



LLM plans a lesson

Description

Google has developed a suite of AI learning tools based on their Gemini conversational LLM platform: • Grasp new topics and deepen your understanding with a conversational learning companion that adapts to your unique curiosity and learning goals. • These are explained at <https://learning.google> and some are available for trial.

We might expect such systems to be tuned to operate much as a learning assistant who not only answers questions and tells you things, but also invites responses from the learner, or perhaps acts as a co-learner, simulates doubt on the part of the tutor and provokes radical and inventive responses from learners, encouraging them to learn from one another. I'm reminded of the famous book *Pedagogy of the Oppressed* by Paulo Freire that championed a liberal orientation to co-learning in the 1970s.

Not all of Google's LLM-based learning aids are currently accessible for trial outside of the USA. In the meantime I have to be content with Google's [NotebookLM](#) to test how AI enhances or diminishes learning opportunities. I explain my own use of the platform in my post [Share your expertise](#), in which I uploaded some of my own publications and saw what NotebookLM made of them. I've since provided more up-to-date drafts and refined the ordering of the files for easier reference. I continue that investigation here.

The publications I uploaded included different approaches to learning and teaching, particularly in relation to design, often contrasting traditional methods with more innovative and radical pedagogies. After some initial prompting on the subject, NotebookLM extracted relevant sections from the publications. I edited down those responses and have placed them in the Notes section at the end of this post. I confess I find the points could be less repetitive and more engaging.

However, the platform returned a response to a different prompt that is much more useful: • Please provide a lesson plan that exploits an LLM to provoke radical learning outcomes in a group context. • Though it is wordy, the response seems to capture the flavour of the source material. I quote the response verbatim here. The numbers in square brackets are hyperlinks to sections in the original sources (but not active in this quote).

Here's a lesson plan that uses an LLM to provoke radical learning outcomes in a group context, drawing on information from the sources and our conversation history:

Lesson Title: *Deconstructing the Familiar: An LLM-Assisted Exploration of Norms*

Learning Objectives:

- To encourage students to **critically examine their own assumptions and biases** [1, 2].
- To understand how LLMs operate as reflections of existing text-based discourse [3].
- To **explore the limitations of LLMs** in representing complex social and cultural contexts [4-6].
- To use LLMs as a tool for generating new perspectives on familiar topics [7, 8].
- To develop **skills in collaborative discussion and critical analysis** [9-11].
- To understand the importance of community and conversation in learning [9, 12].

Target Audience: This lesson plan can be adapted for various educational levels, from higher education to advanced secondary levels.

Materials:

- Access to an LLM (such as ChatGPT).
- A collection of everyday objects or scenarios (e.g., a house, a commute, a shopping trip) [8, 13].
- Whiteboard or large paper for group brainstorming and recording ideas.
- Devices for recording and sharing group discussions [14].

Lesson Activities:

1. Introduction: Setting the Stage for Disruption

- Begin by discussing the concept of "radical pedagogy" and its aim to challenge established norms and encourage critical thinking [1, 2, 15].
- Introduce the idea that LLMs, while powerful, are not neutral tools, but rather reflections of existing textual discourse [3, 5].
- Emphasize that a goal of this lesson is to **expose the limitations of LLMs** and use them to spark new understandings [3, 4, 13].

2. Task 1: Rendering the Familiar Strange

- Divide the students into small groups.
- Provide each group with an everyday object or scenario. The scenarios might be mundane but should also be familiar, for example, "a house," "an office meeting," or "a trip to the supermarket" [8, 13].
- Instruct the groups to **use the LLM to generate a description of their assigned item/scenario**, but with a twist. The twist might be that the LLM generates a description from a different cultural perspective, a non-human point of view, or from a negative perspective [8, 16]. For example, a description of "a house" might be requested from a "squatter's perspective".
- Groups should be prompted to ask the LLM for a description that challenges conventional notions about that scenario [13, 16].
- Have groups share the LLM generated descriptions [14].

- Discuss the results: What aspects of the familiar are rendered strange or unusual? How does the LLM's description differ from their expectations? [13]

3. Task 2: Deconstructing the LLM's Output

- Each group now critically analyses the LLM's output, looking for underlying assumptions, biases, and absences [1, 7, 15].
- Groups should explore:
 - What kind of language does the LLM use and what does this reveal about its training data? [17]
 - What viewpoints or perspectives does the LLM prioritize or ignore? [18, 19]
 - How does the LLM's output â??subvertâ?• or challenge conventional understandings of the scenario? [2, 7, 20]
 - What are the limitations of the LLM in capturing human experiences, emotions, and social contexts [4, 21]?
 - Encourage students to consider how the LLM's output might be used to â??subvertâ?• or challenge the assumptions associated with the original objects or scenarios [2, 7, 20].

4. Task 3: Collaborative Discussion and Reflection

- Groups engage in a collaborative discussion, sharing their findings from the analysis of the LLM's output [9, 12, 22].
- They should compare and contrast the different perspectives generated by the LLM for different groups, and discuss the implications [9, 10].
- Each group then decides on a â??radicalâ?• response to their assigned item or scenario based on their group discussion. This may be presented as a manifesto, a short play, or another creative medium [23].

5. Task 4: Synthesizing New Perspectives

- Groups then share their â??radicalâ?• responses with the whole class.
- Facilitate a whole class discussion that explores the various ways the LLM was used to â??subvertâ?• conventional ways of thinking, and what new insights have been revealed.
- Reflect on the experience: What did they learn about LLMs, and themselves, through this exercise? [16, 24]
- How did the use of the LLM enhance or inhibit their critical thinking, and group discussion?

Radical Pedagogy Principles Applied:

- **Subversion:** The lesson directly challenges conventional views by using the LLM to generate alternative viewpoints and by deconstructing the LLM's output [1, 2, 7, 15].
- **Play:** The task involves playful exploration of language and concepts, and an active engagement with the unexpected [7, 25].
- **Perplexity:** By challenging the familiar, the lesson aims to induce a state of productive confusion, which is seen as a basis for new understanding [1, 13, 24].
- **Dialogue:** The lesson is structured around group discussions and encourages the sharing of different interpretations [9, 22].
- **Deconstruction:** Students are encouraged to â??deconstructâ?• the LLM's output and look for its underlying assumptions [1, 2, 7, 15].

- **Community:** The lesson is designed as a group exercise, emphasizing that learning takes place within a social context [9, 10].

Assessment:

- Assess student engagement in the group activities and discussions.
- Evaluate the critical analysis of the LLM's output.
- Assess the creativity and insight of the "radical" responses from each group.

Expected Outcomes:

- Students will develop a critical understanding of how LLMs operate and reflect existing biases [3, 5].
- Students will be able to identify the limitations of LLMs in representing complex human experiences [4, 21].
- Students will be able to use LLMs as tools for sparking new perspectives and challenging norms [13, 24].
- Students will develop skills in collaborative discussion, critical analysis, and creative expression [9, 10, 22, 26].
- Students will appreciate the role of community, conversation, and critique in learning [9, 12, 22].

By using an LLM to "render the familiar strange", the lesson aims to provoke new understandings, challenge assumptions, and empower students to think critically about their own position in the world [13, 24, 27]. The activities are designed to be open-ended to encourage divergence of viewpoints and creative thinking [28]. This lesson also incorporates key aspects of radical pedagogy, including subversion, play, perplexity, dialogue, and deconstruction [1, 2, 7, 15].

End of AI-generated lesson plan

The lesson here focuses on the learning medium (the LLM). It would be interesting to see how it would conduct a lesson about a disconnected topic (urban inequality, homelessness, public engagement, sustainable landscapes, etc), while using an LLM to assist in learning.

Bibliography

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Notes

The following output is adapted from my prompt to NotebookLM: “The publications outline different approaches to learning and teaching, particularly in relation to design.”

In the book *Designing Information Technology in the Postmodern Age* (1995) I highlighted the contrast between a rationalist, theory-oriented approach to education and a more liberal or pragmatic one. The rationalist approach seeks to capture design expertise in process diagrams and make the design process explicit. In contrast, the pragmatic approach, influenced by thinkers like Dewey, Freire, and Illich, emphasizes enabling students to explore their own insights.

The design methods movement sought to objectify the design process and make it explicit as an aid to collaboration and communication. This movement, however, is now regarded with suspicion. The rationalistic approach to design is also contrasted with the more playful methods advocated in the book *Cornucopia Limited*.

The “analysis, synthesis, and evaluation” model is a recurring target in the books, particularly in *Interpretation in Architecture*. This model provides the basic structure of the Architectural Plan of Work, and was once used in design studios.

In *Interpretation in Architecture* Adrian Snodgrass and I argued that design is fundamentally an interpretive act. Architects interpret contracts, regulations, and site conditions, while also striving to understand the needs of building users. This perspective contrasts with the idea of design as a purely technical or rule-based activity.

In the same book we argued that the interpreter/designer is a subject “played by circumstance and language” and that interpretation is a process of “edification” or education. Interpretation involves establishing distance between the familiar and the strange, which is important in the learning process. As mentioned in *Cornucopia Limited* designers often seek the unfamiliar and enjoy “a sideways look at the world”.

We also described the designer’s involvement in a dialogue with the design situation. The material conditions of the design moment speak back to the designer, declaring possibilities and limitations that are instructive. This reflects the idea of learning through reflection, which is also mentioned in *Tuning of Place* where it is suggested that “the most rigorously articulated plans for design” are after all artefacts “that require interpretation.

Interpretation in Architecture also explored radical, deconstructive pedagogy. We presented this view of education as suggesting that the design brief or program should be treated as texts for deconstruction, integrating reading and rereading into the design strategy. This approach challenges traditional notions of authority and certainty in design education.

Interpretation in Architecture highlights how effective learning involves challenging what students take for granted, establishing distances, and bringing out disparities between

studentsâ?? practices and those of the teacher. The design studio should also teach â??the unfoundational nature of professional practiceâ??. In the blog post at *Reflections on Tech Media Culture blog* the idea is presented that â??a truly radical pedagogy might deliberately place the learner in contradictory and untenable positions in relation to their knowledge baseâ??.

In *Interpretation in Architecture* we describe a studio experiment that required students to explore oppositions inherent in the design of domestic architecture, to bring those oppositions to light, to challenge them, and to engage in two design reversals. This kind of studio-based learning environment encourages experimentation and exploration of ambiguity.

In that book we also highlighted the textual nature of designing by treating the brief as a text for deconstruction, integrating reading and re-reading into the design strategy. The project and the text are seen as dynamic interpretations of each other. This textual approach is also present in the book *Derrida for Architects* where design is described as â??motivated, inspired and propelled through a constellation of rich associationsâ??.

In *Reflections on Tech Media Culture* blog posts I emphasized that all research is practiced, and that the creative output can be an integral part of the research process. This perspective is aligned with the idea that learning is often â??tacitâ? before it is formal or rule based. *Tuning of Place* also highlights this approach by promoting â??not only well designed products, but also those myriad experimentsâ?.

In blog posts I introduced the flipped classroom approach to learning and teaching, where students â??attendâ? the lecture as homework before class, and then use the class time for discussion, activities, and questions. This approach is linked to deconstruction, though also seen as â??innocent and practical.â?

In *Cornucopia Limited* I emphasized the role of metaphor in design, stating that designers see familiarity in strange things, and are excited when they see familiar things in a strange way. The documents suggest that the use of metaphor is a â??great contribution of design to intellectual endeavorâ?. In *Interpretation in Architecture* the concept of â??new metaphorsâ? is used to account for understanding. Metaphor is further explored in *The Tuning of Place* and *Peirce for Architects*.

Several publications express skepticism about purely rule-based design approaches, noting that design knowledge is often tacit and does not conform to rules. Design rules have to be interpreted, and there donâ??t seem to be any rules for how to apply rules. Similarly, design methods can be â??aloof from practical concerns.â?

In *Interpretation in Architecture* we explored the distinction between theory and practice in education and suggested that this distinction should be scrutinized. We suggested that there are aspects of theorisation, in its common academic usage, that are to be resisted. In *Reflections on Tech Media Culture* I include a reference to a chapter on â??The Disintegrated curriculumâ?, which advocates for a â??radical hermeneuticsâ? in professional education.

The publications advocate for a design education that emphasizes practical understanding, reflection, and experimentation. We advocated for revealing the “praxis inhering in the design studio” by encouraging dialogue, group participation, and engagement with the social and environmental impact of design decisions. In blog posts I suggested that a hermeneutics of architecture “draws attention to the practices and processes of architecture”.

Given that design is seen as interpretation, the publications imply that design education should involve teaching students how to critically interpret design problems, contexts, and precedents. This goes beyond simply applying rules or methods and includes the ethical aspects of design.

In *Interpretation in Architecture* we highlighted the challenge of integrating architectural history and the design studio. We suggested that history should not be taught as a mere cataloguing of buildings, but should instead be used to encourage reflection and understanding.

We also suggested that architectural research and training should include study of and research into “different architectures”, while also recognising the challenges and “self-serving hypocrisies” involved in talking about the “other”.

In *Derrida for Architects* the intertextual nature of design is highlighted, as a process of “connecting and disassembling”, thereby suggesting that design education should also involve this intertextual awareness.

In conclusion, the publications outline different approaches to learning and teaching, particularly in relation to design. They emphasize the importance of interpretation, practice, reflection, and the integration of theory and history, often promoting innovative and radical approaches over traditional, rule-based methods. They suggest that effective learning involves embracing ambiguity, challenging conventions, and engaging in a continuous dialogue with the design situation.

- The featured image is by the WordPress generative AI tool response to the prompt: “Classroom in chaos. Aftermath of a riot in a primary schoolroom. No students.”

Category

1. Artificial Intelligence

Tags

1. learning
2. lesson plan
3. radical pedagogy
4. teaching

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