

**BO'LAJAK PEDAGOGLAR UCHUN SUN'IY INTELLEKTGA
ASOSLANGAN MEDIA LABORATORIYASINI LOYIHALASH:
PEDAGOGIK MODEL VA TANQIDIY FIKRLASHNI BAHOLASHNING
ODDIY MEZONLARI**

**ПРОЕКТИРОВАНИЕ МЕДИАЛАБОРАТОРИИ С ИИ ДЛЯ БУДУЩИХ
ПЕДАГОГОВ: ПЕДАГОГИЧЕСКАЯ МОДЕЛЬ И ПРОСТЫЕ КРИТЕРИИ
ОЦЕНКИ КРИТИЧЕСКОГО МЫШЛЕНИЯ**

**DESIGNING AI MEDIALAB FOR FUTURE TEACHERS: A PEDAGOGICAL
MODEL AND SIMPLE CRITERIA FOR ASSESSING CRITICAL THINKING**

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Annotatsiya. Ushbu kontseptual dizayn maqolasida bo'lajak pedagoglar uchun media savodxonlik topshiriqlarini generativ sun'iy intellektdan (SI) ehtiyotkorlik bilan cheklangan tarzda foydalanish bilan birlashtiruvchi o'quv muhiti — AI MediaLab taklif etiladi. Tadqiqotda platforma talabalarga media da'volarni aniqlash, manbalarni tekshirish, argumentlarni solishtirish, zaif mulohazalarni aniqlash va o'z qarorlari yuzasidan mulohaza yuritishga qanday yordam berishi mumkinligi ko'rib chiqiladi. Dizayn tanqidiy fikrlash, media va axborot savodxonligi hamda ta'limda sun'iy intellekt bo'yicha tanlangan nashrlarga asoslanadi. Taklif etilayotgan muhit bir-biri bilan bog'langan yetti modulni o'z ichiga oladi: Tanqidiy Fikrlash Laboratoriyasi, Faktlarni Tekshirish Laboratoriyasi, Media Tahlili Laboratoriyasi, Bahs-munozara Simulyatori, Moslashuvchan Topshiriqlar, Refleksiya Jurnali va Baholash va Tahlil. Olti bosqichli o'quv sikli va beshta baholash mezonini tasvirlangan. Amaliy misollar talabalar nima qilishi va o'qituvchilar nimani baholashi mumkinligini ko'rsatadi. Maqolada, shuningdek, talabalarning ushbu ko'nikmalarni texnologik yordamsiz qo'llay olish-olmasligini tekshirish uchun mustaqil, sun'iy intellektsiz topshiriqlardan foydalanish taklif etiladi. AI MediaLab hali taklif etilgan dizayn bo'lib qolmoqda: platformani amalga oshirish, ishtirokchilar yoki eksperimental natijalar haqida ma'lumot berilmagan. Maqola prototip ishlab chiqish va uning pedagogik ta'limda foydaliligini sinab ko'rish uchun asos taqdim etadi.

Аннотация. В данной концептуальной статье предлагается AI MediaLab — образовательная среда для будущих педагогов, сочетающая задания по медиаграмотности с тщательно ограниченным использованием генеративного искусственного интеллекта (ИИ). В исследовании рассматривается, как

платформа может помочь студентам выявлять медиаутверждения, проверять источники, сравнивать аргументы, распознавать слабую аргументацию и анализировать собственные решения. Дизайн опирается на избранные публикации по критическому мышлению, медиа- и информационной грамотности, а также использованию ИИ в образовании. Предлагаемая среда включает семь взаимосвязанных модулей: «Лаборатория критического мышления», «Лаборатория проверки фактов», «Лаборатория медиаанализа», «Симулятор дебатов», «Адаптивные задания», «Дневник рефлексии» и «Оценка и аналитика». Описаны шестиэтапный учебный цикл и пять критериев оценки. Практические примеры показывают, что могли бы делать студенты и что могли бы оценивать преподаватели. В статье также предлагается использовать самостоятельные задания без ИИ, чтобы проверить, способны ли студенты применять эти навыки без технологической поддержки. AI MediaLab остаётся предлагаемым дизайном: данные о реализации платформы, участниках или экспериментальных результатах не представлены. Статья предлагает основу для разработки прототипа и проверки его полезности в подготовке педагогов.

Absract. This conceptual design article proposes AI MediaLab, a learning environment for future teachers that combines media literacy tasks with carefully limited use of generative artificial intelligence (AI). The study examines how a platform might help students identify media claims, check sources, compare arguments, recognize weak reasoning, and reflect on their decisions. The design draws on selected publications on critical thinking, media and information literacy, and AI in education. The proposed environment includes seven connected modules: Critical Thinking Lab, Fact-Check Lab, Media Analysis Lab, Debate Simulator, Adaptive Tasks, Reflection Journal, and Assessment and Analytics. A six-step learning cycle and five assessment criteria are described. Practical examples show what students would do and what teachers could assess. The article also suggests using independent, AI-free tasks to examine whether students can apply these skills without technological support. AI MediaLab remains a proposed design: no platform implementation, participants, or experimental outcomes are reported. The article offers a basis for developing a prototype and testing its usefulness in teacher education.

Kalit so'zlar: AI MediaLab; pedagog ta'limi; media savodxonlik; tanqidiy fikrlash; generativ sun'iy intellekt; baholash rubrikasi.

Ключевые слова: AI MediaLab; подготовка педагогов; медиаграмотность; критическое мышление; генеративный ИИ; рубрика оценивания.

Keywords: AI MediaLab; teacher education; media literacy; critical thinking; generative AI; assessment rubric.

Introduction. Students encounter information through news websites, social networks, videos, and messaging applications. Some messages provide clear evidence,

while others use emotional language or leave out important context. Future teachers need to recognize these differences. They will also need to help school pupils ask simple but important questions: Who made this message? What is the main claim? What evidence supports it? What information is missing?

Generative AI adds both opportunities and difficulties. It can quickly create sample media texts, suggest different opinions, and ask follow-up questions. At the same time, its answers may sound convincing even when they contain mistakes. A student who copies an AI response may complete an assignment without examining any evidence. For this reason, the educational value of AI depends more on the learning task than on the speed of the tool.

Many digital learning environments show completion rates, time spent, and test scores. These indicators can be useful, but they do not reveal all aspects of critical thinking. A completed activity does not necessarily show whether a student checked the original source, considered a different interpretation, or changed an opinion after reading new evidence. A platform should therefore collect short explanations and records of student decisions, not only correct or incorrect answers.

Critical thinking is commonly linked to interpretation, analysis, evaluation, inference, explanation, and self-regulation (Facione, 1990). UNESCO's media and information literacy curriculum stresses the need to understand and assess information and media messages (UNESCO, 2021). Guidance on generative AI also underlines the importance of human oversight, responsible use, and privacy (Miao & Holmes, 2023). These ideas suggest that students should remain responsible for evaluating information, even when AI supports their learning.

The aim of this article is to develop a clear pedagogical design for a proposed platform named AI MediaLab and to describe simple criteria for assessing critical thinking. Two questions guide the article: (1) Which platform modules could support visible actions of critical thinking in media literacy tasks? (2) How could teachers assess those actions while separating student reasoning from AI assistance?

This study uses a conceptual, design-oriented approach. It does not involve student participants, software testing, or an intervention. Selected academic and institutional sources were used to identify relevant learning actions and design principles. The central sources were Facione (1990) on critical thinking, UNESCO (2021) on media and information literacy, Miao and Holmes (2023) on generative AI in education, Kasneci et al. (2023) on opportunities and risks of large language models, and Wineburg and McGrew (2019) on checking information across websites.

The design proceeded in four stages. First, the literature was read for actions that teachers could observe in student work, such as identifying claims, evaluating sources, weighing reasons, and correcting an earlier answer. Second, each action was linked to a specific media literacy task. Third, the tasks were grouped into proposed platform

modules. Finally, a short rubric and a plan for later evaluation were drafted. The sources were selected for relevance rather than through a systematic review protocol; therefore, this article does not claim to cover all published research.

Three design rules guided this process. A student should produce an initial response before receiving substantial AI assistance. Important factual claims should be checked with sources outside the AI conversation. The final conclusion should be written and justified by the student. AI may offer examples or questions, but it should not become the only judge of the quality of its own output.

AI MediaLab is planned as a set of connected learning spaces rather than as a single chatbot. A student starts with a short media case and writes an initial opinion. Next, the student uses a guided AI exchange or a structured activity, checks information with outside sources, compares possible explanations, and prepares a revised answer. The teacher then reviews the student's evidence and reasoning. Figure 1 summarizes this proposed structure.

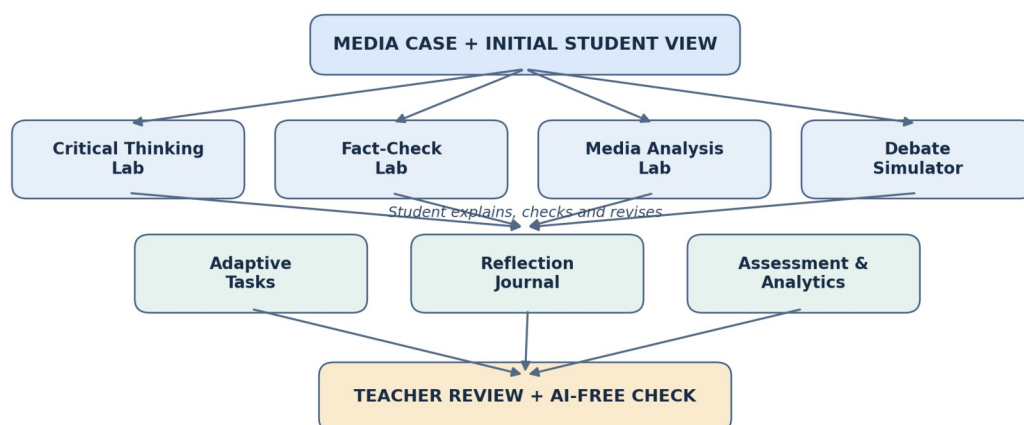


Figure 1. Proposed pedagogical structure of AI MediaLab (author-designed conceptual diagram).

The learning cycle has six steps: reading a media case, writing an initial position, questioning the AI, checking independent evidence, preparing a reasoned final answer, and reflecting on any change. This sequence makes the student's thinking easier to discuss. It also gives the teacher a record of how a conclusion was reached.

Each module has a simple learning purpose. The platform does not need to use AI in every activity. In some cases, a short text and a source-checking form may be more useful than an open-ended conversation with a chatbot.

Table 1. Proposed modules, student activities, and learning evidence.

Module	Example student activity	Evidence for teacher
Critical Thinking Lab	Identify the claim, supporting reasons, and missing information in a short post.	Marked claim and written explanation.

Fact-Check Lab	Open other websites; compare the author, date, original data, and independent reporting.	Source log with links and a short reliability judgment.
Media Analysis Lab	Underline emotional wording, misleading images, or missing context.	Annotated text with cited examples.
Debate Simulator	Respond to an AI-generated counterargument; decide whether it is reasonable.	Comparison of arguments and justified response.
Adaptive Tasks	Complete tasks of different difficulty selected with teacher oversight.	Work samples at each difficulty level.
Reflection Journal	Save a first answer, later answer, and explanation of change.	Short reflection showing what was learned.
Assessment and Analytics	Review rubric feedback and examples across activities.	Criterion-level feedback and a record of revisions.

The Critical Thinking Lab may begin with a single claim about education or digital media. Students separate the message from the evidence offered to support it. In the Fact-Check Lab, students are encouraged to move beyond a page and investigate who is behind the information. This resembles the lateral reading approach discussed by Wineburg and McGrew (2019).

The Media Analysis Lab asks students to notice how messages shape interpretation. A post may use an alarming headline, a cropped image, or a one-sided selection of examples. The Debate Simulator allows students to test their ideas against another view. The goal is not to win an argument but to explain why one position is better supported or why the available evidence is insufficient.

Adaptive Tasks would offer simpler cases to beginners and more complex cases to students who are ready for them. However, automatic difficulty choices should remain visible to the teacher. The Reflection Journal makes revisions part of the assignment, while Assessment and Analytics would summarize learning evidence without presenting an AI-generated score as a final verdict.

Consider the statement: “Students who use AI always achieve higher examination results.” This claim is useful for teaching because the word “always” makes it

unusually strong. At the beginning, students write whether they agree and why. An AI tool may then suggest questions such as: Which students? What kind of examination? Compared with whom? After this exchange, students search for studies or reliable reports and note what these sources actually show.

Students should not be required to reach a single predetermined conclusion. One student might find research on the benefits of guided AI use, while another may focus on differences between subjects and tasks. Both can receive good feedback if they report reliable sources accurately, identify limits, and avoid overgeneralization. The important point is that the final answer belongs to the student.

Table 2. Example of a 45-minute AI MediaLab lesson (proposed, not tested).

Stage / time	Student task	Work saved
Initial view / 5 min	Read a media claim and write an individual first answer.	Initial response.
AI dialogue / 8 min	Ask for alternative explanations and possible counterarguments.	Two useful AI questions and responses.
Source check / 15 min	Search for at least two relevant sources and compare them.	Evidence log with source details.
Reasoned answer / 10 min	Write a supported conclusion that notes limits.	Final response.
Reflection / 7 min	Explain what changed and what is still uncertain.	Reflection note.

Five criteria are proposed: analysis, evidence, logic, evaluation, and reflection. They describe student actions instead of simply counting activity completion. Each criterion is scored from 0 to 3, giving a possible total from 0 to 15. The total is intended only as a simple summary. In teaching practice, comments on individual criteria may be more helpful than the overall score.

Table 3. Draft analytic rubric for critical thinking (0–3 points per criterion).

Criterion	0 - Not shown	1 - Limited	2 - Adequate	3 - Strong
Analysis	No clear claim identified.	Names a claim with little context.	Identifies claim and relevant context.	Separates claim, context, and assumptions clearly.

Evidence	No supporting source.	Source given but not checked.	Uses relevant sources and basic checks.	Compares reliable sources and explains limits.
Logic	Conclusion lacks reasons.	Reasons are weak or unclear.	Conclusion mostly follows reasons.	Reasoning is clear and recognizes gaps.
Evaluation	Ignores other views.	Mentions another view briefly.	Considers a relevant alternative fairly.	Compares alternatives using evidence.
Reflection	No explanation of change.	States an opinion changed.	Explains what evidence affected the view.	Explains revision and remaining uncertainty.

A teacher could score the first independent answer and the final answer separately, but direct score comparison is not always fair if the tasks differ. For later research, students should complete comparable tasks with and without AI. Teachers would also need sample answers showing each score level. Two independent raters could assess the same responses and discuss differences before the rubric is used more widely.

Discussion. The proposed model starts from learning aims rather than technological features. A chatbot is included only where it serves a task: asking questions, proposing a counterargument, or giving students another way to examine a media message. Kasneci et al. (2023) discuss both the educational possibilities of large language models and the need for fact checking and human oversight. AI MediaLab follows this cautious view. An AI response is material to examine, not evidence to accept without checking.

This distinction matters for future teachers. They need experience not only with answering media literacy questions but also with designing such questions for school pupils. After completing a lab activity, students could adapt the same case for a classroom lesson and explain how they would help pupils find trustworthy evidence. In this way, the platform could connect personal media literacy practice to professional teaching preparation.

A student may give a strong answer while using AI because the tool provides useful reasons and wording. That answer alone cannot show how much the student can do independently. For this reason, later studies should include short tasks completed without AI. Such tasks could ask students to evaluate an unfamiliar media post, check

a source, and write a justified conclusion. Independent performance would provide a more direct indication of whether the learning activities support transferable reasoning.

The model also avoids treating platform analytics as proof of learning. High activity counts can show participation, but they cannot replace careful review of written work. A small collection of initial answers, evidence logs, final answers, and reflections would be more informative than a single automated score.

Several practical limits should be considered before developing the prototype. Students may have unequal access to computers or stable internet connections. Teachers may need local-language tasks and examples drawn from familiar media. The platform should provide accessible layouts and allow instructors to review AI-generated material before it is assigned.

Privacy is another concern. Students should work with public, fictional, or anonymized cases and should not enter private details about classmates, pupils, or families into external AI services. Clear classroom rules are needed for documenting when AI was used. The teacher should remain responsible for final assessment decisions, especially where results affect course grades.

This article describes a design proposal. It does not report a functioning AI MediaLab system, student feedback, learning gains, or validated assessment scores. Its source review is selective rather than systematic, and the five criteria have not yet been tested for reliability. These limits should be kept in mind when interpreting the proposed model.

A practical next step would be to build a small prototype containing two or three modules. Teachers and students could first try the activities and report unclear instructions or technical problems. A later pilot could use the full rubric, ask two assessors to score anonymized student responses, and examine agreement between their ratings. With an appropriate comparison group and pre- and post-activities completed without AI, researchers could then investigate whether the platform is associated with improvements in independent critical thinking. No improvement should be assumed before such research is completed.

Conclusion. AI MediaLab is a proposed learning environment that brings media literacy and critical thinking into the same set of classroom activities. Its seven modules ask future teachers to examine claims, verify sources, compare reasons, and reflect on changes in their thinking. A six-step learning cycle and a five-criterion rubric provide a simple starting point for teachers who want to make student reasoning visible.

The main principle is that generative AI can support learning without taking over the student's judgment. Independent evidence checking, written explanation, and AI-free assessment remain important. Future work should develop the platform, review the tasks with teachers, and test the proposed assessment rubric before making claims about effectiveness.

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