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Emerging Patterns in the Use of Video-Based Learning in Open and Distance Education: A Systematic Review of Post-COVID Research (2021–2025)

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Abstract

The post-COVID-19 era has witnessed a profound paradigm shift in teaching and learning mechanisms, characterized by the widespread institutional adoption of online education. Although open and distance learning (ODL) frameworks predated the pandemic, the recent integration of these modalities within conventional education ecosystems has shed new light on their efficacy. Historically, video content has served as a critical pillar of distance education, acting as both a complementary and supplementary tool alongside printed instructional materials. However, structural disruptions in the global educational landscape—coupled with expanding internet penetration among learners—necessitate continuous updates to pedagogical knowledge and delivery systems.

Against this backdrop, this paper presents a systematic literature review evaluating emerging patterns in the application of video-based learning within post-pandemic distance education scholarship. The review synthesizes peer-reviewed research published between 2021 and 2025 focusing on video deployment in ODL environments. The findings indicate that the operational status of instructional videos has transitioned from mere supplementary aids to foundational instruments of modern pedagogy. Post-COVID distance education has leveraged a diversified suite of synchronous and asynchronous modalities, including dedicated video platforms, learning management systems (LMS), micro-lectures, branched interactive videos, and immersive technologies such as Augmented Reality (AR) and Virtual Reality (VR). Furthermore, short, micro-segmented, "bite-sized" video formats have emerged as the preferred medium among contemporary learners. Conversely, the study highlights systemic barriers to implementation, including elevated faculty workloads, technological constraints, and digital accessibility gaps, underscoring the critical role institutional frameworks must play in mitigating these challenges.

Keywords: distance education, video-based learning, post-COVID-19, systematic review.

Introduction

The COVID-19 pandemic disrupted global societies without warning, introducing profound challenges and structural transformations across all sectors of human activity. The rapidly evolving domain of education was not immune to this crisis, experiencing abrupt halts in academic programming, learner

support frameworks, instructional delivery, and conventional learning environments across all educational tiers (Hunter-Johnson et al., 2023).

According to a UNESCO press release issued on March 24, 2020:

"The number of students whose academic activities have been affected by academic institutions' closures in 138 countries has nearly quadrupled to 1.37 billion, representing more than 3 out of 4 children and youth worldwide. In terms of teaching personnel, nearly 60.2 million teachers are no longer in the classrooms" (UNESCO, 2020).

The immediate closure of schools, colleges, and higher education institutions created an urgent mandate to restructure teaching and learning systems to maintain educational continuity. Consequently, the pandemic catalyzed a global surge in e-learning adoption, compelling individuals, academic organizations, and institutional bodies to quickly adapt to a digital landscape heavily reliant on online learning suites. The democratization of open-access videoconferencing tools—such as Zoom, Google Meet, and Microsoft Teams—facilitated student adaptation to online instruction (Kumar & Sharma, 2021).

This rapid migration to online spaces precipitated a corresponding inflation in the educational utilization of video formats. Transitioning from standard web-conferencing software to public video distribution repositories such as YouTube, the deployment of video content migrated from specialized ODL institutes into mainstream academic practice. Although this abrupt structural shift—frequently termed "emergency remote teaching" (ERT)—diverged fundamentally from systematically designed online learning programs, it nonetheless accelerated digital adoption at an unprecedented scale (Hodges et al., 2020). Within this context, ODL paradigms, historically viewed as supplementary, emerged as a dominant mode of instructional delivery across diverse academic disciplines and institutional tiers.

Currently, public media platforms like YouTube function as core educational resources. Bhaskar and Deshmukh (2024) noted that learning-related content on YouTube attracts approximately 500 million views daily. Similarly, commercial edtech entities like PhysicsWallah have secured substantial venture capital investments ($100 million), while prominent science communication channels such as Asap SCIENCE and Veritasium demonstrate the commercial viability and broad reach of digital science education.

Extensive post-pandemic scholarship indicates an escalating learner dependence on video assets alongside traditional textual materials. In a qualitative investigation of distance learners, Ashuni (2024) emphasized that institutions must prioritize the development of high-quality video content, as modern students increasingly rely on these media for conceptual clarification, revision, and academic engagement. Correspondingly, Ranjan et al. (2023) established that contemporary learners demand highly engaging, visually stimulating, and professionally produced video inputs, signalling a permanent evolution in student expectations regarding instructional design.

Yet, while substantial literature investigates specific micro-variables of video-based instruction—including instructor presence, the efficacy of micro-lectures, staff professional development, and platform usability metrics—there remains a distinct gap in literature providing a comprehensive synthesis of the macro-structural emerging patterns of video use within post-COVID open and distance education.

To address this gap, the present study conducts a systematic literature review to identify and analyze emerging trends in video deployment for teaching and learning within ODL environments following the pandemic disruption. By synthesizing academic papers published from 2021 onward, this review examines dynamics relating to platform types, presentation formats, pedagogical frameworks, learner-instructor engagement matrices, and operational challenges. Ultimately, this paper aims to advance institutional

understanding of post-pandemic instructional evolution, offering insights to optimize video-based delivery strategies among educators, learners, and distance education stakeholders.

Purpose and Research Objectives

Following the COVID-19 pandemic, educational ecosystems across all echelons—from early childhood education to advanced higher education institutions—relocated to digital interfaces, relying heavily on online and distance modalities to preserve student-instructor connectivity. While independent research efforts have investigated specific dimensions of video-centric pedagogy, a holistic synthesis evaluating systemic emerging patterns within ODL environments remains absent from current literature.

The primary objective of this systematic literature review is to map and evaluate the emerging patterns characterizing video deployment within open and distance education during the post-pandemic period (2021–2025). Specifically, this study addresses the following research objectives:

1. To identify the primary platforms, modalities, presentation formats, and pedagogical objectives associated with contemporary educational video use.
2. To analyze the characteristics of learner-instructor engagement and interaction mediated by video technologies.
3. To classify the structural, technical, and pedagogical challenges encountered during the implementation of video-based learning systems.

Methodology

This study implements the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework (Page et al., 2021) to ensure rigorous and transparent reporting of findings.

A comprehensive digital search was conducted via Google Scholar targeting scholarly literature published between 2021 and 2025. To automate data retrieval from selected digital databases, advanced search strings were applied across titles, abstracts, and keywords:

- **String 1:** "distance education" OR "ODL" OR "Online Learning"
- **String 2:** "distance education" OR "ODL" OR "Online Learning" AND "post COVID" AND ("video content" OR "Asynchronous Video" OR "Instructional video")

The initial database query yielded 1,700 results. Due to indexing constraints limiting retrieval to the first 100 pages, the operational screening pool was restricted to the top 1,000 items. Stringent filter applications isolated peer-reviewed research articles published exclusively in the English language that were accessible via open-access licenses or institutional university subscriptions, narrowing the dataset to 555 papers.

Subsequent title and abstract screening for thematic relevance resulted in the exclusion of 475 articles. The remaining 80 full-text records were downloaded and subjected to rigorous full-paper assessment against the core study objectives. Ultimately, 20 high-relevance papers fulfilled all thematic criteria and were selected for full analytical synthesis within this review.

Inclusion Criteria

The inclusion criteria (IC) were strictly restricted to empirical and theoretical research articles published between 2021 and 2025 that focused explicitly on the implementation of diverse video formats, the resultant pedagogical shifts within online or blended learning environments, and the systemic challenges arising from the post-pandemic digital transition.

Synthesis of Included Literature

Table 1: Systematic Overview of Selected Post-COVID Scholarly Literature

Sl. No.	Study & Year	Author(s)	Key Analytical Findings
1	The Potential of Videos for Higher Education Institutions (HEIs) in the Post-Covid Era	Gröblinger et al. (2022)	The study highlights that video deployment holds strong potential for teaching and assessment innovations, expanding interactive capabilities, and ensuring educational equity across diverse student groups.
2	The difference a three-minute video makes: Presence(s), satisfaction, and instructor-confidence in post-pandemic online teacher education	Ingram et al. (2024)	The micro-videos do not independently generate learner motivation, they strongly enhance perceived instructor personalization, empathy, and social presence.
3	First-hand user experience: can Kaltura video come to the rescue of Moodle during/post COVID-19?	Govender et al. (2024)	The findins show that Kaltura fulfills 8 out of 10 systemic usability criteria, establishing it as an efficient, low-effort tool for delivering video lectures within Moodle LMS ecosystems.
4	Video lessons for the course introduction to computing through online/offline mode (ICOM): Its development and evaluation	Torion & Bacio (2024)	Validates that dual online/offline video lessons serve as effective instructional materials during crises when physical classroom interactions are legally restricted or unfeasible.
5	Enhancing learner affective engagement: The impact of instructor emotional expressions and vocal charisma in asynchronous video-based online learning	Suen & Hung (2025)	The study identifies that paraverbal cues exert a more profound impact on student affective engagement than static facial expressions; vocal charisma acts as a primary predictor of engagement.
6	VUER: A model for rating videos to curate content for learning	Pandey et al. (2022)	Establishes that learning effectiveness is not determined by distribution platforms, but rather by the intrinsic structural and instructional quality of the video content.
7	Examining online video-based professional development for music teachers	Chua & Tan (2021)	The findings confirms that intentionally designed video-based professional development (PD) architectures serve as powerful mediums for self-determined, collaborative, and reflective learning.

8	Snackable Study: Boosting Micro-learning with Bite-Size Videos	Velamakanni & Saha (2025)	The study demonstrates strong student preference for "bite-sized" video content to maximize retention and engagement; highlights the emerging utility of AI tools in automating lecture segmentation.
9	Supporting students' academic literacies in post-COVID-19 times: Developing digital videos to develop students' critical academic reading practices	Baker et al. (2021)	Concludes that the educational utility of video assets depends on intentional pedagogical integration and scaffolded engagement rather than mere technological exposure.
10	Learning From Online Instructional Videos Considering Video Presentation Modes, Technological Comfort, and Students Characteristics	Perry et al. (2025)	Notes that specific video presentation modes do not significantly shift cognitive outcomes; however, elevated student technological comfort correlates with superior recall metrics.
11	How to Keep Future Doctors Awake: An Inquiry into Online Learning Video Design Preferences Among Medical Students	Mondal et al. (2025)	Documents distinct preferences for English-medium, moderate-length (11–15 mins) videos without background music, alongside written real-time instructor annotations and supplementary text transcripts.
12	Enhancing Graduate Studies with Interactive Videos: Uncovering Student and Instructor Perspectives on Motivation, Self-Efficacy, and Future Intentions	Gedik et al. (2024)	Identifies a marked increase in instructor self-efficacy following specialized video-creation training; advises cautious, validated incorporation of AI utilities in content design.
13	Students' Evaluation of Live Online Lectures Versus Pre-Recorded Video Lectures During COVID-19: Focusing on Students' Study Behavior	Kim & Kim (2024)	Notes student preference for synchronous lectures regarding learning efficiency and peer connectedness; finds that structured, iterative engagement with asynchronous videos yields superior academic outcomes.
14	Comparative evaluation of learning technologies using a randomized controlled trial: Virtual reality, augmented reality, online video platforms, and traditional classroom learning	Wiafe et al. (2025)	Establishes that AR delivers the highest cognitive impact for conceptual understanding; emphasizes that technology-enhanced learning must operate in tandem with physical learning environments.
15	View of Using Videos to Teach Online Courses: Lecture-Recorded	Jones, Chen, & Lytvynenko (2021)	The study observes distinct student preference for non-lecture-recorded videos due to minimized duration and

	Videos VS Non-Lecture-Recorded Videos		fluid content delivery, though standard lectures provide higher perceived social support.
16	Scientific Mapping and Network Analysis of Scholarly Works on Short Videos in Education	Astaño (2025)	Utilizes bibliometric mapping to prove the centrality of short-form videos in driving digital learning innovations, flexibility, accessibility, and student engagement themes.
17	Collaborative Online Learning with VR Video: Roles of Collaborative Tools and Shared Video Control	Jin et al. (2023)	Concludes that collaborative VR frameworks (both synchronous and asynchronous) optimize student learning quality; VR integration stimulates highly active visual learning tracks.
18	Factors Influencing College Students' Learning Intention to Online Teaching Videos During the Pandemic in China	Hao et al. (2024)	The UTAUT model to show that performance expectancy, effort expectancy, social influence, and facilitating conditions positively dictate online video learning intentions.
19	Understanding What Works in Humanizing Higher Education Online Courses: Connecting through Videos, Feedback, Multimodal Assignments, and Social Media	Stewart (2023)	Shows that humanizing elements integrated within asynchronous digital spaces effectively reduce student isolation and cultivate a robust sense of social presence.
20	From Viewers to Participants: The Evolution of Learning Through Interactive Video	Perry-Kates & Cohen (2025)	Demonstrates that branched interactive video design transforms passive student content consumption into active, cognitive, and customizable problem-solving processes.

Findings and Critical Analysis

A systematic analysis of the collected literature reveals that the post-pandemic evolution of video-based instruction is organized around four macro-thematic pillars: the diversification of video formats, structural pedagogical shifts, the integration of advanced immersive technologies, and persistent implementation barriers.

Diverse Video Formats and Platforms

The empirical evidence synthesized in Table 1 demonstrates an exponential expansion in both the production volume and formal complexity of educational video deployment. The baseline mechanics of video distribution have advanced from static lecture captures to multifaceted ecosystems comprising synchronous web-conferencing, asynchronous instructional segments, micro-videos, and branched interactive architectures. However, a key finding across the literature indicates that the absolute efficacy of these modalities is dependent upon the instructional quality of the content rather than the technology of the platform (Pandey et al., 2022).

The volume of video production grew tremendously during the pandemic. Gröblinger et al. (2022) documented that the University of Innsbruck's internal repository saw an influx of approximately 18,000 new instructional videos between March 2020 and September 2021, marking a structural transition where video media evolved from an optional luxury into a core pedagogical mandate.

Concurrently, scholarship highlights that the pedagogical design of these assets determines their cognitive utility. Baker et al. (2021) confirmed that while digital video serves as a premier asset for cultivating academic literacy, its utility relies entirely on deliberate pedagogical integration and intensive faculty training rather than technological adoption alone.

Initial implementations during the crisis faced developmental challenges; Hao et al. (2024) observed that early pandemic instructional videos were utilized primarily as emergency stop-gap measures to substitute for halted face-to-face sessions. Because both students and faculty were forced into this environment without adequate technical infrastructure or training, initial content creation struggled to optimize cognitive engagement. Interestingly, demographic variations were noted, with first-year undergraduate students exhibiting a significantly higher reliance on instructional videos for baseline orientation compared to senior students.

The literature also emphasizes the capacity of video assets to cultivate psychological warmth and interpersonal proximity in distant environments. Ingram et al. (2024) established that the deliberate use of micro-videos projects a sense of personalization and instructor "realness," which helps foster sustainable engagement in online teacher training courses.

This aligns with an escalating learner demand for optimized brevity. Mondal et al. (2025) and Velamakanni & Saha (2025) identified a universal learner preference for micro-segmented, "bite-sized" video content. Short-form videos allow students to access targeted conceptual explanations rapidly, minimizing cognitive overload.

Bibliometric network mapping executed by Astaño (2025) confirms that short-form videos hosted on accessible social media architectures (e.g., TikTok, YouTube Shorts, Facebook Reels) are increasingly integrated into formal education to reinforce targeted practical competencies, including listening comprehension and language articulation.

To challenge the passivity of traditional video consumption, academic institutions are deploying interactive and branched video models. Gedik et al. (2024) noted that interactive video architectures successfully disrupt linear viewing passivity by embedding real-time communication checkpoints within the media layout. For example, integrated formative assessment loops provide immediate feedback, either affirming correct student responses or instantly redirecting the user back to the corresponding review segment.

Perry-Kates and Cohen (2025) demonstrated that branched interactive video structures empower learners to navigate customizable narrative paths, which helps maintain high attention spans and improves active problem-solving behaviors.

Furthermore, the integration of specialized video extensions within standard learning management systems has addressed historical software limitations. Govender et al. (2024) evaluated the institutional integration of the Kaltura video platform within Moodle environments in South Africa, noting that Kaltura successfully resolved Moodle's native deficits in cloud storage, screen capture, and embedded quiz execution.

Regarding discipline-specific deployment, Torion and Bacio (2024) demonstrated that uploading introductory computer science video modules to public repositories like YouTube offers an effective,

cross-institutional instructional model for foundational STEM courses, even when video durations extend to 20–30 minutes.

While asynchronous modalities have expanded significantly—becoming a cornerstone for Massive Open Online Courses (MOOCs) (Suen & Hung, 2025)—their integration presents unique communication dynamics. Suen and Hung (2025) discovered that while the physical visual presence of an instructor on screen yields minimal variance in student cognitive outcomes, the instructor's *paraverbal delivery*—specifically vocal charisma, pitch modulation, and expressions of high-arousal happiness—exerts a powerful influence on student affective engagement.

To help educators curate high-quality media within over-saturated digital spaces, Pandey et al. (2022) formulated and validated the **VUER framework**, which rates assets across four criteria:

- **V**isual Appeal
- **U**nderstanding of Content
- **E**ngagement with the Topic
- **R**ecommendation Preference

Finally, comparative evaluations between synchronous and asynchronous streams show distinct trade-offs. Kim and Kim (2024) established that while synchronous online lectures are prized by students for fostering immediate interpersonal connectivity with peers and instructors, structured and iterative engagement with pre-recorded asynchronous videos yields superior long-term academic performance. This sense of interpersonal connectivity can be enhanced through humanizing course design choices. Stewart (2023) demonstrated that integrating regular introductory videos, personalized multimodal feedback loops, and social media connectivity into asynchronous spaces generates positive student responses and strengthens social presence.

In creative disciplines, Chua and Tan (2021) demonstrated that brief, 5-minute video exemplars deployed for the professional development of music teachers effectively catalyze reflective practice and pedagogical adaptation. Similarly, Jones et al. (2021) observed that students show a clear preference for custom, non-lecture-recorded videos over long lecture captures due to their concise length and fluid narrative pacing.

In STEM fields, Perry et al. (2025) established that instructor visual presence does not fundamentally alter raw knowledge retention. Instead, student learning outcomes are shaped by prior technological comfort and the quality of baseline navigation orientations.

Lastly, studies evaluating cutting-edge media integrations highlight advanced cognitive affordances. Wiafe et al. (2025) executed a randomized controlled trial proving that Augmented Reality (AR) generates superior cognitive impacts regarding conceptual understanding compared to standard online video platforms. Similarly, Jin et al. (2023) demonstrated that collaborative Virtual Reality (VR) environments stimulate highly active visual learning and social support networks, surpassing the capabilities of isolated, basic VR tracks.

Pedagogical Shifts

The systematic consolidation of post-pandemic data points to a fundamental evolution in macro-level pedagogical philosophy. Armed with post-crisis insights, contemporary educators increasingly recognize the unique cognitive affordances of video media for clarifying complex, abstract phenomena through multimodal representation (Gröblinger et al., 2022).

Consequently, instructional paradigms are shifting away from rigid, time-bound, teacher-centered methodologies toward flexible, self-paced, and learner-centered frameworks as shown in Table 2.

Table – 2: Instructional Paradigm Shift

Traditional Pedagogical Model	Post-COVID Video-Mediated Model
Teacher-centered, linear delivery	Learner-centered, self-paced customization
Rigid temporal and spatial constraints	High asynchronous flexibility across geographic borders
Passive ("lean-back") content consumption	Active ("lean-forward") cognitive interaction
Uniform instructional pacing	Differentiated, goal-aligned media design

This pedagogical transition has expanded educational equity and inclusivity. Torion and Bacio (2024) emphasized that digital video assets allow instructors to overcome geographic barriers and offer highly individualized learning experiences that conform to the specific pacing needs of a diverse student body.

Furthermore, video design is becoming more closely aligned with specific discipline goals. As documented by Hao et al. (2024), modern online course design pairs tailored video formats with explicit learning objectives, deploying advanced simulations for engineering cohorts and rich aesthetic media for arts students.

In teacher education, Chua and Tan (2021) observed that engagement with targeted video repositories prompts deep cognitive and belief changes among educators, encouraging them to re-examine long-held instructional assumptions.

Importantly, the literature marks a clear transition from passive content consumption to active cognitive engagement. As Perry-Kates and Cohen (2025) observed, the traditional "lean-back" model of video viewing is being replaced by an active "lean-forward" paradigm. Through the integration of branching paths, embedded self-assessments, and gamified mechanics, students are required to actively plot their own learning trajectories.

This model aligns well with student behavior patterns. Velamakanni and Saha (2025) verified that modern learners exhibit a strong acceptance of short explanatory videos and recorded lectures due to the flexibility they provide for exam preparation. Students also evaluate these assets with a professional lens, analyzing the vocal quality, delivery style, and structural production of the presenter (Gröblinger et al., 2022).

The high utility of these assets is evidenced by student usage metrics. Baker et al. (2021) reported that 99% of students within their research cohort regularly accessed designated instructional videos, with viewing frequency spiking near assessment deadlines.

Ultimately, short-form videos have established themselves as an indispensable element of contemporary educational practice (Astaño, 2025). However, to maximize the benefits of these digital ecosystems, students must practice self-regulated learning behaviors. Kim and Kim (2024) noted that minimizing dual-task distractions, such as unrelated web browsing or social media consumption during video lectures, is essential for protecting student cognitive processing capacity.

Challenges

Despite the clear pedagogical benefits, the rapid transition to video-centric distance education has introduced substantial structural, technical, and psychological challenges.

A primary institutional concern centers on the inflation of faculty workloads. Multiple studies indicate that the design, recording, editing, and deployment of professional-grade instructional videos demands an intense investment of time and labor, creating an urgent need for dedicated methodological and organizational support from institutions (Gröblinger et al., 2022; Jones et al., 2021).

[Systemic Barriers] ──┬──> Technical: Storage, Bandwidth, Platform Incompatibility
├──> Pedagogical: Faculty Workload, Cognitive Overload, Attention Spans
└──> Socio-Psychological: Digital Divide, Camera Shyness, Learning Anxiety

Furthermore, the literature reveals that course completion does not automatically translate to skill mastery. Torion and Bacio (2024) warned that extended video formats (20–30 minutes) frequently trigger cognitive overload and low attention spans among novice learners, while failing to replicate the practical learning outcomes of physical laboratory environments.

This challenge is echoed by Baker et al. (2021), who documented instructor anxiety regarding student attention spans and the difficulties of integrating long video segments within synchronous sessions. Additionally, Astaño (2025) noted that excessive, uncurated reliance on public video platforms can negatively impact overall academic performance.

Technical infrastructures present another major hurdle. Organizations face persistent challenges regarding data storage capacities, bandwidth distribution networks, and cross-platform compatibility for high-definition media (Gröblinger et al., 2022).

These technical limitations can have socio-psychological consequences. The digital divide—characterized by unstable network connections and inequitable device access—can fracture learning continuity, causing learning anxiety and cognitive fatigue among disadvantaged student populations (Hao et al., 2024).

Moreover, current public video repositories present long-term structural constraints. Gedik et al. (2024) raised concerns regarding the sustainability of using commercial networks like YouTube to host complex, interactive educational configurations over extended periods.

Socio-emotional barriers also impede student engagement. Stewart (2023) discovered that even within humanized courses, many students show a distinct reluctance to submit video-based assignments due to acute camera shyness, time constraints, or the absence of a psychologically safe digital space.

These inequities are further compounded by accessibility gaps. Ingram et al. (2024) noted that faculty reluctance to adopt video tools often stems from unresolved digital accessibility issues. As Govender et al. (2024) pointed out, while advanced media plugins like Kaltura optimize LMS utility, they cannot resolve systemic societal inequalities, device scarcity, or language translation deficits.

Additionally, evaluating the true impact of these platforms remains difficult. Suen and Hung (2025) noted that student privacy protections make it challenging for researchers to accurately measure subjective emotional responses to paraverbal cues.

Faculty also face clear operational constraints. Chua and Tan (2021) identified time constraints and cognitive fatigue as major barriers for instructors tasked with evaluating large volumes of student video content, while noting that uneven participation rates often leave a silent majority of learners disengaged.

Finally, methodological and design constraints limit the generalizability of current solutions. Pandey et al. (2022) acknowledged that initial validations of the VUER model were restricted to narrow thematic samples, requiring broader testing across larger datasets.

To address these digital literacy gaps, sophisticated technology investments may be less critical than basic onboarding support. Perry et al. (2025) established that providing clear orientation courses focused on platform navigation and LMS basics is highly effective for reducing entry barriers for new online students.

As institutions look to automate these systems, caution is required. Velamakanni and Saha (2025) advised that while AI-driven video segmentation toolsets can personalize micro-learning without inflating faculty workloads, their real-world instructional efficacy requires extensive validation.

Instructional designers must also ensure that technology deployments align closely with specific cognitive goals rather than using technology for its own sake (Wiafe et al., 2025).

For instance, branched interactive videos require substantial budgets, specialized software, and intensive labour to construct, and poorly designed nodes can trigger student fatigue and hinder reading comprehension (Perry-Kates & Cohen, 2025).

Lastly, Jin et al. (2023) demonstrated that immersive environments like VR struggle to balance individual learning paces with group collaboration requirements; asynchronous VR configurations can isolate the learner, while synchronous VR setups risk rushing users and causing cognitive frustration.

Implications for Policy and Practice

The structural disruption caused by the COVID-19 pandemic fundamentally reshaped the global educational ecosystem, permanently accelerating a digital transition that was previously occurring at a gradual pace. While this systematic review initially sought to focus exclusively on traditional open and distance learning frameworks, the collected literature demonstrates a convergence between conventional and distance modalities. Because the pandemic forced historically brick-and-mortar institutions to adopt online delivery systems, this study synthesized research across the broader domain of technology-mediated distance education.

By analyzing post-pandemic scholarship, this review demonstrates that video media has transitioned from a simple supplementary tool into a core pedagogical foundation. Contemporary distance education now operates within a rich ecosystem of synchronous and asynchronous channels, pre-recorded lectures, micro-learning assets, interactive modules, branched paths, and immersive AR/VR integrations. A key insight for policymakers is that the educational value of these media is not determined by the platform itself, but by how intentionally the video content is designed, contextualized, and embedded within the overarching curriculum.

Consequently, institutional policies must prioritize content quality, instructional design, and thoughtful pedagogical integration over simple technological acquisition. Micro-lectures have emerged as a highly effective format for matching the shorter attention spans typical of modern, screen-saturated learning environments. Furthermore, because an instructor's vocal charisma and paraverbal delivery strongly influence student affective engagement, institutions should empower faculty to grow not just as technical users of these tools, but as skilled, creative digital content creators. Sustainable implementation requires robust professional development initiatives that build both the digital literacy and pedagogical competencies of teaching staff.

For students, video-centered learning offers valuable flexibility, accessibility, and targeted support for exam preparation and conceptual review. The ability to pause, rewind, and re-watch media supports self-regulated learning and helps reduce academic anxiety in complex subjects. To optimize these assets, institutions should establish formal feedback loops that allow student user experiences to directly inform ongoing video development.

However, addressing the challenges of video production requires comprehensive institutional interventions. Faculty workloads, time constraints, and technical infrastructure limits present real barriers to long-term sustainability. Systemic challenges regarding data storage, platform compatibility, and the digital divide must be addressed through clear policy actions. Educational leaders and policymakers must view video-based learning as a permanent, structural pillar of modern distance education rather than a

temporary crisis response. This requires long-term investments in digital accessibility, including universal captioning, multi-language translations, and inclusive design frameworks.

Finally, this review highlights critical paths for future research. While current literature offers valuable insights into immediate post-pandemic trends, there is a clear need for longitudinal studies that track the long-term impacts of video-based learning on student cognitive outcomes, educational equity, and institutional transformation. Continued comparative research across diverse disciplines, geographic regions, and demographic student populations will further enrich our understanding of how to optimize video-based instruction for diverse educational contexts.

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