

FROM VIDEO-BASED LEARNING TO CRITICAL ENGAGEMENT WITH AI-GENERATED VIDEO: WHY SYNTHETIC MEDIA REQUIRES A NEW FORM OF EDUCATIONAL LITERACY

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Abstract. In traditional video-based learning models, learners typically play a passive role in knowledge acquisition, relying on explanatory lectures, illustrations, simulations, and the presence of human instructors. The emergence of AI-generated video has brought about significant changes in this landscape. Text-to-video systems, AI avatar platforms, and virtual presenter tools now enable teachers, learners, instructional designers, and educational institutions to create highly realistic, personalized, and multilingual videos that can be deployed at scale. While these advancements offer new opportunities for educational accessibility, content creation, multimodal material development, and flexible learning environments, they also necessitate a fundamental shift in educational literacy. As synthetic video becomes widespread, learners must move beyond passive consumption toward actively integrating, verifying, and ethically engaging with AI-generated video. This article proposes a shift from a conventional video-based learning model to one characterized by critical engagement with AI-generated video. Drawing on emerging literature, the article conceptualizes “Synthetic Media Literacy” (SML) as a core educational competency for AI-generated video-based learning. Its primary theoretical contribution is a five-dimensional competency framework comprising (1) technical recognition, (2) source and algorithmic evaluation, (3) multimodal interpretation, (4) representational examination, and (5) ethical judgment. This competency framework provides an initial theoretical foundation for integrating the skills of critical interpretation, verification, and responsible use of synthetic media into education policy and classroom curricula.

Keywords: AI-generated video; critical engagement; synthetic media literacy; video-based learning; digital literacy; Generative AI in education.

1. Introduction

Video-based learning has become a prominent feature of contemporary education (Min et al., 2023). In online courses, blended learning models, flipped classrooms, Massive Open Online Courses (MOOCs), professional training, and self-study, video is utilized to explain concepts, illustrate processes, demonstrate practices, visualize abstract procedures, and foster learner engagement (Nguyen & Nguyen, 2026). The educational strength of video lies in its combination of speech, imagery, sound, gestures, sequencing, and pacing-elements that written text cannot fully replicate. It can showcase distant locations, slow down complex processes, vividly recreate scenarios, and allow learners to review explanations repeatedly. These characteristics align perfectly with the Cognitive Theory of Multimedia Learning (Mayer, 2014), which emphasizes the value of combining verbal and visual modes of representation to support comprehension (Mayer, 2014). Previous research on instructional video and online learning has also indicated that design factors, such as duration, the instructor's presence, production style, and overall

content organization, can influence learner engagement and experiences (Guo et al., 2014; Kay, 2012; Zhang et al., 2006).

In this familiar model, video is typically viewed as a medium for delivering knowledge to learners. Key design questions have also been clearly identified: How should the video be segmented? What is the appropriate duration? Should the instructor appear on screen? Should interactive elements be included? How can the video foster engagement, retention, and the application of knowledge? However, the rise of AI-generated video introduces a fundamentally different educational challenge. Video is no longer limited to material recorded by teachers, assembled by editors, or animated by designers. It can now be produced from prompts, scripts, PDF files, course descriptions, images, avatars, synthetic voices, and wider multimodal AI workflows (Hanh & Mai, 2026). As a result, an educational video may show a teacher-like figure who was never filmed, a patient case that was never staged, or a historical scene that does not rest on visual evidence.

The rise of AI-generated video demands that education move beyond the narrow understanding of conventional video-based learning and toward critical engagement with AI-generated video. This viewpoint article argues that AI-generated video requires a more focused form of synthetic media literacy. Such literacy extends beyond operational skills while remaining more specialized than general digital literacy. In this article, synthetic media literacy refers to the capacity of learners and teachers to interpret, verify, evaluate, and responsibly create AI-generated audiovisual content for teaching and learning. It includes identifying synthetic media, evaluating sources and tools, judging content accuracy, interpreting multimodal design, recognizing distortions in representation, understanding the limits of AI-generated presence, and using AI video tools responsibly. It does not require learners or teachers to reject AI-generated video. On the contrary, many emerging studies suggest that AI-generated videos can support language learning, patient education, workplace training, science learning, and multimodal composition (Badawy et al., 2025; Li et al., 2025b; Miranda & Vegliante, 2025). The challenge lies in ensuring that learners and teachers engage with these videos critically and responsibly, rather than consuming them passively.

Therefore, the perspective presented here does not aim to oppose the use of AI-generated video or artificial intelligence. Instead, it complements and refines the understanding of traditional video-based learning models, which typically view learners primarily as an audience and videos merely as tools for content delivery. Synthetic media necessitates a more comprehensive educational approach. In the age of AI-generated video, learners need to become careful interpreters, responsible creators, and ethically aware participants in synthetic media culture. In this article, critical engagement with AI-generated video describes a pedagogical orientation in which learners do not merely consume educational videos but learn to interpret, verify, and responsibly engage with AI-generated and synthetic audiovisual media.

2. Conceptual development

2.1. From instructional video to synthetic educational media

Traditional instructional video and AI-generated video share several purposes but they differ in their production conditions, authorship and epistemic status. A conventional instructional video may be recorded in a classroom, studio, laboratory, workplace, or field setting. It may also be scripted, edited, animated, narrated, or illustrated. Such videos are not automatically objective, but their production process is often anchored in identifiable people, institutions, events, or designed animations. By contrast, AI-generated video can be produced through systems that generate scenes, voices, presenters, animations, translations, and visual sequences from prompts or scripts. In this context, the visible content of the video may not correspond to a recorded event or a human presenter.

Emerging literature has highlighted the diverse forms of generative AI video. AI-generated video encompasses formats such as text-to-video, image-to-video, AI-assisted video production, AI-generated avatars, virtual educators, virtual speakers, and deepfakes (Tran et al., 2025, p. 10). While some systems generate entire videos from prompts, others support specific stages of the production process, such as scene generation, synthetic voice synthesis, or avatar-based narration. In educational settings, these tools have been utilized to create videos for course introductions, lectures, language learning materials, medical education, patient communication, workplace training modules, history and cultural heritage education, and multimodal assignments (Chan et al., 2024; Chen & Wu, 2024; Eager, 2025; Miranda & Vegliante, 2025; Tokmakov et al., 2025).

This development expands the possibilities of educational video. AI-generated video can reduce technical barriers (Reddy et al., 2025, p. 417), support lecture delivery (Vallis et al., 2024, p. 537), increase personalization (Adetayo et al., 2024), and enable learners to produce multimodal artifacts without advanced technical skills (Ülgen et al., 2026). For example, Miranda and Vegliante (2025) examined AI-generated virtual speakers for multilingual e-learning and reported positive findings related to learners' engagement and accessibility (p. 1). Badawy et al. (2025) piloted generative AI video for patient communication in radiology and nuclear medicine, using AI avatars to deliver Thai-language patient information (p. 395). Ülgen et al. (2026) compared AI-generated, personalized exercise videos with traditional leaflets for home exercise education. In language education, Li et al. (2025a) investigated how L2 learners used text-to-video tools to transform written texts into video compositions, while Li et al. (2025b) examined EFL learners' semiotic decision-making when using AI for digital multimodal composing.

These studies suggest that AI-generated video should not be treated simply as a new and effective mode of instructional video production. Generative systems can create presenters, voices, settings, events, and explanations that were never recorded in the physical world. Therefore, this article conceptualizes AI-generated video as synthetic educational media. The term "synthetic" highlights that such audiovisual content is constructed through AI models, prompts, source materials, and human decisions. Because synthetic media can appear realistic and persuasive, learners need to examine how these media are produced, what sources support them, and what limitations they may contain. This need provides the basis for critical engagement with AI-generated video.

2.2. Why synthetic media requires a new educational literacy

Educational literacy has expanded repeatedly in response to technological change. Print literacy, visual literacy, media literacy, digital literacy, information literacy, data literacy, and AI literacy all reflect the changing conditions under which people access, interpret, produce, and evaluate knowledge. The proliferation of AI-generated video now creates the need for a *synthetic media literacy* that is specifically attentive to generated audiovisual content. Existing literacies remain important foundations for evaluating online content, sources, and representations. However, synthetic media literacy has a more specific focus. Digital literacy encompasses the effective and responsible use of digital technologies. Media literacy focuses on interpreting, evaluating, and creating media messages. AI literacy addresses how AI systems work, what they can and cannot do, and how they should be used responsibly. Synthetic media literacy draws on all three domains, but focuses specifically on AI-generated audiovisual content. It addresses synthetic realism, uncertain sources, simulated human presence, multimodal distortion, and unclear accountability. Therefore, it should be understood as a focused extension of existing literacies rather than a replacement for them.

This issue has been widely discussed in research on deepfakes and misinformation. Delchev et al. (2024) examined university students' ability to identify AI-generated deepfake videos (p. 473), reflecting concerns regarding learners' inability to accurately recognize video content created using synthetic technologies. Tahir and Batool (2021) investigated students' perceptions and views on deepfakes, highlighting that they are becoming increasingly difficult to detect and

that targeted training can help raise awareness. These studies underscore the need to proactively teach a critical approach to synthetic media. Learners need to understand how videos are generated, the distinctions between deepfakes and conventional editing techniques, and why authentic-seeming audiovisual cues can be misleading.

Synthetic media literacy also requires a critical examination of AI avatars and virtual instructors. While AI avatars can foster a sense of social presence among learners, they may also obscure the ability to evaluate the source, reliability, and institutional accountability behind the content. Research on AI-generated avatars in learning management systems (Tan, 2024), business education (Vallis et al., 2024), workplace training (Lind, 2025), and language instruction (Wang & Zou, 2025) reveals that learners often hold mixed views regarding virtual presenters: they appreciate attributes such as accessibility, clarity, novelty, and convenience, yet simultaneously express concerns about authenticity, emotional connection, and trustworthiness. However, the majority of existing studies focus primarily on learners' immediate perceptions. Further research is needed to determine whether the long-term use of virtual instructors impacts the sense of social presence, emotional connection, trust, and the perceived level of human support.

Synthetic media literacy also encompasses the aspect of student content creation, extending beyond mere reception and interpretation. Learners are not merely viewers of AI-generated videos, they are increasingly becoming active creators of such content. During digital multimodal composition, learners can utilize AI tools to transform text-based narratives, technical proposals, environmental stories, vocabulary content, or cultural materials into videos (Koong Lin et al., 2025; Li et al., 2025a, 2025b; Syarifah et al., 2026; Zhao et al., 2026). While this creative activity offers significant educational potential, it also demands critical thinking. Learners must determine which images accurately reflect their intentions, assess whether the AI-generated video aligns with the source text, evaluate the appropriateness of cultural details, check for potential biases in the AI output, and decide whether the final product requires disclosure regarding AI assistance. Therefore, synthetic media literacy can effectively support learners in digital content creation.

2.3. From traditional video-based learning to critical engagement with AI-generated video

The shift from traditional video-based learning to critical engagement with AI-generated video marks a fundamental transformation in the learner's role. In traditional video-based learning models, learners typically act primarily as viewers, listeners, note-takers, or respondents. However, when interacting with AI-generated videos, learners transform into informed interpreters, verifiers, designers, and ethically conscious participants.

Research in the field of foreign language education offers a compelling case study. Li et al. (2025a) demonstrated that second language learners engage in text-to-video resemiotization when transforming written text into video, a process requiring them to make decisions regarding search keywords, credibility, content scope, relevance, and modes of representation. Li et al. (2025b) found that English as a Foreign Language learners evaluated the consistency between text and video, visual appeal, and audio elements while creating AI-supported digital multimodal content. Synthetic media literacy can guide them in analyzing why a generative AI-created scene is—or is not—aligned with the source text, or why a character might be culturally inappropriate. In such scenarios, they are effectively engaging critically with AI-generated video.

Critical engagement with AI-generated video also applies to historical and cultural representations. Hudaiah et al. (2026) developed AI-generated historical videos of the Sriwijaya Kingdom using verified sources and a historiographical approach, reporting increased student understanding and engagement. Chen and Wu (2024) developed a generative AI framework for creating multimedia teaching materials for Tang poetry and reported benefits related to semantic similarity and cognitive load. Wang (2025) explored generative video technology for Chinese classical literature and women's education. These studies indicate that AI-generated videos can

impart historical and cultural content with a stronger sense of immediacy. However, vivid presentation should not be treated as proof of accuracy or cultural fidelity. Learners need to engage critically to determine whether a video simplifies or distorts cultural meaning and whether AI-generated content perpetuates stereotypes.

Research by Hu and Kurylo (2024) has shown that AI-generated videos can perpetuate stereotypes about Asians within the field of communication education. Therefore, synthetic media content should serve not merely as instructional material but also as a subject for critical reflection by learners. Learners can analyze the biases embedded in AI-generated videos and connect them to broader issues of representation, identity, and culture.

In medical and health education, a critical approach to AI-generated videos requires addressing core issues regarding safety, accuracy, and reliability. Badawy et al. (2025) reported on a pilot study using AI-generated videos for patient communication in diagnostic imaging and nuclear medicine, noting both their utility and issues concerning linguistic nuance and naturalness. Shahrul and Syed Mohamed (2026) evaluated AI-generated videos for orthodontic patient education and found that all were rated poorly, exhibiting significant content deficiencies as well as inappropriate or inaccurate visuals. Similarly, Dağcı et al. (2025) discussed AI-generated videos in nursing, highlighting potential benefits alongside risks related to inaccuracy, bias, procedural issues, clinical standards, and accountability.

Overall, across various contexts, AI-generated videos can offer immense educational value while also posing significant risks. Their realism can foster engagement but may also lead to misplaced trust. Scalability can enhance accessibility but might also undermine human oversight. Therefore, the educational value of AI-generated videos depends not only on technical quality but also on how they are verified, interpreted, and integrated into pedagogical processes.

2.4. Key dimensions of synthetic media literacy for education

This article proposes five key dimensions of synthetic media literacy for education: *technical recognition, source and algorithmic evaluation, multimodal interpretation, representational examination, and ethical judgment*. Technical recognition addresses the challenge of distinguishing synthetic content from recorded reality. Source evaluation examines issues regarding authorship, evidence, and opaque production processes. Multimodal interpretation concerns how images, language, sound, and movement combine to create meaning. Representational examination focuses on the potential for distortion and stereotyping. Ethical judgment addresses issues of consent, privacy, disclosure, fairness, and accountability. Figure 1 illustrates the proposed synthetic media literacy framework.

As illustrated in Figure 1, this competency framework defines synthetic media literacy as a multidimensional ability to engage critically with AI-generated video within educational contexts. The model is based on four common forms of AI-generated video: text-to-video systems, AI avatars and synthetic presenters, deepfakes, and multimodal AI workflows. These technologies create the media environment in which the five dimensions of synthetic media literacy are enacted.

Technical recognition involves understanding that a video may be AI-generated, AI-assisted, synthetic, edited, simulated, or manipulated into a deepfake. Rather than expecting learners to detect synthetic video with the naked eye in every instance, the technical recognition dimension emphasizes that the realistic appearance of visuals and audio is insufficient to confirm authenticity, accuracy, or actual human presence.

Source and algorithmic evaluation involves the ability to determine who or what created a video and whether the source is reliable for educational purposes. For AI-generated videos, this entails examining not only the author, organization, and evidence but also the associated tools, prompts, models, input data, human oversight, and production workflows. For example, studies on AI avatars in business education, online learning, language instruction, and workplace training

indicate that synthetic presenters can support teaching while simultaneously raising concerns regarding authenticity and credibility (Lind, 2025; Tan, 2024; Vallis et al., 2024; Wang & Zou, 2025).



Figure 1. Synthetic media literacy framework for critical engagement with AI-Generated video in education

Multimodal interpretation refers to the ability to examine how meaning is constructed through language, images, sound, movement, pacing, subtitles, and visual style. Research on learners' digital multimodal content creation indicates that AI tools can assist in transforming written text into video; however, the educational value depends largely on the learners' choices regarding coherence, relevance, and visual appeal (Li et al., 2025a, 2025b; Syarifah et al., 2026). Therefore, learners need the ability to interpret how a visual shot reinforces or undermines a message, as well as how movement or music shapes meaning and interpretation.

Representational examination involves assessing whether the video presents knowledge, culture, people, processes, or phenomena accurately and appropriately. This aspect is particularly critical because AI-generated videos can produce vivid and persuasive imagery while simultaneously simplifying, distorting, stereotyping, or fictionalizing the content. In health and medical education, learners must consider whether the generated video accurately depicts mechanisms, procedures, and safety requirements (Dağcı et al., 2025; Shahrul & Syed Mohamed, 2026). In history and cultural education, they need to question whether the representations are corroborated by reliable sources and demonstrate cultural sensitivity. Regarding media literacy, they must examine whether AI-generated products reinforce stereotypes or disseminate misinformation (Hu & Kurylo, 2024).

Ethical judgment refers to the capacity to evaluate whether the use of AI-generated videos respects issues such as consent, privacy, authorship, disclosure, fairness, and accountability. If a teacher uses an AI-generated avatar, must learners be informed? If a student uses AI to create a video for an assignment, how should that AI assistance be disclosed? If a video simulates a real person, whose consent is required? If a video contains elements of cultural representation, who assesses their appropriateness? Thus, ethical judgment helps link the processes of interpreting, producing, and disseminating AI-generated videos with responsible educational practices.

3. Implications for teaching, research, and educational policy

3.1. Implications for teaching and curriculum design

Shifting toward a critical approach to AI-generated video directly impacts classroom instruction. First, rather than using such videos solely for content delivery, educators can prompt learners to critically evaluate their source, purpose, evidence base, representational choices, and design, particularly when these videos make factual, procedural, cultural, or scientific claims. For example, after watching an AI-generated science video, learners might discuss which elements align with established expert knowledge, which have been simplified for clarity, and which require further verification from other sources. After viewing an AI-generated history video, they could compare the visuals against primary or secondary historical evidence. Following a lecture delivered by a virtual avatar, they might reflect on how the character's appearance and voice influenced their perception of the presenter's credibility.

Second, when learners create videos using AI, they should document their prompts, tools, edits, data sources, and human-led decisions. This documentation transforms the AI video production process into a reflective learning activity.

Third, educators need to adopt differentiated approaches to AI-generated videos based on the risk level of the specific context. An AI-generated video intended to spark ideas, tell stories, or provide motivation may require a different level of scrutiny compared to one used for patient education, surgical training, explaining clinical procedures, or demonstrating laboratory safety protocols. In fields demanding high precision and significant impact, content validation must be conducted transparently and led by experts. Therefore, educators and educational institutions should tailor their review processes to align with the associated risks.

Finally, educators should foster a classroom culture where critically examining and questioning AI-generated videos becomes a natural part of the learning process. Learners should be encouraged to explore how these videos are created, the data sources utilized, any content that may have been omitted or simplified, and how to use them responsibly in their studies. Such inquiry and exploration should not be viewed as a sign of distrust in the teacher or the technology, but rather as a responsible approach to engaging with AI-generated educational multimedia content.

3.2. Implications for research and educational policy

The shift from traditional video-based learning to critical engagement with AI-generated videos has profound implications for research. Studies involving AI-generated educational videos must transparently and comprehensively document the production process. Researchers should disclose the tools employed (including specific versions or dates of use), the prompts used, the extent of human editing, verification procedures, and whether participants were informed that the videos were AI-generated. Without these details, it becomes difficult to compare results across studies or to explain why certain videos prove effective or ineffective, credible or unconvincing.

Researchers must also look beyond immediate engagement and perceptions. While learner satisfaction is important, "synthetic media literacy" fundamentally encompasses deeper competencies: assessing credibility, evaluating sources, critically analyzing content presentation,

maintaining ethical awareness, and applying critical thinking skills. A learner might enjoy an AI-generated video yet fail to assess its credibility accurately. Conversely, a learner might be skeptical of an AI-generated avatar while still effectively absorbing the content it conveys.

Educational policy should also acknowledge that synthetic media has already become an integral part of the learning environment. Institutions need clear guidance on disclosure, consent, copyright, privacy, accessibility, bias, and human oversight. Such guidance should require explicit disclosure when educational videos are AI-generated or AI-assisted. Furthermore, the sources used to create the videos and the extent of human review must be documented. Institutions should establish formal procedures to address misinformation, biased representations, copyright concerns, and unclear accountability. Moreover, policies should also avoid two unhelpful extremes: unrestricted use, in which any AI-generated video is accepted merely because it seems useful and blanket prohibition, which can stifle valuable opportunities for experimentation and learning. A more appropriate response is a risk-sensitive and equity-oriented governance framework. Low-stakes creative activities may allow for experimentation, whereas high-stakes instructional applications require more rigorous validation processes and greater transparency.

4. Conclusion

Education should move from a narrow model of video-based learning toward a more reflective model of engagement with AI-generated and synthetic media. The goal of critical engagement with AI-generated video is not to make learners suspicious of all educational media. Rather, it aims to help them become more thoughtful participants in a world where audiovisual media can be generated, altered, and circulated with unprecedented ease. Therefore, synthetic media literacy must become an internal component of contemporary education. It should be systematically integrated into media literacy, digital literacy, AI literacy, teacher education, disciplinary learning, and professional training programs.

Limitations and Directions for Future Research: This conceptual paper has certain limitations that should be acknowledged. First, while the study draws upon emerging literature, it does not employ a systematic literature review methodology. Second, the proposed theoretical framework for synthetic media literacy has not yet been empirically validated; consequently, the five outlined dimensions should be regarded as a preliminary framework. Future research should examine the framework's applicability across diverse educational levels, professional fields, and cultural contexts. Additionally, longitudinal studies are needed to assess its long-term impact on critical thinking, trust in media, social presence, and emotional connection. Furthermore, future research should focus on developing and validating assessment tools for synthetic media literacy, as well as empirically testing instructional interventions designed to strengthen these competencies. As AI video generation technology continues to evolve rapidly, this theoretical framework should be subject to continuous refinement.

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REFERENCES

- Adetayo, A. J., Enamudu, A. I., Lawal, F. M., & Odunewu, A. O. (2024). From text to video with AI: the rise and potential of Sora in education and libraries. *Library Hi Tech News* (ahead-of-print). <https://doi.org/10.1108/LHTN-02-2024-0028>
- Badawy, M. K., Khamwan, K., & Carrion, D. (2025). A pilot study of generative AI video for patient communication in radiology and nuclear medicine. *Health and Technology*, 15(2), 395–404. <https://doi.org/10.1007/s12553-025-00945-z>
- Chan, M. M., Amado-Salvatierra, H. R., Hernandez-Rizzardini, R., & Rosales, M. (2024). Assessing Student Perceptions of Video Quality and Effectiveness From AI-Enhanced Digital Resources. *2024 IEEE Digital Education and MOOCs Conference (DEMOcon)*, 1–5. <https://doi.org/10.1109/DEMOcon63027.2024.10747930>
- Chen, X., & Wu, D. (2024). Automatic Generation of Multimedia Teaching Materials Based on Generative AI: Taking Tang Poetry as an Example. *IEEE Transactions on Learning Technologies*, 17, 1327–1340. <https://doi.org/10.1109/TLT.2024.3378279>
- Dağcı, M., Dost, A., & Çam, F. (2025). Potential Impacts of AI-Generated Videos on Nursing Care. *Nurse Educator*, 50(5). <https://doi.org/10.1097/NNE.0000000000001880>
- Delchev, K., Safieddine, F., & Hammad, R. (2024). Identification of AI generated deep fake video by higher education students. *Science and Information Conference*, 473–489. https://doi.org/10.1007/978-3-031-62281-6_33
- Eager, B. (2025). Meet Zara: An AI-generated teaching assistant for enhancing formative assessment and self-regulated learning. In *Formative Assessment and Feedback in Post-Digital Learning Environments* (pp. 120–126). Routledge. <https://doi.org/10.4324/9781003360254-15>
- Guo, P. J., Kim, J., & Rubin, R. (2014). How video production affects student engagement: An empirical study of MOOC videos. *Proceedings of the First ACM Conference on Learning@Scale Conference*, 41–50.
- Hanh, N. V., & Mai, T. T. D. (2026). AI-Generated Video in Education: A Scoping Review of Technologies, Pedagogical Applications, Benefits, and Challenges. *IEEE Access*, online first.
- Hu, Y., & Kurylo, A. D. (2024). Screaming Out Loud in the Communication Classroom: Asian Stereotypes and the Fallibility of Image Generating Artificial Intelligence (AI). *The Role of Generative AI in the Communication Classroom*, 262–283. <https://doi.org/10.4018/979-8-3693-0831-8.ch012>
- Hudaidah, H., Widiadi, A. N., & Susanti, L. R. R. (2026). AI-Generated Historical Videos of the Sriwijaya Kingdom: An Innovation in History Learning and Cultural Preservation. *Malaysian Journal of History, Politics and Strategic Studies*, 53(1), 56–75. <https://doi.org/10.17576/jebat.2026.5301.04>
- Kay, R. H. (2012). Exploring the use of video podcasts in education: A comprehensive review of the literature. *Computers in Human Behavior*, 28(3), 820–831.
- Koong Lin, H.-C., Lu, R.-S., & Wang, T.-H. (2025). Writing Is Coding for Sustainable Futures: Reimagining Poetic Expression Through Human–AI Dialogues in Environmental Storytelling and Digital Cultural Heritage. *Sustainability*, 17(15), 7020. <https://doi.org/10.3390/su17157020>
- Li, D., Xia, S., & Guo, K. (2025a). Investigating L2 learners' text-to-video resemiotisation in AI-enhanced digital multimodal composing. *Computer Assisted Language Learning*, 1–32. <https://doi.org/10.1080/09588221.2025.2481402>

- Li, D., Xia, S., & Guo, K. (2025b). *Using AI to enhance digital multimodal composing: EFL learners' semiotic decision-making, self-efficacy, enjoyment, and continuance intention*. 29(1), 18. <https://doi.org/10.64152/10125/73636>
- Lind, S. J. (2025). Can AI-powered avatars replace human trainers? An empirical test of synthetic humanlike spokesperson applications. *Journal of Workplace Learning*, 37(1), 19–40. <https://doi.org/10.1108/JWL-04-2024-0075>
- Mayer, R. E. (2014). Introduction to Multimedia Learning. In R. E. Mayer (Ed.), *The Cambridge Handbook of Multimedia Learning* (2nd ed., pp. 1–24). Cambridge University Press. <https://doi.org/10.1017/CBO9781139547369.002>
- Min, Q., Zhou, Z., Li, Z., & Wu, M. (2023). Automatic evaluation of instructional videos based on video features and student watching experience. *IEEE Transactions on Learning Technologies*, 17, 54–62. <https://doi.org/10.1109/TLT.2023.3299359>
- Miranda, S., & Vegliante, R. (2025). Leveraging AI-Generated Virtual Speakers to Enhance Multilingual E-Learning Experiences. *Information*, 16(2), 132. <https://doi.org/10.3390/info16020132>
- Nguyen, D. T., & Nguyen, H. V. (2026). Undergraduate Engineering Students' Engagement in Blended Learning: Insights from the Two-Factor Theory and the Mediating Role of Learning Motivation. *International Journal of Engineering Pedagogy*, 16(1), 44–65. <https://doi.org/10.3991/ijep.v16i1.59379>
- Reddy, B., Rashmi, R. S., Kumari, K., Shyam, K., Rishabh, B., & Kalpana, R. (2025). Integrating AI Photography Tools in Design Courses. *ShodhKosh: Journal of Visual and Performing Arts*, 6(2s), 417–427. <https://doi.org/10.29121/shodhkosh.v6.i2s.2025.6732>
- Shahrul, A. I., & Syed Mohamed, A. M. F. (2026). AI-generated orthodontic patient education videos: Content and quality assessment. *Journal of Orthodontics*, 53(1), 20–33. <https://doi.org/10.1177/14653125251391435>
- Syarifah, E. F., Nurhidayat, E., Septiaji, A., Zahara, N. O., & Salsabila, V. A. (2026). Impact of Artificial Intelligence Integration in Adapting Narrative Essays into Multimodal Videos on EFL Students' Writing Literacy. *International Journal of Learning, Teaching and Educational Research*, 25(2), 196–216. <https://doi.org/10.26803/ijlter.25.2.10>
- Tahir, R., Batool, B., Jamshed, H., Jameel, M., Anwar, M., Ahmed, F., Zaffar, M. A., & Zaffar, M. F. (2021). Seeing is believing: Exploring perceptual differences in deepfake videos. *Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems*, 1–16. <https://doi.org/10.1145/3411764.3445699>
- Tan, S. F. (2024). Perceptions of students on artificial intelligence-generated content avatar utilization in learning management system. *Asian Association of Open Universities Journal*, 19(2), 170–185. <https://doi.org/10.1108/AAOUJ-12-2023-0142>
- Tokmakov, D., Tokmakova, A., Shotarova, S., Lyubomirov, S., Mileva, N., & Tokmakova, K. (2025). AI Educational Video Creation Methodology for University Courses. 2025 *IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE)*, 1–8. <https://doi.org/10.1109/TALE66047.2025.11346699>
- Tran, T. H., Duong, T. T. M., & Nguyen, V. H. (2025). A rapid review of using AI-generated instructional videos in higher education. *Frontiers in Computer Science*, 7, 1721093. <https://doi.org/10.3389/fcomp.2025.1721093>
- Ülgen, N. K., Nazlıgöl, A. S., Yigit, N., Arslan, A. K., & Akkurt, M. O. (2026). AI-Generated Exercise Videos vs Traditional Leaflets: A Novel Approach to Home Exercise Education in Achilles Tendinitis and Plantar Fasciitis: A Randomized Controlled Trial. *Foot & Ankle Orthopaedics*, 11(2), 24730114261436388. <https://doi.org/10.1177/24730114261436388>

- Vallis, C., Wilson, S., Gozman, D., & Buchanan, J. (2024). Student Perceptions of AI-Generated Avatars in Teaching Business Ethics: We Might not be Impressed. *Postdigital Science and Education*, 6(2), 537–555. <https://doi.org/10.1007/s42438-023-00407-7>
- Wang, C., & Zou, B. (2025). D-ID Studio: Empowering language teaching with ai avatars. *TESOL Journal*, 16(2), e70034. <https://doi.org/10.1002/tesj.70034>
- Wang, Y. (2025). Prospects of Generative Video Technology in the Field of Chinese Classical Literature: Exploring Female Education Through the Reimagining of Chinese Poetic Imagery Using Runway ML Gen-3 Alpha. *2025 5th International Conference on Artificial Intelligence and Education (ICAIE)*, 407–411. <https://doi.org/10.1109/ICAIE64856.2025.11158710>
- Zhang, D., Zhou, L., Briggs, R. O., & Nunamaker, J. F. (2006). Instructional video in e-learning: Assessing the impact of interactive video on learning effectiveness. *Information & Management*, 43(1), 15–27. <https://doi.org/10.1016/j.im.2005.01.004>
- Zhao, X., Wang, D., & Liu, G. L. (2026). Innovating Chinese Vocabulary Learning through Multimodal GenAI: The Motivational, Interest, and Attitudinal Shifts among CSL Learners. *The Asia-Pacific Education Researcher*. <https://doi.org/10.1007/s40299-026-01098-x>