reviewing their notes and still feel caught off guard when a professor probes a point they hadn't considered or a classmate challenges an assumption they took for granted. The problem isn't knowing the material; it's anticipating how others will engage with it.

NotebookLM can help students rehearse for these moments. After uploading their presentation slides, discussion notes, or the readings assigned for a seminar, students can ask the platform to generate challenging questions based on that content. The AI draws from the uploaded materials to pose the kinds of questions a thoughtful professor or engaged classmate might raise. Besides calming nerves, this rehearsal process pushes students to think through their material from angles they might have overlooked.

The practice also builds a kind of intellectual confidence that shows up in the room. Students who have already wrestled with difficult questions carry themselves differently than those hoping no one asks anything hard. They've heard a version of the tough question before, they've formulated a response, and they've refined their thinking through that process. When the actual moment arrives, they're not scrambling for an answer. They're drawing on preparation that went beyond memorizing content and into genuinely stress-testing their ideas.

Conclusion

If there is one tool I would highly recommend you use with your students, it would be NotebookLM. The platform brings together features that support genuine learning and authentic assessment. Students can summarize and process content, test their own understanding, engage in dialogue with their materials, visualize complex ideas, and prepare for the kinds of academic tasks that actually matter. All of this happens within a grounded environment where the AI works with sources students have selected, which builds habits of verification and critical engagement rather than blind trust in whatever an algorithm produces. The strategies in this guide are starting points, not an exhaustive list. Once you and your students begin exploring NotebookLM, you'll likely discover applications that fit your specific context in ways no guide could anticipate. The key is approaching the tool with intention. Upload materials you've actually engaged with, ask questions that push your thinking, and treat the AI as a thinking partner.

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