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TEACHING METHODOLOGY OF MEDIA LITERACY AND INFORMATION CULTURE IN HIGHER EDUCATION INSTITUTIONS OF NEW UZBEKISTAN

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Annotation: This article explores innovative methodologies for teaching Media Literacy and Information Culture in New Uzbekistan's higher education institutions. Amidst 2026 digital reforms and AI advancements, it proposes an integrative pedagogical framework fostering critical thinking.

Keywords: Media literacy, information culture, higher education, New Uzbekistan, critical thinking, artificial intelligence, pedagogical methodology.

Аннотация: В статье исследуются инновационные методики преподавания медиаграмотности и информационной культуры в вузах Нового Узбекистана. В контексте цифровых реформ 2026 года и развития ИИ предлагается интегративная педагогическая модель формирования критического мышления студентов.

Ключевые слова: Медиаграмотность, информационная культура, высшее образование, Новый Узбекистан, критическое мышление, искусственный интеллект, методика преподавания.

Annotatsiya: Maqolada Yangi O‘zbekiston oliy ta’lim muassasalarida mediasavodxonlik va axborot madaniyati fanini o‘qitishning innovatsion metodikasi tadqiq etilgan. 2026-yilgi raqamli islohotlar va sun’iy intellekt rivoji sharoitida tanqidiy fikrlashni shakllantiruvchi integrativ model taklif qilinadi.

Kalit so‘zlar: Mediasavodxonlik, axborot madaniyati, oliy ta’lim, Yangi O‘zbekiston, tanqidiy fikrlash, sun’iy intellekt, o‘qitish metodikasi.

1. INTRODUCTION

The rapid proliferation of generative artificial intelligence, algorithmic content curation, and synthetic media has fundamentally reshaped the global information ecosystem, elevating Media and Information Literacy (MIL) from an auxiliary communication skill to a foundational pillar of modern higher education. In the context of New Uzbekistan’s comprehensive socio-economic and educational modernization, preparing university graduates to navigate complex digital landscapes with intellectual autonomy, ethical responsibility, and analytical rigor has become a strategic national priority. In 2025–2026, the leadership of the Republic of Uzbekistan enacted landmark legislative and strategic initiatives that directly reinforce the urgency of reforming information and media education. Specifically, the Presidential Decree of October 20, 2025, which approved the

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Program for implementing the Concept for the Development of the Uzbek Language for 2025–2026 and set tasks for bringing the state language into modern information technologies and artificial intelligence, underscores the necessity of equipping students and faculty with advanced digital and algorithmic competencies. Furthermore, Presidential Resolution No. PQ-257 of July 8, 2026, "On Measures to Further Develop the 'Digital Government' System," prioritizes interdepartmental data integration, cybersecurity resilience, and digital transparency across state institutions. Complementing these measures, the updated National Curriculum Framework launched in August 2026 in partnership with Cambridge University Press & Assessment places explicit emphasis on cross-disciplinary digital literacy, practical real-world applications, and critical competency progression.

Simultaneously, these national reforms align closely with major global developments in 2026. During UNESCO's Global Media and Information Literacy Week (October 24–31, 2026), held under the global theme *"We All Play a Part – Media and Information Literacy for the People,"* international scholars and policymakers highlighted the acute threats posed by deepfake technologies, automated disinformation campaigns, and algorithmic echo chambers. Shortly thereafter, on November 10, 2026, UNESCO officially launched its groundbreaking curriculum guide, *"AI Answers. You Decide. – Teaching Media and Information Literacy in AI-Mediated Information Environments,"* which urges higher education institutions worldwide to transition from basic technical tool training toward critical systemic evaluation of AI-generated knowledge, algorithmic bias, and data privacy.

Despite this robust legislative and international momentum, the pedagogical practice of teaching "Media Literacy and Information Culture" in many Higher Education Institutions (HEIs) of New Uzbekistan remains predominantly theoretical, lecture-centric, and fragmented across disciplines. Traditional instructional approaches often treat information culture merely as bibliographic proficiency or basic computer literacy, failing to address the cognitive vulnerabilities induced by generative AI, viral social media narratives, and visual manipulation. Consequently, a significant methodological gap exists between the rapid evolution of the digital media environment and the didactic instruments currently utilized in university classrooms.

The purpose of this study is to design, scientifically substantiate, and empirically validate an innovative, competency-based teaching methodology for the discipline *"Media Literacy and Information Culture"* tailored to the higher education system of New Uzbekistan. To achieve this overarching aim, the research addresses the following specific objectives:

1. To analyze the theoretical foundations and regulatory imperatives shaping media and information education in Uzbekistan and globally in 2026;
2. To diagnose the current level of media literacy, fact-checking proficiency, and AI-critical awareness among undergraduate students;
3. To develop a four-component integrative pedagogical model (*Cognitive-Analytical, Technological-Verification, Axiological-Ethical, and*

Creative-Productive) utilizing interactive case studies, OSINT (Open-Source Intelligence) labs, and AI-audit workshops;

4. To experimentally evaluate the effectiveness of the proposed methodology through pre-test and post-test empirical measurements across experimental and control student cohorts.

2. LITERATURE REVIEW

The conceptual evolution of Media and Information Literacy reflects a paradigm shift from protectionist media censorship toward citizen empowerment and critical autonomy [Buckingham, 2019, p. 42]. Historically, media education emerged in the late twentieth century as a response to mass broadcast television, focusing primarily on deconstructing ideological bias and commercial persuasion [Masterman, 1985, p. 18]. However, the convergence of telecommunications, Web 2.0 participatory platforms, and algorithmic automation necessitated a unified framework integrating library science, information literacy, and media studies [UNESCO, 2021, p. 14].

In Western pedagogical scholarship, Renee Hobbs articulated a foundational five-competency model encompassing *Access, Analyze, Create, Reflect, and Act*, emphasizing that true media literacy requires active dialogic inquiry rather than passive consumption [Hobbs, 2017, p. 29]. Similarly, Potter's cognitive theory of media literacy posits that individuals must possess three building blocks—personal locus, knowledge structures, and analytical skills—to resist automatic emotional processing triggered by sensationalist media algorithms [Potter, 2021, p. 67]. With the emergence of synthetic media and generative LLMs between 2023 and 2026, contemporary researchers have expanded these frameworks to include *algorithmic literacy* and *AI epistemic vigilance* [UNESCO, 2026].

Within the post-Soviet and Central Asian academic space, scholars have approached the phenomenon predominantly through the lens of *Information Culture* (*информационная культура*). Gendina defined information culture as a holistic synthesis of an individual's worldview, informational needs, and algorithmic-analytical skills necessary for independent knowledge construction [Gendina, 2016, p. 54]. In Uzbekistan, foundational studies by Mamatova and Sulaymanova examined the integration of media education into journalism and philology curricula, underscoring the role of national values and ethical responsibility in digital communication [Mamatova & Sulaymanova, 2015, p. 83]. Further contributions by Babajanov and Karimov highlighted the necessity of counteracting cyber-threats and destructive ideological manipulation among Uzbek youth through structured university courses [Babajanov, 2021, p. 41; Karimov, 2023, p. 95].

Nevertheless, a critical synthesis of existing literature reveals three persistent limitations in current Uzbek higher education pedagogy:

- Disciplinary Isolation: Media literacy is frequently confined to journalism or IT faculties, leaving students in engineering, economics, medicine, and teacher training without structured training in epistemic verification.
- Outdated Didactic Tools: Existing textbooks predominantly address traditional print and broadcast propaganda, offering minimal methodological

guidance on detecting AI hallucinations, synthetic voice cloning, or coordinated inauthentic behavior on Telegram and short-form video platforms.

- Lack of Operationalized Assessment: There is a scarcity of validated diagnostic rubrics capable of measuring behavioral changes in students' information hygiene rather than mere memorization of media definitions.

Drawing upon Vygotsky's social constructivism [Vygotsky, 1978, p. 86] and Bloom's revised taxonomy of cognitive domains [Anderson & Krathwohl, 2001, p. 67], this study bridges these gaps by conceptualizing *Media Literacy and Information Culture* as a meta-disciplinary competency. In this framework, students act as active investigators who deconstruct, verify, and ethically co-create digital artifacts within realistic socio-informational simulations.

3. MATERIALS AND METHODS

3.1. Research Design and the Pedagogical Model

To test the efficacy of the proposed instructional methodology, a quasi-experimental, mixed-methods pedagogical study was conducted over two academic semesters during the 2025–2026 academic year. The methodological intervention centered on the implementation of an Integrative Four-Vector Pedagogical Model designed specifically for non-journalism undergraduate programs in Uzbekistan. The structural architecture of this model is illustrated in Figure 1.

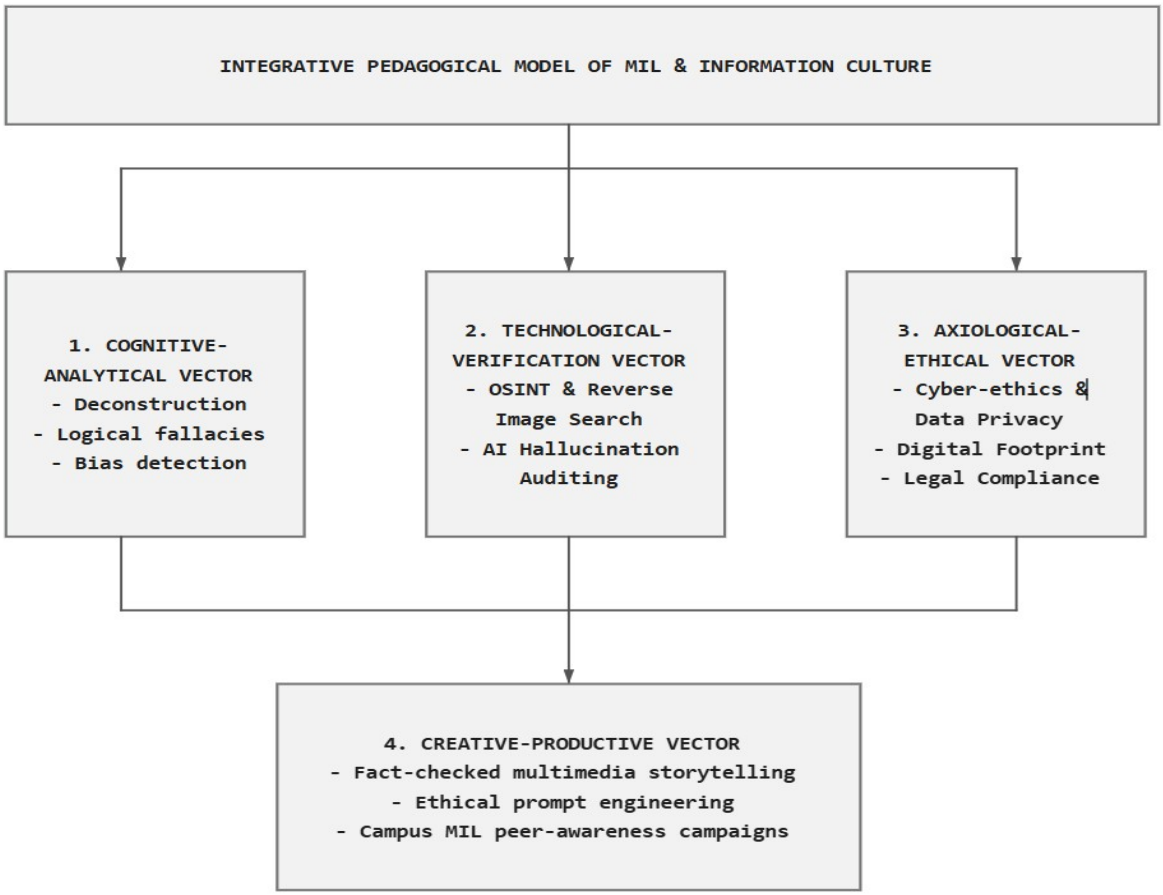


Figure 1. Structural architecture of the Integrative Four-Vector Pedagogical Model for teaching Media Literacy and Information Culture (Source: Developed by the author).

As shown in Figure 1, the methodology integrates four interconnected instructional vectors:

1. Cognitive-Analytical Vector**:** Develops formal logic, recognition of cognitive biases (confirmation bias, availability heuristic), and rhetorical framing analysis.
2. Technological-Verification Vector: Trains students in hands-on digital forensics, including metadata inspection (EXIF), geolocation verification, reverse image/video search, and cross-checking claims generated by Uzbek and English LLMs.
3. Axiological-Ethical Vector: Cultivates adherence to digital law, copyright respect, personal data protection (in line with the Law of the Republic of Uzbekistan "On Personal Data"), and resistance to cyberbullying and hate speech.
4. Creative-Productive Vector: Shifts students from passive consumers to responsible prosumers through project-based learning (PBL), requiring them to produce verified analytical briefs and educational micro-content.

3.2. Participants and Sampling

The empirical investigation involved (N = 320) second-year undergraduate students enrolled across four Higher Education Institutions in Uzbekistan (representing pedagogical, technical, economic, and humanitarian specializations). Participants were divided into two statistically equivalent cohorts:

- **Experimental Group (EG, n = 162):** Instructed using the newly developed Integrative Four-Vector Methodology, incorporating weekly 2-hour interactive "Verification Labs," simulated disinformation crisis games, and AI-audit assignments.
- **Control Group (CG, n = 158):** Instructed via the traditional curriculum, consisting of standard theoretical lectures and conventional seminar discussions based on textbook readings.

3.3. Diagnostic Instruments and Data Analysis

To evaluate baseline competencies (pre-test) and post-intervention outcomes (post-test), a comprehensive 40-item diagnostic instrument—the **Uzbekistan Higher Education Media & Information Literacy Assessment (UHE-MILA)**—was administered. The instrument comprised:

- *Section A (15 items):* Multiple-choice and scenario-based tests assessing theoretical understanding of media ecosystems, algorithms, and information legislation.
- *Section B (15 practical tasks):* Live digital verification challenges requiring students to identify doctored photographs, deepfake audio clips, fabricated statistics, and unverified Telegram forwards within a 45-minute timeframe.
- *Section C (10 items):* A 5-point Likert-scale attitudinal and behavioral inventory measuring digital hygiene habits and ethical awareness.

Based on total percentage scores (0–100%), students' proficiency was categorized into four qualitative levels: *Reproductive-Low* (0–54%), *Adaptive-Basic* (55–70%), *Analytical-Proficient* (71–85%), and *Creative-Critical* (86–100%). Quantitative data were processed using descriptive statistics, paired-samples t-tests, and Pearson's chi-square (χ^2) test to determine the statistical

significance ($p < 0.05$) of learning gains between the Experimental and Control groups.

4. RESULTS

Prior to the pedagogical intervention, both the Experimental Group (EG) and Control Group (CG) demonstrated remarkably similar, predominantly low-to-moderate baseline levels of media literacy and information culture. Quantitative baseline measurements indicated that while 94.3% of surveyed students accessed social media platforms (primarily Telegram, Instagram, and YouTube) for more than three hours daily, fewer than 18% routinely verified the primary sources of viral news items before sharing them.

Table 1 summarizes the comparative distribution of students across the four proficiency levels in both groups at the pre-test and post-test stages.

Table 1. Comparative dynamics of students' Media Literacy and Information Culture proficiency levels before and after the pedagogical experiment (N = 320)

Proficiency Level	Score Range (%)	Control Group (n = 158) Pre-Test (%)	Control Group (n = 158) Post-Test (%)	Experimental Group (n = 162) Pre-Test (%)	Experimental Group (n = 162) Post-Test (%)	Net Gain in EG (%)
Reproductive-Low	0–54%	41.8% (66)	29.1% (46)	42.6% (69)	6.8% (11)	-35.8%
Adaptive-Basic	55–70%	36.7% (58)	41.1% (65)	35.8% (58)	22.2% (36)	-13.6%
Analytical-Proficient	71–85%	15.8% (25)	21.5% (34)	16.0% (26)	45.7% (74)	+29.7%
Creative-Critical	86–100%	5.7% (9)	8.3% (13)	5.6% (9)	25.3% (41)	+19.7%
Total / Mean Score	**100%**	**56.4 ± 11.2%**	**62.1 ± 10.8%**	**55.9 ± 11.5%**	**79.4 ± 9.6%**	**+23.5%**

Source: Author's empirical research data collected during the 2025–2026 academic year.

As evidenced in Table 1, at the pre-test stage, over three-quarters of participants in both cohorts fell into the *Reproductive-Low* (41.8% in CG; 42.6% in EG) and *Adaptive-Basic* (36.7% in CG; 35.8% in EG) tiers, with no statistically significant difference between the groups ($t = 0.39$, $p = 0.694$). Qualitative error analysis of the pre-test practical tasks revealed three primary cognitive vulnerabilities among Uzbek undergraduates:

1. Visual Authority Bias: 76.2% of students accepted manipulated infographics and out-of-context historical photographs as authentic if accompanied by formal-sounding captions or institutional logos.
2. Uncritical Trust in Generative AI**:** 68.5% of respondents failed to detect fabricated academic citations and factual hallucinations generated by AI chatbots when queried on local socio-economic topics.

3. Lateral Reading Deficit**:** Instead of opening new browser tabs to verify an unfamiliar website's credibility (*lateral reading*), 81.0% of students engaged in *vertical reading*, judging trustworthiness solely by the visual design of the webpage itself.

Following two semesters of instruction, post-test measurements revealed a substantial divergence in educational outcomes between the two cohorts (Table 1). In the Control Group, taught through conventional lectures, the mean score increased modestly by 5.7 percentage points (from 56.4% to 62.1%), with 70.2% of students remaining in the lowest two proficiency tiers.

Conversely, the Experimental Group exhibited transformative growth across all diagnostic dimensions. The proportion of students at the *Reproductive-Low* level plummeted by 35.8 percentage points (from 42.6% to 6.8%), while the combined share of students achieving *Analytical-Proficient* and *Creative-Critical* levels surged from 21.6% to 71.0%. An independent-samples t-test confirmed that the post-test mean score of the Experimental Group (79.4 ± 9.6%) was significantly higher than that of the Control Group (62.1 ± 10.8%; $t = 15.12$, $p < 0.001$).

To provide granular insight into which specific instructional methods yielded the highest pedagogical impact, Table 2 disaggregates student performance across the four core competency vectors.

Table 2. Disaggregated competency gains across the four instructional vectors in Experimental vs. Control groups (Mean score on a 100-point scale)

Competency Vector	Key Didactic Method Applied in EG	Control Group Post-Test Mean	Experimental Group Post-Test Mean	Absolute Difference (Delta)	Statistical significance (p-value)
1. Cognitive-Analytical	**Socratic deconstruction & framing matrix**	**64.5**	**81.2**	**+16.7**	**p < 0.001**
2. Technological-Verification	**OSINT forensics & AI hallucination audits**	**53.2**	**82.8**	**+29.6**	**p < 0.001**
3. Axiological-Ethical	**Digital law case-studies & privacy audits**	**68.4**	**78.5**	**+10.1**	**p < 0.01**
4. Creative-Productive	**Fact-checked multimedia PBL projects**	**62.3**	**75.1**	**+12.8**	**p < 0.001**

Source: Author's experimental evaluation metrics (2026).

As demonstrated in Table 2, the most pronounced methodological breakthrough occurred within the Technological-Verification Vector (Delta =

+29.6 points). Hands-on training in OSINT tools, reverse image verification, and systematic auditing of LLM outputs enabled Experimental Group students to transition rapidly from passive intuition to methodical digital forensics. The progression of competency mastery across both groups is visually summarized in Figure 2.

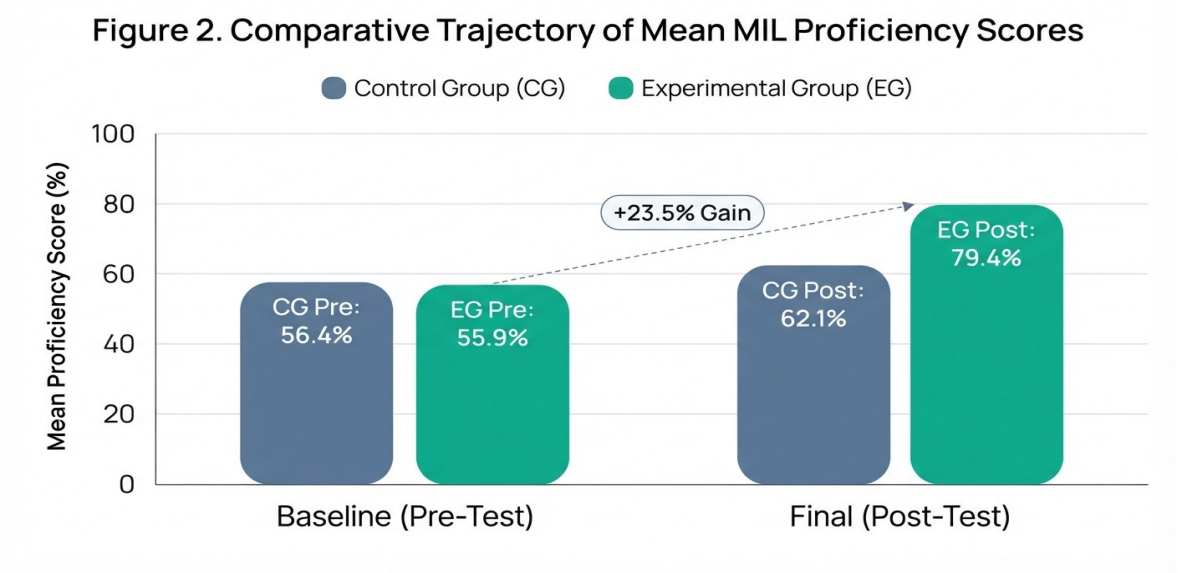


Figure 2. Comparative trajectory of mean MIL proficiency scores between Control and Experimental groups (Source: Constructed by the author based on empirical data).

5. DISCUSSION

The empirical findings of this study provide compelling evidence that traditional, lecture-based approaches to teaching information culture are insufficient for preparing university students for the algorithmic complexities of the mid-2020s. The modest 5.7% gain observed in the Control Group corroborates Wineburg and McGrew's seminal conclusion that abstract theoretical knowledge of media bias does not automatically translate into practical verification habits when students confront realistic online environments [Wineburg & McGrew, 2019, p. 34].

In contrast, the substantial improvement recorded in the Experimental Group (+23.5 percentage points overall, and +29.6 points in verification forensics) validates the effectiveness of active, simulation-based learning grounded in the Integrative Four-Vector Model. By requiring students to actively "break" synthetic narratives—such as auditing AI-generated texts for factual hallucinations or tracing manipulated Telegram posts back to their primary sources—the methodology operationalizes UNESCO's 2026 call to empower learners to *"think critically and decide"* in AI-mediated environments.

Furthermore, the proposed methodological framework directly addresses the strategic state priorities outlined in Uzbekistan's 2025–2026 legislative reforms. Specifically, as the 2025 language policy decree accelerates the integration of the Uzbek language into artificial intelligence technologies and digital platforms, students must be trained to evaluate the linguistic accuracy, cultural appropriateness, and factual reliability of local AI tools. Our experimental

observations revealed that when students conducted structured "AI Audits" on Uzbek-language prompts, they developed a far deeper appreciation for both the utility and the epistemic limitations of generative technology, echoing the national emphasis on quality-driven digital transformation.

Crucially, the results also underscore the necessity of cross-disciplinary scalability. Because our sample encompassed technical, economic, and pedagogical students rather than exclusively journalism majors, the successful outcomes demonstrate that modular "Verification Labs" can be seamlessly embedded into general education curricula across all HEIs in New Uzbekistan. However, qualitative feedback from participating faculty highlighted a key institutional prerequisite: successful implementation requires systematic continuous professional development (CPD) for university instructors, many of whom initially lacked confidence in utilizing OSINT tools and AI-auditing rubrics.

6. CONCLUSION AND RECOMMENDATIONS

1. 6.1. Key Conclusions

2. Strategic Imperative**:** In the era of generative AI and rapid digital transformation, teaching *Media Literacy and Information Culture* in New Uzbekistan's higher education institutions is vital for safeguarding cognitive security, academic integrity, and informed civic participation, directly supporting the 2026 national digital strategy (Resolution PQ-257 and the 2025 language policy decree) and global UNESCO benchmarks.

3. Methodological Efficacy**:** Replacing passive lecture-driven instruction with the Integrative Four-Vector Pedagogical Model (combining Cognitive-Analytical, Technological-Verification, Axiological-Ethical, and Creative-Productive components) produces statistically significant gains ($p < 0.001$) in students' critical thinking, lateral reading, and synthetic media detection skills.

4. Shift to Active Forensics**:** Practical engagement in OSINT verification workshops, AI hallucination audits, and project-based fact-checking campaigns transforms students from vulnerable consumers of viral content into disciplined, ethically responsible digital prosumers.

6.2. Practical Recommendations for Higher Education Institutions

To institutionalize this methodology across the higher education system of New Uzbekistan, the following actionable recommendations are proposed:

- Curriculum Modernization**:** Revise national model syllabi for *"Media Literacy and Information Culture"* to allocate at least 60% of contact hours to practical Verification Labs, case-study simulations, and AI-critical evaluation modules aligned with the 2026 UNESCO MIL-AI framework.
- Faculty Upskilling**:** Establish intensive 36-hour certified professional development workshops for university lecturers across all disciplines on digital forensics, ethical prompt engineering, and Uzbek-language AI evaluation tools.
- Inter-University Digital MIL Labs: Create shared virtual laboratories and open-access repositories of localized Uzbek fact-checking case studies to facilitate peer-to-peer student hackathons and campus-wide information hygiene initiatives.

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