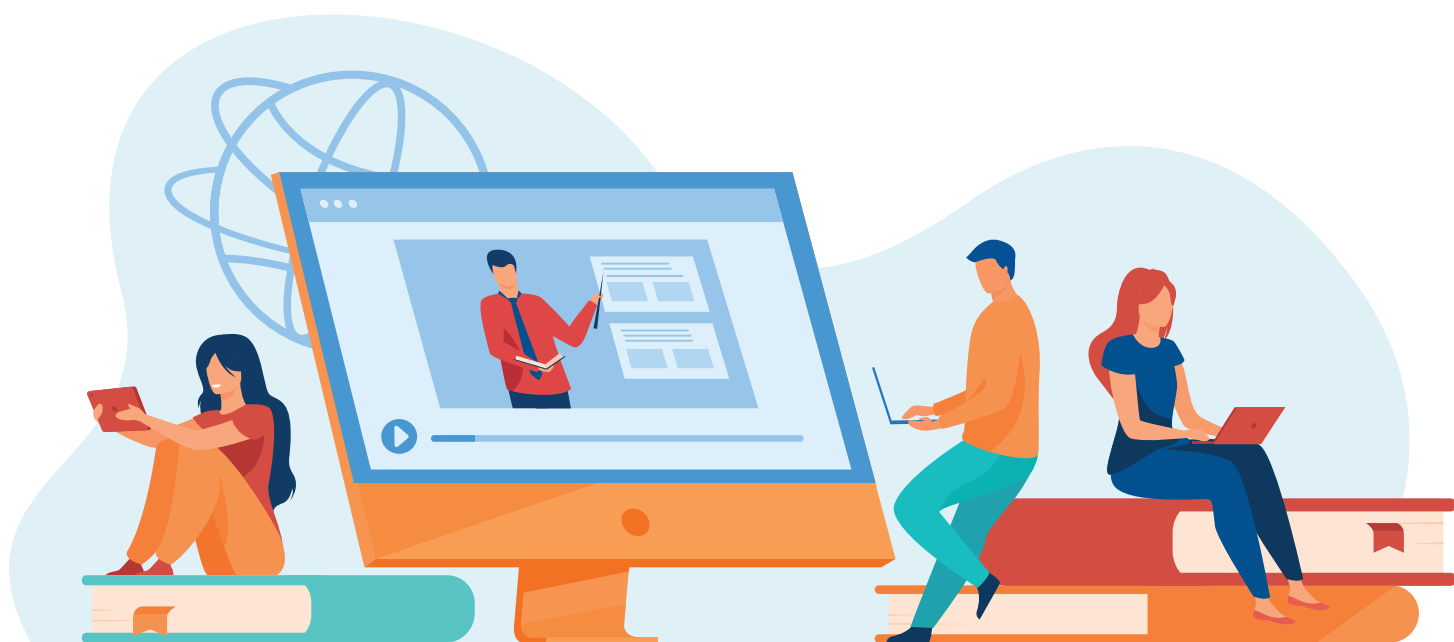


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Editoriale

GIANNA CAPPELLO, MARIA RANIERI

Questo numero include 7 contributi scientifici che spaziano dall'educazione ai media per l'infanzia, alle memorie coloniali sulle piattaforme digitali, fino all'analisi critica dei videogiochi in prospettiva queer e all'intelligenza artificiale, oltre a una buona pratica.

Il contributo di Andrea Nardi – *When Stories Go Digital: Designing Children's Reading for Pleasure in Digital Storybooks* – propone una revisione critica della letteratura recente sulle dimensioni pedagogiche, cognitive e di usabilità dei libri digitali per l'infanzia, con l'obiettivo di individuare criteri basati sull'evidenza per una progettazione narrativa coerente e coinvolgente. Fondandosi sulla teoria del carico cognitivo e sull'apprendimento multimediale, il contributo esamina come la personalizzazione, l'interattività e la multimedialità possano essere calibrate per sostenere la comprensione, la motivazione e il coinvolgimento narrativo, preservando al contempo il flusso immersivo della lettura. La rassegna mette in luce come le scelte progettuali plasmino l'esperienza di lettura per piacere dei bambini e le più ampie esperienze di alfabetizzazione, e ne discute il potenziale educativo, considerando i libri digitali come spazi narrativi che favoriscono l'autorialità e l'agency narrativa. Il contributo si chiude offrendo orientamenti pedagogicamente fondati per educatori, insegnanti e genitori nella selezione e nell'uso dei libri digitali in modalità adeguate allo sviluppo.

Il lavoro di Micol Meghnagi e Camilla Folena – *Who Gets to Teach the Past? Colonial Narratives, Pedagogical Authority, and Platformized Vernacular Memories* – esamina le modalità con cui il colonialismo italiano viene narrato nei formati brevi su TikTok, sostenendo che tali narrazioni intervengono nella memoria pubblica e nella formazione identitaria. Situando il caso italiano nel più ampio progetto imperiale europeo e nelle sue ricadute contemporanee, l'articolo collega il discorso sulle piattaforme a traiettorie più lunghe di ricordo selettivo e alla marginalizzazione del colonialismo nella trasmissione

educativa. Sul piano metodologico, lo studio si avvale di un'analisi qualitativa del contenuto di quaranta video TikTok per ricostruire i repertori interpretativi attraverso cui il nesso tra colonialismo e scuola diventa enunciabile nei pubblici digitali quotidiani. Emergono due tendenze: una corrente critica che mette in discussione i silenzi curriculari e la sanitizzazione della violenza coloniale nell'insegnamento scolastico, e una lotta simbolica in atto attorno ai confini culturali e storici dell'identità italiana. L'articolo argomenta che le piattaforme di contenuti brevi operano come arene di disputa mnemonica in cui l'autorità storica, l'identità nazionale e la legittimità educativa vengono negoziate in tempo reale.

Lo studio di Giulia Fiorentini, Daniela Paoletti, Benedetta Ragni, Martina Maiolatesi e Simona De Stasio – *Lettura dialogica e lettura digitale nei servizi 0-6: conoscenze, disposizioni e percezioni degli educatori e degli insegnanti della scuola dell'infanzia* – affronta il tema della lettura dialogica nei servizi educativi per la prima infanzia, indagando come la diffusione dei dispositivi digitali abbia introdotto nuove forme di lettura dialogica mediata dalla tecnologia. Lo studio esplorativo, condotto con 36 educatori e insegnanti attraverso un approccio misto, analizza l'uso della lettura dialogica, le percezioni dei suoi effetti sullo sviluppo del bambino, nonché le rappresentazioni e le competenze legate all'impiego di albi illustrati digitali nei contesti educativi per la prima infanzia. I risultati indicano un uso frequente della lettura dialogica e una valutazione generalmente positiva dei suoi effetti. Maggiori competenze digitali e atteggiamenti professionali più positivi si associano a una maggiore disponibilità a integrare le tecnologie digitali in modo educativo e inclusivo. L'analisi qualitativa evidenzia posizioni ambivalenti, con benefici percepiti e timori legati all'esposizione precoce. Nel complesso, la lettura dialogica digitale emerge come una risorsa potenziale, purché sostenuta da intenzionalità pedagogica e da una formazione mirata.

Il contributo di Marika Mascitti, Salvatore Messina e Alessandro Soriani – *Oltre la rappresentazione: la griglia Q.U.A.K.E. per l'analisi queer-intersezionale dei videogiochi* – propone uno strumento ermeneutico e pedagogico per l'analisi critica dei videogiochi nei percorsi educativi, collocando i game studies in una prospettiva queer, transfemminista e intersezionale. A partire dai dati sulla crescente diversificazione delle comunità di giocatori e delle strutture industriali, lo studio riconosce tanto l'aumento della visibilità delle identità marginalizzate quanto la persistenza di disuguaglianze strutturali nella rappresentazione e nella produzione dei media. Integrando contributi della Critical Media Education con il framework della Queer Media Education, l'articolo riformula la game literacy come competenza politica, etica e affettiva, capace non solo di comprendere le meccaniche e le narrazioni di gioco, ma anche di interrogare criticamente in che modo i videogiochi contribuiscano alla costruzione di identità e alla distribuzione del potere. A tal fine, viene elaborata una griglia analitica articolata nelle dimensioni Q.U.A.K.E. (*Queer, Underground/Unlearning, Affective, Knowledge, Emancipatory*), concepita per fornire a educatori e ricercatori uno strumento per interrogare i modi in cui i videogiochi incarnano o sfidano logiche egemoniche, ponendo cura, giustizia e comunità come valori fondanti del design e della cittadinanza digitale trasformativa.

Il lavoro di Elena Sgobba e Antonia Francesca Scardigno – *Spectatorship, Bodies and Digital Hate: Observing Online Hate Speech and Its Implications for Media Education* – indaga l'hate speech online spostando il fuoco analitico dai perpetratori e dalle vittime alla figura dello spettatore digitale, inteso come posizione critica ma spesso passiva nelle interazioni mediate dalle piattaforme. Lo studio, che si avvale di un approccio misto – un'indagine valutativa somministrata a utenti italiani dei social media e la Nominal Group Technique con un panel di esperti – rivela un'elevata esposizione all'hate speech, una diffusa non-intervenzionalità e la presenza di meccanismi di disimpegno morale, tra cui la diffusione di responsabilità e la disumanizzazione della vittima. Il contributo situa queste dinamiche in un quadro di media education orientato alla responsabilità, alla consapevolezza emotiva e alla cittadinanza digitale attiva, sostenendo la necessità di superare approcci meramente protettivi a favore di competenze critiche, etiche e partecipative capaci di contrastare la normalizzazione del discorso d'odio negli spazi pubblici digitali.

Lo studio di Maria Ranieri, Gabriele Biagini, Stefano Cuomo e Joséphine Christmann – *Enhancing AI Literacy in Education: A Multi-Country Pre-Post Quasi-Experimental Evaluation Study* – esamina l'efficacia di inter-

venti formativi mirati per lo sviluppo dell'AI literacy tra educatori di Romania, Francia e Finlandia, nell'ambito del progetto europeo TADAM (Tools & Awareness about Disinformation, Algorithms & Media). Attraverso un disegno quasi-sperimentale pre-post con gruppi indipendenti, lo studio valuta la preparazione percepita degli educatori su quattro dimensioni: promozione dell'AI literacy, sviluppo della conoscenza locale, facilitazione della formazione e networking tra stakeholder. I dati, raccolti prima e dopo la partecipazione a 12 workshop nei tre contesti nazionali, mostrano che i partecipanti valutati dopo i workshop riportano livelli di preparazione significativamente più elevati, con effetti di entità medio-grande e grande in tutte le dimensioni esaminate. I risultati suggeriscono che modelli formativi basati sulle competenze, centrati sull'apprendimento attivo, sulla co-progettazione e sull'adattamento contestuale, possono essere associati a un sostanziale miglioramento della preparazione percepita degli insegnanti in ambiti tecnologici emergenti.

Il contributo di Davide Bennato – *Synthetic Lovers: A Framework for Understanding Artificial Intimacy* – esplora il panorama in rapida evoluzione dell'intimità artificiale attraverso il framework "Synthetic Lovers", un modello sociologico tripartito che articola le nozioni di intimità digitale, sintetica e virtuale. Analizzando casi contemporanei – dal coinvolgimento emotivo con i modelli linguistici di grandi dimensioni ai matrimoni con personas dell'IA – il contributo sostiene che queste relazioni non sono mere anomalie tecnologiche, ma sintomi di una più ampia trasformazione nell'organizzazione sociale dell'intimità. Il framework integra pilastri teorici quali l'interazione parasociale, la teoria antropologica dell'animismo e l'economia politica della piattaforma. Vengono esaminati meccanismi culturali chiave – tra cui il "male gaze", l'"effetto Eliza" e il "Proteus effect" – per comprendere come desiderio e soggettività vengano rimediati negli ambienti digitali. Sul piano educativo, il contributo sottolinea come le forme di intimità artificiale pongano sfide inedite alla media education: dalla necessità di sviluppare competenze critiche per riconoscere le logiche commerciali e di design che strutturano le interazioni affettive con IA, alla formazione di una consapevolezza emotiva capace di distinguere il supporto relazionale autentico dalla simulazione algoritmica.

La buona pratica presentata da Stefania Badiglio e Luciano Seta – *Generative AI in the Classroom: A TPACK-Based Instructional Pathway in Behavioral Economics* – descrive un percorso didattico sperimentale, sviluppato nell'ambito di un'attività di formazione scuola-lavoro (FSL, ex PCTO) su economia comportamentale e intelligenza artificiale generativa, rivolto a studenti

degli ultimi anni delle scuole secondarie di secondo grado. Fondandosi sul framework TPACK, il contributo esamina le specifiche affordance delle GenAI – in particolare l’interfaccia linguistica e la tendenza all’antropomorfizzazione – per argomentare la necessità di ripensare i compiti tradizionalmente assegnati in ambito scolastico, spostando il focus verso attività di interpretazione, argomentazione e riflessione critica. Attraverso giochi economici classici – il gioco dell’ultimatum, il trust game e il gioco dei beni pubblici – gli studenti sono guidati a confrontare il proprio comportamento con quello delle GenAI, riflettendo sui bias umani e artificiali e sui limiti della razionalità di entrambi. Lo strumento tecnologico diventa così oggetto di indagine critica, integrando in modo intenzionale “GenAI in Education” e “GenAI literacy” in un’esperienza formativa coerente e trasferibile.



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When stories go digital: Designing children's reading for pleasure in digital storybooks

Quando le storie diventano digitali: progettare la lettura per piacere dei bambini nei libri narrativi digitali

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Abstract. This critical literature review examines recent research on the pedagogical, cognitive, and usability dimensions of digital storybooks, with the aim of identifying evidence-based criteria for coherent and engaging narrative design. Drawing on cognitive load and multimedia learning theories, it analyses how personalisation, interactivity, and multimedia features can support comprehension, motivation, and narrative engagement while preserving narrative flow. The review highlights how design choices shape children's reading for pleasure and broader literacy experiences, and discusses the educational potential of digital books as narrative spaces that foster authorship and narrative agency. The article concludes by offering pedagogically informed guidance for teachers and parents on selecting and using digital storybooks in age-appropriate ways.

Keywords: e-storybooks, reading for pleasure, narrative experience, design.

Riassunto. Questo articolo presenta una revisione critica della letteratura recente sulle dimensioni pedagogiche, cognitive e di usabilità dei libri narrativi digitali, con l'obiettivo di individuare criteri fondati su evidenze empiriche per un design narrativo coerente e coinvolgente. Facendo riferimento alla teoria del carico cognitivo e alla teoria dell'apprendimento multimediale, il contributo analizza come personalizzazione, interattività e funzionalità multimediali possano sostenere comprensione, motivazione e coinvolgimento narrativo, preservando il flusso della narrazione. La rassegna mette in luce come le scelte di design influenzino la lettura per piacere e le più ampie esperienze di alfabetizzazione dei bambini, e discute il potenziale educativo dei libri digitali come spazi narrativi capaci di favorire autorialità e agentività narrativa. L'articolo si conclude offrendo indicazioni pedagogicamente fondate per insegnanti e genitori sulla scelta e l'uso dei libri narrativi digitali in forme adeguate all'età.

Parole chiave: libri narrativi digitali, lettura per piacere, esperienza narrativa, design.

INTRODUCTION

Recent international surveys highlight a marked decline in reading for pleasure among children and adolescents (Cremin & Scholes, 2024). In the United Kingdom, the National Literacy Trust reported in 2024, through its Annual Literacy Survey, «by far the lowest level of reading enjoyment» (Clark et al., 2024, p. 2) since monitoring began in 2005, describing the findings as «shocking and dispiriting» (p. 29). The 2025 survey confirmed this trend, expressing particular concern about the rapid decline in reading enjoyment among younger children, given that early positive experiences form the foundation for lifelong reading habits (Clark et al., 2025).

At the same time, a substantial body of research shows that growing up in families rich in book-related cultural stimuli is associated with higher educational outcomes, with effects extending into adulthood (Georgiou & Inoue, 2025). Children exposed early to reading-supportive environments tend to show advantages in language development, reading skills, and motivation (Hayes et al., 2025). Parents' reading habits (Loh & Sun, 2020), access to books in the home (Sikora et al., 2019), and shared reading practices (Noble et al., 2019) are among the strongest predictors of literacy development and sustained interest in reading. Access to books is also associated with more frequent reading and more positive attitudes toward reading (Clark & Poulton, 2011), while parental modelling of reading enjoyment plays a key role in shaping children's motivation (Cremin & McGeown, 2025; OECD, 2021). However, many children still lack early access to high-quality picture books (Cole et al., 2022), and changes in family routines have reduced shared reading practices (Stangeland et al., 2024).

Within this context, digital books are frequently identified as a promising resource for mitigating educational disparities, as they can reduce children's reliance on parental mediation and literacy-related support (Bus et al., 2025; Xu et al., 2022). This potential is particularly salient for children from low-literacy or socioeconomically disadvantaged backgrounds, for whom digital formats may enable meaningful reading experiences even when adult support is limited (Egert et al., 2022; López-Escribano et al., 2021; Liu, 2024). E-books have also been shown to motivate reluctant readers and children with reading difficulties, including in independent reading contexts (Kucirkova et al., 2023; Xu et al., 2022). When well designed and equipped with appropriate scaffolding features, e-books and talking e-books can support reading engagement and early literacy development by enabling autonomous access to narrative content (Dore et al., 2018).

Alongside print books, families now have access to a wide range of digital formats, from e-books and narrative apps to transmedia storytelling, immersive experiences, and AI-mediated compositions, which are reshaping both story forms and the reader's role within the reading experience (Mascia et al., 2026). Early reading experiences increasingly take place through educational apps and e-storybooks (Müller-Brauers et al., 2020; Sari et al., 2019), supported by the growing availability of children's content on mobile devices (Bus et al., 2020). Over the past two decades, these resources have evolved from simple digital replicas of print books into complex multimedia environments combining narration, animation, interactivity, adaptive feedback, and augmented reality (Müller-Brauers et al., 2020; Wang, 2022). Their diffusion has raised expectations regarding their potential to support both reading for pleasure and learning, making digital stories a central topic in educational research (Kucirkova & Kümmerling-Meibauer, 2021; Wu & Amzah, 2023).

Meta-analyses and systematic reviews indicate that e-books grounded in cognitive principles can foster emergent literacy, vocabulary, and comprehension (Bus et al., 2025; Chuang & Jamiat, 2023; Furenes et al., 2021; Liu, 2024; López-Escribano et al., 2021; Savva et al., 2022). However, findings remain mixed: while some digital books enhance motivation and comprehension, others fragment narrative flow or encourage superficial interaction (Bus et al., 2020; Kucirkova, 2017b). Parents similarly express ambivalent attitudes, acknowledging the motivational potential of e-books while voicing concerns about content quality, distraction, and screen exposure, and often preferring print books for shared reading practices (Kucirkova & Flewitt, 2022; Strouse & Ganea, 2017).

Despite their potential, many commercial digital books continue to exhibit shortcomings in content and design. International studies report pedagogical weaknesses (Sari et al., 2019; Meyer et al., 2021) and limited narrative scaffolding comparable to skilled adult support (Furenes et al., 2021). The diversity of digital formats further complicates evaluation and makes it difficult for educators and parents to identify high-quality products (Bus et al., 2020). Standardized design guidelines remain scarce (Çirakoğlu et al., 2022), as do robust evaluative frameworks (Kucirkova, 2017a), while scholars increasingly stress the need for user-centred approaches that actively involve children in the design process (Sylla et al., 2022).

Although research on children's digital books has expanded into a multidisciplinary and methodologically diverse field (Kim & Hassinger-Das, 2019; Kucirkova, 2019), evidence on children's actual reading experiences

with digital narratives remains limited, and empirical studies examining how multimodality and interactivity shape narrative comprehension are still relatively scarce (Schwabe et al., 2022). As a result, much remains unknown about how children experience digital literature and how this medium may contribute to, or even enhance, the pleasures of reading (Kucirkova & Kümmerling-Meibauer, 2021). Against this backdrop, the present article examines how digital narrative books influence children's literary experience. Its aims are twofold: first, to investigate the impact of narrative e-books on story comprehension, attention, engagement, and adult-child interaction; and second, to outline evidence-based principles to inform the design of effective digital narrative books.

1. THEORETICAL FRAMEWORK

1.1 *Design principles for digital storybooks*

The design of engaging, immersive, and meaningful narrative experiences can draw on several theoretical frameworks that, although not developed specifically for digital storybooks, offer principles and design criteria highly relevant to this context. These include Cognitive Load Theory (Sweller et al., 2019), Dual Coding Theory (Paivio, 1986), Cognitive Theory of Multimedia Learning (Mayer, 2022; 2024), and the Cognitive-Affective Theory of Learning with Media (Moreno & Mayer, 2007). An expanding body of research draws on these perspectives to inform the design of effective e-books and digital narrative experiences (Altun, 2024; Bali et al., 2025; Li & Bus, 2023; Liang et al., 2025).

Cognitive Load Theory (CLT) provides a foundational account of how learning is constrained by the limited capacity of working memory, the cognitive system responsible for the temporary maintenance and manipulation of information required to perform a task (Baddeley et al., 2021). Learning effectiveness depends on both the amount and the nature of the cognitive load imposed on the learner: when demands exceed available resources, overload occurs, undermining efficient processing (Sweller et al., 2019; Sweller, 2020). Narrative comprehension relies heavily on working memory, as readers must continuously construct and update a coherent mental representation by linking information, generating inferences, and integrating new content with prior knowledge (van den Broek & Kendeou, 2022). When reading tasks impose excessive cognitive load – particularly extraneous load caused by suboptimal design – comprehension efficiency declines, leading to weaker narrative understanding and poorer integration of information (Brüggemann et al., 2023; Paas & van Merriënboer, 2020).

Because working memory capacity is limited, effective narrative design must focus on reducing unnecessary cognitive demands. Minimising extraneous load allows cognitive resources to be devoted to essential processing and integration with long-term memory. This underscores the importance of avoiding superfluous design elements – such as redundant graphics, disorganised layouts, or unintuitive navigation – that distract attention and impair comprehension. Conversely, well-designed digital storybooks can reduce extraneous load and support more efficient processing (Bali et al., 2025; Li et al., 2023). In electronic books, multimedia and interactive features may increase working memory demands, while in print the absence of supportive cues may require greater adult mediation. In both cases, learning effectiveness depends on the overall cognitive load imposed by the format and the text, particularly given children's limited attentional capacity (Kim & Hassinger-Das, 2019; Richter & Courage, 2017).

While CLT explains why cognitive overload occurs, Dual Coding Theory (DCT) clarifies how information can be processed more efficiently. DCT posits two interconnected processing systems: a verbal system for language and sounds, and a nonverbal system for visual information such as images and animations (Paivio, 1986). Distributing information across these channels can reduce pressure on any single system and support more efficient working memory use. Applied to digital stories, this perspective suggests that coherent integration of verbal and visual information facilitates narrative comprehension. Empirical evidence shows that children understand stories more effectively when text and images are meaningfully coordinated (Verhallen & Bus, 2011). Both print and digital formats can support dual coding; however, in e-books this potential is amplified – or undermined – by the quality and relevance of multimedia features (Kim & Hassinger-Das, 2019).

Building on these premises, the Cognitive Theory of Multimedia Learning (CTML) explains how words and images can be combined to foster meaningful learning in multimedia environments (Mayer, 2021). CTML rests on three core assumptions: dual processing channels, limited working memory capacity, and active cognitive processing. Learning is most effective when learners actively select relevant information, organise it into coherent mental representations, and integrate it with prior knowledge (Mayer, 2024). Research in multimedia learning has identified design principles aimed at reducing extraneous cognitive load and preserving resources for processing intrinsic complexity (Fiorella & Mayer, 2022). Applied to digital books, these principles suggest that multimedia elements are beneficial only when inten-

tionally integrated, carefully calibrated, and narratively coherent. Learning outcomes are generally enhanced when information presented across modalities is overlapping or complementary – for example, when written words are paired with congruent images or spoken narration is supported by text. However, these benefits may also entail cognitive costs. Dividing attention across multiple information sources can generate attentional competition, particularly when information is conveyed through the same sensory modality, potentially undermining comprehension (Liao et al., 2024; Sweller et al., 2019). Consistently, studies on digital book reading show that multimedia enhancements support comprehension only when they are purposefully designed and narratively aligned, whereas superfluous features tend to hinder understanding (Furenes et al., 2021).

Finally, the Cognitive-Affective Theory of Learning with Media (CATLM) extends CTML by incorporating emotional, motivational, and metacognitive dimensions of learning (Moreno & Mayer, 2007). Motivation and affect influence how learners allocate attention and cognitive resources, shaping selection, organisation, and integration processes. Well-designed multimedia environments can foster interest and engagement, helping to offset cognitive demands and support learning-relevant effort. From this perspective, e-books enriched with engaging yet carefully designed multimedia features may sustain children's motivation to read and support deeper engagement with narrative content (Li et al., 2023).

Taken together, these theories provide a coherent framework for designing digital narrative experiences in which multimedia elements support comprehension and engagement without overloading working memory (Fiorella & Mayer, 2022; see Table 1)¹.

1.2 The importance of reading for pleasure

Over the past fifteen years, the work of Teresa Cremin and the Open University research group in the United Kingdom has profoundly influenced educational discourse and practice around reading, foregrounding the central role of reading for pleasure (RfP). Their research has contributed to a reconceptualisation of

reading not merely as a curricular requirement, but as a meaningful, self-directed, and socially situated practice (Cremin & McGeown, 2025).

The concept of reading for pleasure is closely related to reading enjoyment and is described in the literature through a range of partially overlapping terms, including recreational reading, leisure reading, volitional reading, free voluntary reading, independent self-selected reading, and voluntary reading. Despite this terminological diversity, these expressions converge on a shared core meaning: reading undertaken by choice rather than obligation. Reading for pleasure is commonly defined as «reading that we do of our own free will, anticipating the satisfaction that we will get from the act of reading» (Clark & Rumbold, 2006, p. 6), emphasising the intrinsic motivation and enjoyment that characterise this activity.

A substantial body of evidence documents the positive effects of reading for pleasure across both short- and long-term outcomes. In the short term, it is associated with improvements in reading comprehension, vocabulary development, empathy, social skills, and wellbeing; in the long term, it supports the development of confident, skilled readers and contributes to overall academic success (Cremin & Scholes, 2024). Research consistently demonstrates a clear relationship between reading enjoyment, reading motivation, reading frequency, and reading achievement (Hamedi et al., 2020; Hebbeker et al., 2019; Lindorff et al., 2023; Toste et al., 2020; Torppa et al., 2020): children who enjoy reading tend to read more often and in greater volume, which strengthens comprehension skills and, in turn, further enhances reading enjoyment. Over time, sustained engagement with texts also leads readers to encounter increasingly complex material, reinforcing literacy development in a cumulative manner (Toste et al., 2020).

Reading for pleasure also plays a mediating role with respect to gender and socio-economic disparities: high levels of interest and motivation can attenuate the gender gap – where girls typically report higher engagement – and reduce differences between students who are able to cultivate reading practices at home and those from less advantaged backgrounds (OECD, 2021). Indeed, reading enjoyment has been shown to be a stronger predictor of academic success than socio-economic background alone (Clark & Rumbold, 2006).

Notably, research highlights the specific and particularly strong role of narrative reading within this association between reading practices and young people's educational outcomes (Jerrim & Moss, 2019). This may be due to the fact that reading narrative texts typically requires sustained time and perseverance, involves deep cognitive and emotional engagement, and places

¹ Alongside these theoretical frameworks, the Universal Design for Learning (UDL) provides an approach aimed at making narrative experiences more inclusive and accessible by addressing the variability in learners' abilities, cultural backgrounds, experiences, and languages. E-books designed according to UDL facilitate access to narrative content and increase students' motivation and enjoyment. For children with specific educational needs, features such as self-paced reading, content repetition, immediate narrator feedback, dialogic prompts, and motivational scaffolds can support attention and engagement.

Table 1. Adapting the fifteen multimedia learning principles to children's digital storybook design (from Mayer, 2021).

N.	Principle	Description	Adaptation to the e-storybook context
1	Multimedia principle	People learn better from words and pictures than from words alone.	Integrate written text, illustrations, and audio narration to support narrative comprehension and vocabulary development.
2	Coherence principle	People learn better when extraneous material is excluded rather than included.	Exclude decorative animations, sounds, or interactive elements that do not contribute to narrative meaning or comprehension.
3	Signaling principle	People learn better when cues are added that highlight the organization of essential material.	Use subtle visual or auditory cues to guide attention toward key characters, events, or linguistically relevant elements.
4	Redundancy principle	People do not learn better when printed text is added to graphics and narration.	Avoid verbatim duplication of written text and audio narration, except when redundancy serves explicit literacy-support functions.
5	Spatial contiguity principle	People learn better when corresponding words and pictures are presented near rather than far from each other.	Place written text in close proximity to the illustrated elements it refers to.
6	Temporal contiguity principle	People learn better when corresponding words and pictures are presented simultaneously rather than successively.	Synchronize audio narration with the appearance of relevant images or animations.
7	Segmenting principle	People learn better when content is presented in user-paced segments rather than as a continuous unit.	Structure the story into short, user-controlled scenes or pages.
8	Pre-training principle	People learn better when they know the names and characteristics of key concepts in advance.	Introduce characters, settings, or key vocabulary before the narrative unfolds.
9	Modality principle	People learn better from graphics and narration than from graphics and on-screen text.	Favor oral narration combined with images over dense on-screen text, especially for emergent readers.
10	Personalization principle	People learn better when words are presented in a conversational rather than formal style.	Use a warm, engaging, and age-appropriate narrative voice.
11	Voice principle	People learn better when narration is spoken in a friendly human voice rather than a machine voice.	Employ expressive, natural human voices suited to children.
12	Image principle	People do not necessarily learn better when the speaker's image is added to the screen.	Avoid visual representations of narrators that may distract from the story world.
13	Embodiment principle	People learn more deeply when the onscreen instructor displays high rather than low embodiment.	Use expressive character movements and gestures to convey emotions and actions relevant to the narrative.
14	Immersion principle	People do not necessarily learn better in immersive 3D virtual environments than in corresponding 2D presentations.	Limit immersive or highly realistic effects that may disrupt narrative coherence or increase cognitive load.
15	Generative activity principle	People learn better when they are guided to engage in generative learning activities.	Include prompts that encourage prediction, reflection, or meaning-making without interrupting narrative flow.

significant demands on readers' attentional resources. Studies further show that narratives evoke emotions and activate memories that resonate with readers' personal experiences, helping them establish meaningful connections and fostering deeper engagement, which in turn often stimulates further voluntary reading practices (Kuzmičová & Cremin, 2022).

1.3 The importance of narrative

In literary theory, communication studies, and psychology, the term *narrativity* is used as an umbrella concept encompassing the set of characteristics that distin-

guish narrative texts from other text types, such as expository, argumentative, or descriptive texts. Narration, however, is not merely an expressive form; rather, it constitutes a fundamental cognitive tool through which human beings make sense of the world and of themselves. As argued by Bruner, life can be understood as a flow of events involving characters, actions, and objects situated within spatio-temporal contexts, in which the self assumes the role of the main protagonist (Bruner, 2004). From this perspective, narrative identity theory, developed within the cognitive sciences, posits that individuals construct their identities in the form of stories. Through an ongoing process of internal reworking, facts and experiences are organised into a coherent autobiographical

narrative that enables individuals to attribute meaning to lived experience. Humans do not simply undergo experiences; rather, they structure and recount them in order to make sense of them. A coherent and meaningful self-narrative is therefore crucial for personal identity and for a sense of self-continuity (Lee et al., 2020).

Within this contribution, the focus is placed on reading for pleasure, with particular attention to narrative engagement, while acknowledging that, in the context of digital books, narratives are often presented in ways that differ from traditional print or illustrated storytelling. Without disregarding the importance of pedagogical reflections on how to promote reading for pleasure in formal educational contexts, the present work foregrounds children's personal and social engagement with narrative in digital books.

As shown by Gottschall and Oatley, the human inclination to create and interpret stories is not merely a learned skill but a deeply rooted feature of our species. From an evolutionary perspective, narratives provide an adaptive advantage by functioning as a kind of simulator that prepares individuals for the complexities of life. Narrative fiction has been described as «an ancient virtual reality technology that specializes in simulating human problems» (Gottschall, 2012, p. 59). Through stories, individuals can explore dilemmas, emotions, and consequences within a safe environment. Narratives thus allow humans to simulate social experiences, learn from past events, and imagine possible futures, enabling them to engage with situations in a vicarious manner. In this sense, immersion in narrative worlds can be understood as a form of experiential learning, with potential implications for real-life understanding and behaviour (Mar & Oatley, 2008).

Narrative provides a privileged context for the development of perspective-taking, empathy, and socio-emotional skills (Kidd & Castano, 2013). In particular, it fosters affective empathy, the ability to feel what another person feels, and Theory of Mind (ToM), understood as the capacity to anticipate and interpret others' perspectives and mental states (Hogan, 2018). Within this framework, identification occurs when readers imaginatively adopt the viewpoint of story characters, experiencing their emotions, sensations, goals, and intentions (Mar & Oatley, 2008). This emotional involvement arises from the mental simulation of narrative events, through which readers internally model characters' experiences and actions (Busselle & Bilandzic, 2009). Engagement with narrative fiction can thus be understood as a form of cognitive and emotional simulation of social experience that enhances perspective-taking and role-taking skills, regardless of medium

or fictionality (Mar & Oatley, 2008). Neurocognitive evidence supports these effects: mechanisms of embodied simulation and mirroring enable readers to mentally simulate actions and emotions described in the text, fostering empathic identification (Gallese & Morelli, 2024), while neuroimaging studies show that narrative reading activates brain regions associated with empathy and theory of mind (Mar, 2011).

2. METHOD

2.1 Research design

This study adopts a structured qualitative literature review design aimed at identifying, selecting, and synthesising research on children's digital storybooks, with particular attention to the relationship between design features and narrative-related outcomes. The review focuses on how formal and interactive characteristics of digital storybooks shape children's comprehension, engagement, reading experience, and adult-child shared reading.

The review combined an exploratory phase and a focused analytical phase. Google Scholar was used initially to map the field, identify recurrent descriptors, thematic clusters, and seminal contributions. Targeted searches were then conducted in major academic databases and publisher archives, including Scopus, Web of Science, ERIC, Taylor & Francis Online, Wiley Online Library, SAGE Journals, Elsevier PsycInfo, Education Research Complete, APA PsycInfo, APA PsycArticles, Medline, PubMed, and related education and social science databases.

The review did not aim at a statistical meta-analysis. Instead, it was designed as a structured qualitative synthesis of a heterogeneous body of literature, making the search, selection, and synthesis procedures as explicit as possible (Grant & Booth, 2009; Snyder, 2019; Baethge et al., 2019). Greater weight was assigned to meta-analyses, systematic reviews, and methodologically rigorous experimental studies, while smaller-scale studies were retained when they offered specific insight into design mechanisms, reading processes, or narrative engagement (OCEBM, 2011).

2.2 Research questions

The review was guided by the following research questions:

- RQ1. Which design features of children's digital storybooks are most frequently associated with differences in narrative comprehension, engagement, and reading pleasure?

- RQ2. How are these features conceptualised and operationalised across the empirical and review literature?
- RQ3. Under which reading conditions, particularly in relation to adult-child interaction and shared reading practices, do digital storybooks appear to support or hinder children's narrative experience?

No formal hypotheses were tested statistically. However, the analysis was guided by two working assumptions derived from the theoretical framework: first, that digital storybooks are more likely to support comprehension and engagement when multimodal and interactive features are congruent with the narrative structure and do not create excessive extraneous cognitive load; second, that the educational value of these features depends on the reading situation, including adult guidance, mode of interaction, and broader contextual conditions.

2.3 Search strategy and eligibility criteria

The search strategy was developed progressively in order to preserve conceptual breadth while delimiting the field. Search terms covered four main areas: digital reading formats and devices; design-related features of children's digital books, such as interactivity, navigation, animation, and multimedia support; relational and experiential dimensions, including shared reading, dialogic reading, and narrative engagement; and outcome variables such as reading comprehension, story comprehension, narrative immersion, and reading engagement. Population terms included child, preschool children, kindergarten, and early primary-school readers. Terms were combined through Boolean operators and applied to titles, abstracts, and keywords.

To complement database searches, open-access repositories, institutional archives, and conference proceedings were also examined when they offered sufficient methodological transparency and direct relevance to the review aims.

Studies were included if they were published between January 2010 and January 2025; focused on children in preschool, kindergarten, or early primary school; addressed digital storybooks and outcomes related to narrative comprehension, engagement, recall or retelling, or adult-child interaction; and provided adequate methodological transparency. Priority was given to meta-analyses, systematic or critical reviews, and experimental or quasi-experimental studies linking design features to narrative-related outcomes.

Studies were excluded if they focused primarily on isolated literacy skills, such as vocabulary acquisition, decoding, or general literacy outcomes, without explic-

it connection to narrative design or reading processes within digital storybooks; if they focused on adolescents or adults; if they addressed digital devices or screen-based activities without a specific focus on digital storybooks; or if they lacked sufficient methodological clarity for analytical comparison.

2.4 Final corpus and analytic dimensions

The search process led to the consultation of 110 records. After screening and eligibility assessment, 32 peer-reviewed studies were retained for the final corpus, including 10 reviews, 15 experimental studies, and 7 quasi-experimental or observational studies. Among the empirical studies, the main subgroups concerned comparisons between print and digital storybooks, comparisons between enhanced and non-enhanced e-books, and studies focusing on specific design features or shared reading conditions.

Cross-study comparison led to the identification of four recurrent analytic dimensions: multimodality, text interactivity, medium affordances, and the reading situation. These dimensions were not imposed a priori, but emerged as the most consistent lenses through which digital storybook design was conceptualised, operationalised, and linked to children's reading processes. The synthesis is therefore presented thematically rather than study by study, and Section 3 is organised around these four dimensions in order to highlight recurrent patterns, convergences, and differences across the selected studies.

3. DESIGN GUIDELINES FOR CHILDREN'S DIGITAL STORYBOOKS

Children's books – whether print, audiobooks, or simple and enhanced e-books – present both external features, immediately perceptible (weight, portability, page-turning mechanisms), and internal features tied to graphic design, degrees of interactivity, and embedded multimedia (Kucirkova, 2017a; Kim & Hassinger-Das, 2019). Reading experiences are also shaped by interface characteristics and by the material affordances of different devices (Mangen & Kuiken, 2014). In digital books and narrative apps, these affordances can be understood along four main dimensions:

- *multimodal text*, integrating dynamic images, sounds, and activities aligned with the storyline;
- *interactive text*, involving the reader's ability to access additional information or receive feedback;
- *the medium*, conceived both in contrast with print and as a set of embodied possibilities and alternative

pathways enabled by the device;

- *the reading situation*, shaped by screen-sharing practices, rereading opportunities, and the influence of prior knowledge.

Each of these dimensions is examined in the following sections.

3.1 Affordances of multimodality

The meaning-making potential of a storybook or picturebook can be understood in terms of semiotic affordances, namely the expressive possibilities offered by the modes involved in meaning construction. Digital narratives retain key conventions of traditional storytelling while extending them through the coordinated interplay of multiple semiotic modes, giving rise to multimodal ensembles – integrated configurations of resources that jointly produce meaning. From this perspective, multimodality is not a simple juxtaposition of codes, but a process of orchestration in which modes interact in semiotic harmony. Multimodal reading therefore requires readers to process information across distinct semiotic systems, each characterised by specific affordances and constraints (Kress, 2010). Meaning does not reside in any single mode; rather, it emerges from the relationships among modes, generating a semantic richness that exceeds the sum of individual components. Well-designed digital picture books exemplify this process by integrating verbal narration and images in complementary ways, thereby enriching the textual experience and supporting deeper story comprehension (Bus et al., 2020; Müller-Brauers et al., 2020).

Animations can strengthen the narrative by highlighting relevant details, introducing dialogue, or extending character actions (Bus & Anstadt, 2021; Li et al., 2023). Such features can guide attention to key information, enhance immersion (Sun et al., 2022), and facilitate the integration of visuals and narration (Christ et al., 2019; Furenes et al., 2021; Yeari et al., 2024). They may also clarify implicit meanings, supporting inferences about causal relations and characters' emotions, thoughts, and goals (Yeari et al., 2024), thereby improving comprehension and recall (Altun, 2021; Korat et al., 2022a). Animations that illustrate key narrative actions can support lexical and narrative comprehension more effectively than static visuals, contributing in particular to expressive vocabulary development (Korat et al., 2022a; Sun et al., 2019).

Digital features such as integrated supports, multimodal elements, animations, zooming functions, and interactive dictionaries can enhance the appeal of stories by making them more stimulating and engaging

(Li & Bus, 2023). These features have been shown to increase children's attention, participation, enjoyment, and active involvement in meaning-making processes (Richter & Courage, 2017; Strouse & Ganea, 2017). At the same time, children also report appreciating e-books even in the absence of such enhancements (Son et al., 2020; Richter & Courage, 2017). In particular, self-narrated books with integrated read-aloud functions appear especially attractive to young readers, supporting both engagement and accessibility (Dore et al., 2018). Moreover, e-books that include exploratory or creative opportunities may foster intrinsic motivation, while personalised and collaborative formats that support co-creation between children and caregivers can further enhance positive engagement with texts (Kucirkova, 2017b).

However, the benefits of multimedia are not guaranteed. Digital picture books often include rich multimedia elements that attract attention and interest, yet meta-analyses report only modest and inconsistent effects on comprehension (Chuang & Jamiat, 2023; Savva et al., 2022). Redundant or overly dense multimedia can distract children and undermine understanding (Bali et al., 2023; López-Escribano et al., 2021). When e-stories contain too many features, managing them while following the storyline can overload working memory and disrupt comprehension (Altun, 2021; Ma et al., 2024). Excessive multimedia density may also fragment narrative continuity and create temporal mismatches that impede integration and memory. Animations, in particular, may introduce an additional layer of problem-solving, challenging preschoolers who are still developing the skills required to integrate complex information (Liang et al., 2025).

Coherence is therefore crucial. Animations that are aligned with narrative progression support processing (Li et al., 2023; Müller-Brauers et al., 2020), whereas decorative embellishments – the so-called «bells and whistles» – can undermine comprehension (Bus et al., 2015; Li & Bus, 2023). A recent meta-analysis on non-independent readers showed that printed books outperformed minimally enhanced digital books in comprehension, whereas no differences emerged when digital enrichments were coherent with the narrative (Furenes et al., 2021).

Temporal synchronisation across modes is equally important. According to the temporal contiguity principle, presenting verbal and visual information simultaneously supports meaning-making and reduces cognitive load, while spatial contiguity recommends placing text near the relevant image. When visuals and words appear together, with text synchronised to audio narration, children are better able to maintain focus and narrative coherence (Long et al., 2018). Coordinating audio with

Table 2. Multimedia design principles for children's digital storybooks.

Category	Design principle	References
Multimedia integration	Integrate words, images, and narration to support meaning-making	Fiorella & Mayer, 2022; Bus et al., 2020; Li & Bus, 2023
Coherence	Remove non-essential elements that increase cognitive load	Bus et al., 2015; Sweller et al., 2019; Altun, 2021; Bali et al., 2023; Son & Butcher, 2024
Signaling	Guide attention to relevant information	Christ et al., 2019; Yeari et al., 2024
Spatial – temporal contiguity	Align text, images, and narration in space and time	Long et al., 2018; Liu et al., 2022
Semiotic orchestration	Coordinate multiple modes without redundancy	Kress, 2010; Kucirkova, 2017a
Meaningful enrichment	Use animations, sounds, and music to clarify narrative content	Bus & Anstadt, 2021; Li et al., 2023; Furenes et al., 2021; Altun, 2024
Avoid redundancy	Avoid unnecessary overlap between text, audio, and animation	Bus et al., 2015; López-Escribano et al., 2021; Ma et al., 2024; Sweller, 2020

visuals is essential for keeping attention aligned with the unfolding story, a condition that appears more easily achieved with automated than with user-controlled features (Liu et al., 2022).

Audio elements such as sounds and music add a further layer of complexity. When appropriately integrated, they can enhance attention, convey emotional tone, and foster empathic engagement (Altun, 2024). However, they may also overload the auditory channel and hinder language processing, particularly for younger children and for those with language difficulties (Sari et al., 2019).

Despite these challenges, multimedia features can be particularly supportive for children with limited background knowledge – a major predictor of comprehension (Wexler, 2025). Picture books often contain vocabulary and syntactic structures that go beyond everyday exposure (Montag et al., 2015), and well-designed multimedia can provide parallel nonverbal representations that help children follow the storyline despite linguistic demands (Bus et al., 2015).

Finally, the balance between multimedia and interactivity emerges as a critical design issue. E-books that include multimedia elements such as audio, music, and animations often outperform print books in terms of vocabulary and comprehension, but this advantage tends to disappear when interactive features are added. Children understand stories better in multimedia-only e-books than in hybrid versions that combine multimedia and interactivity (Liang et al., 2025), underscoring the need for careful calibration of design features (see Table 2).

3.2 Affordances of interactivity

Reading is inherently interactive, as readers actively construct meaning through cognitive, emotional, senso-

ry, and embodied resources (Rosenblatt, 1978). However, interactivity takes different forms in print and digital narratives. Digital storybooks can extend engagement through animations, sound effects, and features such as audio narration, highlighting, hotspots, feedback, and creative tools, potentially “bringing stories to life” (Kucirkova & Flewitt, 2022). The extent to which these affordances support narrative coherence and comprehension, however, varies widely².

Early generations of story apps often embedded playful interactions weakly connected to the storyline, frequently undermining literacy goals (Bus et al., 2021). Although more recent designs increasingly prioritise narrative-relevant interactivity, legacy features such as hotspots remain widespread despite limited evidence of effectiveness (Bus et al., 2025). Empirical findings therefore remain mixed. Some studies report benefits for comprehension and knowledge acquisition (Bali et al., 2023; Son et al., 2020), and interactive apps may guide attention more effectively than static e-books or print texts (Korat et al., 2022b; Sun et al., 2019). When carefully designed, questions and hotspots can highlight essential information, activate prior knowledge, scaffold inference and provide clarification (Bus & Anstadt, 2021).

At the same time, these benefits are highly contingent on design quality. Poorly aligned or excessive interactivity can distract from the storyline, increase cognitive load, and impair comprehension and recall (Bus et

² A well-known example illustrates this distinction. *The Fantastic Flying Books of Mr. Morris Lessmore*, though aesthetically sophisticated, includes playful activities only loosely tied to the narrative, which can divert attention from the story. In contrast, *The Prank in the Forest* integrates coherent exploratory features – such as letting children insert their own emotional selfies into the characters – making the story more personally meaningful and reinforcing both immersion and the links between text and images (see Vackova et al., 2023).

al., 2021; Furenes et al., 2021; Ma et al., 2024; Son & Butcher, 2024). The type and function of interactivity are therefore critical. Hotspots are beneficial only when narratively coherent and explicitly tied to learning goals (Christ et al., 2019; Li & Bus, 2023; Korat et al., 2022b), while personalisation and well-aligned exploratory tools may foster deeper engagement (Abdelhadi, 2020; Kucirkova, 2017b). Unstructured interaction, by contrast, often increases distraction.

Recent evidence clarifies this ambivalence by showing that enjoyment mediates the relationship between cognitive load and reading outcomes. Cai et al. (2024) show that reading achievement is maximised when cognitive load is perceived as manageable and optimally challenging, whereas both overload and underload reduce enjoyment and performance. Interactivity thus supports comprehension only when cognitive demands are balanced with narrative pleasure.

These dynamics are particularly consequential for young children, whose attentional resources are limited. Unaligned hotspots and game-like elements are especially disruptive when stories are unfamiliar (Furenes et al., 2021; Long et al., 2018). A mismatch between narrative content and interactivity elevates cognitive load, fragments processing, and weakens encoding, retelling, and comprehension (Lim et al., 2021). Conversely, close alignment between narrative and interaction lowers the cognitive cost of shifting between modes (Chuang & Jamiat, 2023).

Accordingly, scholars stress the need to calibrate interactivity to children's developmental level and expertise (Bali et al., 2023; Vackova et al., 2023). The expertise-reversal principle shows that supports helpful for novices may become redundant or counterproductive for more advanced readers, as unnecessary guidance increases cognitive load (Kalyuga, 2007). Interactivity should therefore offer appropriate "opportunities for action" aligned with readers' skills and competences (Colombo & Landoni, 2014; see Table 3)³.

In recreational reading, optimal engagement occurs when readers «lose themselves in a book», becoming so absorbed that time fades from awareness (Green, 2021). This experience closely resembles the concept of flow⁴ (Csikszentmihalyi, 2008) and overlaps with relat-

ed constructs such as «narrative absorption», «narrative immersion», «narrative presence», and «narrative transportation» (Hakemulder et al., 2017). Flow not only enhances reading pleasure but also supports presence, identification, suspense, cognitive involvement, and comprehension (Thissen et al., 2021). In digital storybooks, read-aloud narration and well-integrated multimedia features may further increase transportation and help children regulate pacing in line with their processing speed (Bus & Anstadt, 2021; Colombo & Landoni, 2014).

Narrative engagement depends on emotional immersion, aesthetic appreciation, and empathic alignment with characters through identification and perspective-taking (Busselle & Bilandzic, 2009; Mar & Oatley, 2008). According to Busselle and Bilandzic, immersion relies on mental simulation of narrative events and collapses when inconsistencies or violations of the fictional world's logic disrupt this process. Interactive stories should therefore avoid elements that conflict with narrative coherence or users' world knowledge.

Unlike multimedia elements synchronised with narrative progression, interactive functions are user-controlled and may diverge from the storyline, increasing cognitive load. Interactive narratives must therefore negotiate the "narrative paradox" between authorial control and user agency. While agency can enhance engagement, excessive or poorly structured control may undermine coherence and immersion: unpredictable navigation, frequent task-switching, and even narrative-relevant prompts can interrupt cognitive flow (Bus et al., 2021; Bus et al., 2025). By contrast, accessible interfaces, narrative-driven interaction, and segmented, learner-controlled pacing support both comprehension and immersion, in line with the segmenting principle (Bus & Anstadt, 2021).

3.3 Affordances of the medium

Recent syntheses comparing print and digital reading show that the medium can influence comprehension and consistently report a «screen inferiority effect» for complex informational texts: under comparable conditions, comprehension is typically higher on paper. This pattern emerges across ages, educational levels, and languages, and is particularly pronounced among novice

³ A recent study on beginning readers found that comprehension of narrative and informational texts was higher in digital reading and among children with stronger word-reading skills. Comprehension was lower for less skilled readers in the digital condition but became comparable across digital and print formats as word-reading ability increased; children with more advanced decoding skills showed no disadvantage when reading on screen rather than on paper (Florit et al., 2023).

⁴ Flow is a mental state of deep enjoyment and intense involvement in an activity, during which most attentional resources are focused on its execution. It is marked by total immersion, heightened concentration,

a sense of control, reduced self-awareness, and an altered perception of time. Flow arises when challenge and skill are balanced, goals are clear, feedback is immediate, and the activity is autotelic-intrinsically rewarding and able to sustain internal motivation.

Table 3. Interactivity design principles for children's digital storybooks.

Category	Design principle	References
Meaningful interaction	Use interactions that enhance comprehension and direct attention to key information	Kucirkova, 2018; Vackova et al., 2023; Bus et al., 2015
Narrative congruence	Ensure hotspots, animations, and prompts align strictly with the storyline	Bus et al., 2025; Lim et al., 2021; Christ et al., 2019
Scaffolding – clarification	Provide contextual guidance, activate prior knowledge, and offer clarifying information	Bus & Anstadt, 2021; Revelle et al., 2019
Developmental calibration	Adjust the amount and type of interactivity to children's attentional and cognitive capacities	Bali et al., 2023; Furenes et al., 2021; Chuang & Jamiat, 2023
Flow support	Maintain smooth pacing, minimise task switching, and avoid interruptions that break immersion	Bus et al., 2020, 2025; Thissen et al., 2021
User control	Allow children to regulate pacing to reduce cognitive load	Colombo & Landoni, 2014; Vackova et al., 2023; Son et al., 2020

readers, in time-limited tasks, and especially for expository texts (see Nardi, 2026).

This print advantage, however, does not extend to narrative texts. Studies generally report no disadvantage for narrative comprehension in digital formats (Delgado & Salmerón, 2021; Schwabe et al., 2022). Narratives appear to mitigate many of the typical drawbacks associated with screen reading because they provide setting, plot, thematic continuity, and emotional structure, resulting in greater cohesion, concreteness, and lower cognitive demands (Mar et al., 2021). Evidence suggests that narrative structure constitutes a particularly effective format for human information processing: information embedded in stories is remembered more accurately and for longer periods (Lee et al., 2020). In narratives, a greater number of connective markers and stronger temporal cohesion, along with their emotional dimension, foster deeper engagement and more accurate information processing (Hamedí et al., 2020). By contrast, informational texts rely more heavily on specialised vocabulary, abstraction, and prior knowledge, making them cognitively demanding (Hebert et al., 2016; Lorch, 2017).

These genre differences help explain why narrative reading often yields higher comprehension than expository reading (Mar et al., 2021). From a cognitive and experiential perspective, narratives tend to activate an “aesthetic” mode of reading rather than the “efferent” mode typical of informational texts (Rosenblatt, 1978). Narrative comprehension involves tracking plot development, identifying characters, generating inferences, and integrating information across the story. Meaning emerges through an active, constructive process shaped by the interaction between text, reader, context, and medium. A sufficient degree of narrativity supports fluent comprehension, facilitates transportation into the story world, and elicits emotional responses that pro-

mote deeper engagement and more elaborative processing (Hamedí et al., 2020). Immersion, in turn, reduces awareness of the reading medium and encourages a content-focused reading mode, helping to explain why narratives are less sensitive to medium effects (Schwabe et al., 2021).

At the same time, this immersive potential is also what digital technologies are most likely to disrupt. Narrative immersion typically entails a temporary suspension of awareness of both the external world and the material support of reading (Mangen & Kuiken, 2014). Screen-based reading, by contrast, may promote a form of “distracted immersivity”, whereby interaction with the device repeatedly interrupts narrative flow and increases awareness of the medium itself. This effect is further amplified in mobile reading contexts, where reading often takes place on the move and in short, fragmented sessions, undermining the continuity of the narrative experience (Kuzmičová et al., 2020). In such cases, readers may “use” books rather than read them (Baron, 2021), and “lose themselves in the device” rather than in the narrative. Research suggests that rich interfaces do not necessarily enhance engagement; rather, reduced and well-regulated interaction can better support narrative transportation (Mangen & Kuiken, 2014). Effective digital design must therefore balance engagement and unobtrusiveness, allowing for limited, manageable distractions from which readers can easily re-enter the narrative flow (see Table 4).

Despite these challenges, research on e-books and narrative skill development generally reports positive effects (Furenes et al., 2021). Recent syntheses even point to a moderate digital advantage, though outcomes vary as a function of design quality, type of multimedia enhancement, and children's prior skills and experience with digital devices (Liang et al., 2025).

Table 4. Medium-related design principles for digital storybook reading.

Category	Design principle	References
Screen vs. paper	Consider reduced tactile and spatial cues when reading on screens, which may affect orientation and absorption.	Mangen & Kuiken, 2014; Baron, 2021
Cognitive load	Minimise visual and interactive complexity to avoid overload, especially in informational texts.	Furenes et al., 2021; Schwabe et al., 2022
Genre effect	Use narrative structure to compensate for digital constraints, as narrative cohesion supports comprehension on screens.	Delgado & Salmerón, 2021; Schwabe et al., 2021; Mar et al., 2021
Immersion – absorption	Support uninterrupted immersion by limiting distractions that pull attention toward the device rather than the story.	Mangen & Kuiken, 2014; Kuzmičová et al., 2020
Interface transparency	Ensure the interface remains unobtrusive, avoiding excessive features that disrupt focus and narrative flow.	Baron, 2021; Bus et al., 2021; Mangen & Kuiken, 2014
Attentional focus	Reduce commands, menus, and interactive prompts that fragment attention and weaken narrative engagement.	Schwabe et al., 2022; Ma et al., 2024; Bus et al., 2020
Reader-device relation	Design to reduce “distracted immersion,” helping readers stay with the story rather than with the device.	Baron, 2021; Kuzmičová et al., 2020

While much of the literature has focused on cognitive outcomes, experiential dimensions such as emotional involvement and social engagement have only recently received systematic attention (Schwabe et al., 2021). Reviews that include these dimensions confirm that reading narratives on screen does not impair comprehension relative to print, highlighting the importance of genre and design in shaping digital reading experiences (Schwabe et al., 2022).

3.4 Affordances of the reading situation

For young children, reading typically takes place either as an adult-mediated activity or as exploratory, self-directed engagement, and both forms are now increasingly enacted in digital contexts (Kim & Hassinger-Das, 2019). Children may independently access narrated e-books, while shared print-reading practices are progressively migrating to electronic books enriched with touch-activated feedback (Nardi, 2016). Despite these shifts, shared reading with caregivers remains one of the most effective strategies for fostering emergent literacy and is associated with well-documented long-term developmental benefits (Noble et al., 2019).

A robust body of experimental research shows that caregiver–child interaction during reading is a key determinant of learning outcomes. Caregivers employ a range of strategies – including reading verbatim, expanding or personalising the text, and inventing storylines – and dialogic reading practices actively guide children’s meaning-making. Through communicative attunement and sustained shared thinking, adults modulate gestures, tone, and language in response to children’s cues. Questions, comments, and references to text and images draw

attention to salient information, clarify challenging passages, and connect narrative events to prior knowledge, thereby supporting comprehension, attention, and inferential skills (Müller-Brauers et al., 2020).

E-books can partially extend this scaffolding. Multimedia features may function as «electronic scaffolds» (McKenna, 1998), facilitating comprehension and vocabulary even in the absence of an adult (Furenes et al., 2021). In this sense, digital devices can act as mediational tools when interactions remain within the child’s zone of proximal development and are responsive to the child’s cues (Vygotskij, 1978). Some e-books include read-to-me functions that allow independent access (Dore et al., 2018), while others rely on parental mediation or hybrid narration. Self-directed reading gives children control over pacing, whereas system-controlled narration proceeds automatically. Certain digital books attempt to simulate dialogic dynamics through parasocial interactions with on-screen characters (Vackova et al., 2023), and interactive questions placed at key narrative points can emulate adult mediation and directly engage children (Revelle et al., 2019).

Evidence suggests that the most effective digital books integrate interactivity seamlessly with the narrative. Meta-analytic findings show that interactive affordances can enhance comprehension in ways comparable to adult scaffolding (Bus et al., 2015; see Table 5)). Some books incorporate interaction “blocks” that require children to perform the same action as the protagonist for the story to continue, improving comprehension and memory (Bus & Anstadt, 2021; Son et al., 2020). Mirroring characters’ actions may also foster perspective-taking and identification, further supporting narrative engagement (Bus et al., 2021; Zhao & Unsworth, 2017).

Table 5. Reading situation design principles for shared and independent digital storybook reading.

Category	Design principle	References
Shared reading	Support adult-child meaning-making through dialogue, questions, and references to text and images.	Noble et al., 2019; Strouse & Ganea, 2017
Scaffolding	Provide explanatory feedback, clarifications, and prompts that guide comprehension.	Furenes et al., 2021; Dore et al., 2018
Electronic scaffolds	Use multimedia features (e.g., narration, highlighting) as supports when adult mediation is limited.	McKenna, 1998; Furenes et al., 2021; Bus et al., 2015
Independent access	Allow children to read autonomously through read-to-me functions or user-controlled pacing.	Dore et al., 2018; Xu et al., 2022
Dialogic dynamics	Use embedded questions or parasocial interactions to emulate adult guidance.	Vackova et al., 2023; Revelle et al., 2019; Xu et al., 2022
Narrative-aligned interactivity	Integrate interactions that advance the storyline and deepen comprehension.	Bus et al., 2025; Bus et al., 2015; Lim et al., 2021
Embodied engagement	Encourage actions that mirror characters' behaviour to support identification and memory.	Bus & Anstadt, 2021; Son et al., 2020; Bus et al., 2021; Zhao & Unsworth, 2017; Gallese & Morelli, 2024
Hybrid adult-ebook mediation	Combine adult mediation with digital affordances to enhance comprehension, dialogue, and narrative processing	Nardi, 2016; Egert et al., 2022; Savva et al., 2022; Chuang & Jamiat, 2023

Reading aloud is inherently multisensory. In shared print reading, adults combine words and images with intonation, vocal effects, gestures, and embodied actions, such as knocking on the table to mimic a door or humming a fanfare. These interactions reinforce comprehension by engaging auditory, visual, and bodily modalities. Print books are typically used for social and relational purposes, fostering dialogue, shared attention, and rich communicative exchanges. By contrast, e-books are more often used primarily as entertainment tools, a pattern associated with fewer communicative interactions and reduced relational warmth and affective attunement (Yuill & Martin, 2016). Studies consistently show that print books elicit richer and more frequent adult-child dialogue than digital books (Strouse & Ganea, 2017; Munzer et al., 2019). During e-book reading, the adult's role often diminishes (López-Escribano et al., 2021), and comprehension support and dialogic exchanges become less frequent. Adults reading print books more often adopt meaning-oriented strategies, whereas digital reading prompts procedural comments such as «click here» or «turn the page» (Munzer et al., 2019). Highly enhanced e-books – especially those with features unrelated to the narrative – further reduce story-related talk and increase device-focused comments, leading to lower engagement and weaker comprehension (Nardi, 2016; Munzer et al., 2019).

Overall, evidence indicates that adult-supported e-book reading offers more benefits than independent use. The combination of adult mediation and digital affordances constitutes a particularly powerful asset (Egert et al., 2022; Korat et al., 2022a; Zhao & Un-

worth, 2017). The «e-book-plus-adult» configuration appears especially advantageous (Nardi, 2016), and recent meta-analytic evidence confirms that benefits increase when adults actively mediate interactive features (Chuang & Jamiat, 2023). In some cases, adult-supported digital reading even surpasses adult-supported print reading in its effects on comprehension (Savva et al., 2022).

Parental mediation is therefore decisive for supporting children's comprehension during e-book reading. When adults accompany digital reading with explanations, questions, and comments, children show improved understanding of plot structure, better integration of text and images, and more advanced interpretive strategies (Dore et al., 2018; Strouse et al., 2023). Well-designed hotspots can promote joint attention, highlight central themes, and encourage discussion, whereas poorly aligned ones risk diverting attention toward peripheral elements (Abdelhadi, 2020). Embedded questions should guide interpretation and prompt reflection, and immediate feedback should signal that the child's input has narrative consequences. When advanced e-book features are well designed, coherently integrated with the narrative, and aligned with instructional goals, they can support emotional and cognitive engagement at levels comparable to shared print reading and facilitate text comprehension (Clinton-Lisell et al., 2024). Ultimately, digital books that provide clear visual cues and narrative-aligned interactivity can sustain high-quality shared reading and dialogic exchanges comparable to those elicited by print (Liang et al., 2025; Strouse et al., 2023).

4. DISCUSSION

The narrative experience offered by children's digital books is not a by-product of technology but the outcome of deliberate design decisions. Choices such as the pacing of animations or the placement of hotspots shape how children construct meaning, sustain attention, and experience immersion. Multimedia and interactivity can enrich storytelling only when they are narratively coherent; otherwise, they risk disrupting comprehension and engagement. Accordingly, learning outcomes depend less on the mere presence of enhancements than on their quality and alignment with principles from multimedia learning, dual coding, and cognitive load theory (Bus et al., 2020; Mayer, 2021; Chuang & Jamiat, 2023).

Across studies, a recurring finding is that “more” is not necessarily “better.” A higher number of animations does not automatically improve comprehension or enjoyment. Evidence instead supports a calibrated approach in which a limited set of narratively relevant animations highlights key story events and is adjusted to text complexity and readers' skill levels; excessive or decorative animation can fragment attention and increase cognitive load, especially in more complex narratives (Son & Butcher, 2024). In this sense, effectiveness lies in narrative function rather than multimedia density.

More broadly, the literature converges on a core principle: e-books work best when narrative content, multimedia, and interactivity are integrated as a single coherent system (Bus et al., 2015; Chuang & Jamiat, 2023; Liang et al., 2025). Interactivity is most supportive when it scaffolds inference-making and narrative processing rather than operating as a parallel activity (Kucirkova, 2018). Likewise, multimedia features are beneficial when they function as embedded supports – narratively relevant illustrations, animations, sound effects, and music; temporal alignment between text, audio, and images; and restrictions of animation to essential story elements (Mayer, 2021; Long et al., 2018; Bus & Anstadt, 2021; Li et al., 2023). Conversely, seductive details, irrelevant visuals, incongruent audio, or mismatched emotional tone undermine comprehension by increasing extraneous load and breaking immersion (Schwabe et al., 2021, 2022; Chuang & Jamiat, 2023). Designers therefore need to evaluate whether each interactive element genuinely advances narrative understanding or primarily introduces extraneous stimulation (Liang et al., 2025).

Narrative coherence also depends on structural and interface choices. Story progression should remain predominantly linear and segmentable, with features that support event tracking and allow children to regulate

pacing (Chuang & Jamiat, 2023). Motivational elements appear most effective when they reinforce story engagement rather than compete with it through game-like mechanics (Mangen & Kuiken, 2014). From this perspective, the goal is to support flow and sustained narrative absorption, minimising task switching and interruptions that pull attention away from the story world (Colombo & Landoni, 2014; Thissen et al., 2021).

Taken together, available evidence suggests that digital reading does not disadvantage narrative comprehension and, when enhancements are carefully calibrated, may even support it. High-quality digital books combine narrative and educational value, meaningful multimodality, well-regulated interactivity, and targeted personalisation, avoiding one-size-fits-all solutions (Kucirkova, 2018; Vackova et al., 2023). Concrete design features illustrate how this can be achieved: dictionary tools are most effective when brief, visually linked, and embedded without interrupting narrative flow (Furenes et al., 2021); hotspots follow the same logic, hindering comprehension when irrelevant but supporting learning when they direct attention to key events or vocabulary (Christ et al., 2019; Lim et al., 2021; Bus et al., 2025). By contrast, games and non-narrative interactivity often reduce comprehension by inducing task switching and should be included only when narratively justified (Bus et al., 2021; Furenes et al., 2021; Ma et al., 2024; Son & Butcher, 2024). Interface design should therefore be treated as an integral part of the narrative experience: visually appealing, but unobtrusive and oriented toward immersion rather than distraction.

For these reasons, developing high-quality digital books benefits from collaboration among designers, child-development specialists, and digital literacy experts, and from interdisciplinary exchange across cognitive science, pedagogy, and media studies (Dore et al., 2018; Meyer et al., 2021; Egert et al., 2022; Kucirkova & Kümmerling-Meibauer, 2021). Moving beyond commercial strategies that prioritise attention-grabbing features, evidence-based design remains essential to ensure that digital storybooks offer narrative experiences that are inclusive, coherent, and educationally meaningful (Kucirkova, 2018).

5. LIMITATIONS AND FUTURE DIRECTIONS

This review has some limitations. First, because of the heterogeneity of digital formats, study designs, and outcome measures, it was conceived as a qualitative synthesis rather than as a statistical meta-analysis. The conclusions should therefore be read as evidence-informed

patterns rather than as effect-size estimates. Second, key constructs such as interactivity, engagement, and narrative comprehension are not operationalised consistently across studies, which limits direct comparability. The design principles proposed here should therefore be understood as empirically grounded guidelines rather than universally generalisable prescriptions.

These limitations also indicate directions for future research. As previously argued (Bus et al., 2025), studies should move beyond treating digital books as a homogeneous category and examine more closely the specific functionalities and design configurations that distinguish them. Research should also extend beyond cognitive outcomes to address experiential dimensions more systematically, including affective involvement, social interaction, and children's sense of narrative agency (Schwabe et al., 2021). In this respect, recent developments in artificial intelligence open new possibilities for adaptive scaffolding through personalised prompts, explanations, tutoring, and narrative extensions tailored to children's age and interests, while conversational agents may support dialogic reading by fostering inference-making and reflective engagement in ways comparable to adult mediation (Chen et al., 2025; Ratner et al., 2025). Future studies should therefore examine how AI-driven personalisation can be integrated into narrative apps in ethically and pedagogically sound ways, while preserving the integrity of the storytelling experience.

6. CONCLUSION

This article concludes that children's digital storybooks can support reading for pleasure only when narrative design is addressed as a pedagogical and experiential issue rather than as a technological enhancement in itself. Across cognitive load theory, dual coding, multimedia learning, and cognitive-affective perspectives, the evidence converges on a clear principle: comprehension, motivation, and immersion depend primarily on the narrative coherence and functional integration of multimedia features, not on their quantity. Digital elements are effective when they act as embedded supports for meaning-making, but they undermine narrative experience when they introduce competing sources of stimulation that fragment attention and disrupt flow. The review further indicates that medium effects are strongly genre-dependent. While complex informational texts are more susceptible to screen-related disadvantages, narrative texts are comparatively resilient, as narrative structure provides emotional engagement, cohesion, and a cognitively efficient format for processing and memory.

However, this resilience is fragile and can be compromised by poorly regulated interactivity, non-linear navigation, or interfaces that foreground the device over the story. Finally, the findings underscore that reading outcomes are shaped not only by interface design but also by reading context: shared reading remains central to emergent literacy, and adult mediation plays a critical role in amplifying the benefits of digital affordances, particularly when adults scaffold children's engagement with interactive features.

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Who gets to teach the past? Colonial narratives, pedagogical authority, and platformized vernacular memories

Chi può insegnare il passato? Narrazioni coloniali, autorità pedagogica e memorie vernacolari piattaformazzate

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Abstract. This exploratory article examines how Italian colonialism is narrated through short-form vernaculars on TikTok and argues that these narratives intervene in public memory and identity formation by making visible what has been institutionally stabilized, downplayed, or left unsaid in Italy's dominant historical grammars. Situating the Italian case within the broader European imperial project and its afterlives, the article links contemporary platform discourse to longer trajectories of selective remembrance and to the marginalization of colonialism in educational transmission. Methodologically, it draws on a qualitative content analysis of forty TikTok videos to reconstruct the interpretive repertoires through which the nexus between colonialism and schooling becomes speakable in everyday digital publics. Two recurrent tendencies structure this contested field: first, a critical current that challenges curricular silences and the sanitization of colonial violence in school teaching and public institutions, thereby questioning the pedagogical authority of Italian educational systems; and second, an ongoing symbolic struggle over the cultural and historical borders that define Italian identity. The article argues that short-form platforms operate as arenas of mnemonic dispute in which historical authority, national identity, and educational legitimacy are negotiated in real time. Tracing how critique and denial circulate within the same media ecology shows how platformed publics reshape understandings of Italian colonial pasts and their contemporary ramifications.

Keywords: education, collective memory, identity, italian colonialism, platform society.

Riassunto. Questo studio esplorativo analizza le modalità attraverso cui il colonialismo italiano viene narrato su TikTok attraverso video brevi e forme vernacolari, sostenendo che tali narrazioni intervengano nei processi di costruzione della memoria pubblica e dell'identità, rendendo visibile ciò che nelle grammatiche storiche dominanti in Italia è stato istituzionalmente stabilizzato, ridimensionato o lasciato ai margini del discorso pubblico mainstream. Collocando il caso italiano nel quadro più ampio del progetto

imperiale europeo e delle sue persistenti eredità, il contributo mette in relazione il ruolo contemporaneo delle piattaforme digitali con le più lunghe traiettorie di memoria selettiva e marginalizzazione del colonialismo in processi e programmi educativi. Sul piano metodologico, l'articolo si fonda su un'analisi qualitativa di contenuto di quaranta video TikTok e relativi commenti maggiormente indicizzati, finalizzata a ricostruire i repertori interpretativi attraverso cui il nesso tra colonialismo e scuola si articola nel discorso pubblico piattaforma. Due tendenze ricorrenti strutturano questo campo discorsivo conteso: da un lato, una corrente critica che problematizza i silenzi curriculari e la rappresentazione edulcorata della violenza coloniale nell'insegnamento scolastico e nelle istituzioni pubbliche, mettendo così in discussione l'autorità pedagogica del sistema educativo italiano; dall'altro, una persistente lotta simbolica attorno ai confini culturali e storici attraverso cui viene definita l'identità italiana. L'articolo sostiene che le piattaforme, in questo senso, costituiscano arene di contesa mnemonica nelle quali autorità storica, identità nazionale e legittimità educativa possono essere negoziate in tempo reale. Analizzare il modo in cui critica e negazione circolano all'interno della stessa ecologia mediale consente di mostrare come i pubblici piattaforma contribuiscano a ridefinire le interpretazioni del passato coloniale italiano e delle sue implicazioni nel presente.

Parole chiave: educazione, memoria collettiva, identità, colonialismo italiano, platform society.

1. INTRODUCTION

This article investigates how the Italian colonial debate mobilizes short-form platform vernaculars on TikTok to confront, negotiate, and contest what is perceived as the marginalization of Italy in public memory and formal education. In contemporary digital environments, public memory no longer circulates exclusively through institutional infrastructures such as curricula, museums, and commemorative rituals. Platformed publics increasingly function as arenas in which historical narratives are produced, reframed, and legitimized in real time (Hoskins, 2017; van Dijck, 2013; Erll, 2011; Bartoletti, 2011). However, digital contestation and recontextualization do not occur in a vacuum. It intervenes in pre-existing regimes of remembrance through which political communities authorize certain pasts while marginalizing others. As Halbwachs argued, collective memory is not a spontaneous inheritance but a socially organized framework that renders certain narratives intelligible and durable (Halbwachs, 1950/2024). Nora further showed that modern states stabilize identity by crystallizing selective pasts into symbolic 'sites of memory', condensing meaning into authoritative narratives that arrest forgetting and anchor national continuity (Nora, 1984/1989). As Migliorati emphasizes, collective memory is embedded in public and political practices through which groups appropriate and reinterpret the past to act in the present and shape the future (Migliorati, 2012, 2023).

Against this theoretical backdrop, the post-Cold War period witnessed the consolidation of a relatively unified supranational public memory across Europe, grounded in the institutional centrality of Holocaust remembrance and in the condemnation of totalitarian regimes (Judt, 2005; Assmann, 2013; Focardi, 2020; Pisanty, 2012). The institutionalization of Holocaust memory did not dissolve national frameworks; rather, national memory cultures were rearticulated within a shared vocabulary of democracy and rupture, while strategies of omission and selective narration persisted about each country's specific historical responsibilities, particularly concerning collaboration and complicity with Nazi Germany in the persecution and deportation of Jews (Focardi, 2020). In this context, as Pisanty argues, the institutional centrality of the Holocaust effectively contributed to structuring a field of recognition marked by contested memories and hierarchies of legibility, within which other histories of violence, especially colonial violence, remained comparatively less recognized and less institutionally consolidated (Pisanty, 2012).

It is within this institutionalized European memory regime that a structural tension becomes visible: colonialism is constitutive of European modernity (Said, 1978, 1993; Gilroy, 1987, 1993) yet remains marginal in the dominant moral and educational grammars through which Europe narrates itself. This asymmetry is not uniform across Europe. The degree to which colonial histories have entered public memory varies significantly from country to country. However, the Italian case presents a particularly pronounced configuration of delay and selective integration. In Italy, scholarship has shown that colonial history occupies a marginal position in both national narratives and school curricula (Ben-Ghiat & Fuller, 2005; Taddia, 2005). This marginalization is not uncontested. In recent years, decolonial campaigns, anti-racist

This article is the result of a sustained collaboration and ongoing dialogue between the authors. Nevertheless, for the purposes of authorship attribution, Micol Meghnagi was primarily responsible for the Theoretical Background, while Camilla Folena led the drafting of the Findings section. The Introduction, Methodology, Discussion, and Conclusion were jointly conceived, developed, and written by both authors.

mobilizations, and diasporic formations have challenged inherited hierarchies of recognition and foregrounded the colonial genealogy of contemporary inequalities. Education has emerged as a central site of dispute.

School curricula and textbooks are increasingly framed not as neutral repositories of knowledge but as infrastructures of selective stabilization that canonize certain pasts while marginalizing others (Assmann, 2013). In the Italian context, scholars have documented the compression and euphemization of colonial violence within educational narratives (Ben-Ghiat & Fuller, 2005). Media platforms have become a crucial terrain in this contestation. Whereas institutional memory operates through relatively slow infrastructures such as curricula, textbooks, museums, and commemorative rituals, platformed environments accelerate narration and enable the circulation of counter-archives beyond traditional gatekeeping structures (Hoskins, 2017; van Dijck, 2013; Erll, 2011; Bartoletti, 2011). These digital publics function as spaces of counter-archiving and connective action in which historical narratives are reinterpreted, contested, and affectively amplified (Bennett & Segerberg, 2012). Within these environments, colonialism emerges as a contested narrative, and its repercussions over collective identity are structured around both critique and denial: some users denounce curricular marginalization and connect colonial history to racialized continuities in the present, while others minimize or reject colonial responsibility. A recurring empirical pattern in this digital discourse is the explicit critique of school textbooks and curricular framings. Platform public debate, of which the younger generation constitutes a significant segment, stages colonialism as a pedagogical omission and turns the school canon itself into an object of contestation in short-form audiovisual culture. In doing so, they challenge not only specific historical interpretations but also the institutional infrastructures through which colonial memory has been stabilized and transmitted, ultimately critically questioning the formation of 'national' cultural identity. By situating these digital practices within Italian and memory politics, the article analyzes how historical authority and educational legitimacy are renegotiated in platformed publics. The article proceeds as follows. It first develops a theoretical framework that conceptualizes colonialism as a cultural formation within European historiography, situating the Italian case within a configuration marked by delayed mnemonic integration and the persistent mythologization of collective identity through the rhetoric of *Italiani brava gente* (often translated as "Italians, the good people"). It then turns to the contemporary platformed media environment, where contested memories intersect

with questions of pedagogical authority and platform-mediated visibility. Against this backdrop, the study examines how TikTok vernacular practices not only circulate colonial memory but also reconfigure the conditions under which historical knowledge is produced, performed, and recognized. Drawing on a qualitative analysis of 40 videos, the article argues that platforms serve as arenas of mnemonic and pedagogical struggle in which historical authority is redistributed, even as platform affordances privilege rapid, affective sense-making over multilayered reflection. Colonial memory thus emerges less as a representation of the past than as a shared discursive resource through which users negotiate authority, belonging, and the cultural boundaries of Italian identity.

2. THEORETICAL BACKGROUND

2.1 Colonialism as cultural formation: European historiography and the Italian delay

Over the past four decades, European colonial historiography has undergone a profound epistemological transformation. The emergence of postcolonial and cultural studies did not simply expand the empirical archive of imperial history; it fundamentally redefined the analytical status of empire itself (Fanon, 1961/2007; Said, 1978, 1993; Gilroy, 1987). Fanon exposed colonial domination as a regime of psychic, cultural, and epistemic violence that structured subjectivity itself (Fanon, 1961/2007). Said (1993) demonstrated that imperial expansion relied upon systems of representation that naturalized European superiority and rendered colonial rule intelligible and legitimate. Empire, in this account, was sustained not only by military force and economic extraction but by cultural forms, educational practices, literary production, and everyday imaginaries. The incorporation of culture into imperial analysis revealed that colonialism reshaped both colonized and colonizing societies, affecting the formation of collective identity. Colonialism, in this sense, cannot be understood as a peripheral episode of European expansion but rather as a cultural and epistemic formation that shapes national identities, systems of representation, and regimes of knowledge transmission. As Gilroy (1987) points out, European national identities were constituted through imperial circuits of exchange, racial formation, and transnational mobility. On this account, colonialism cannot be adequately conceptualized as a geographically external or temporally bounded episode of overseas administration; rather, it operated as a *longue durée* structure that sedimented racialized imaginaries, cul-

tural hierarchies, and self-understandings within European modernity.

However, historiographical transformation did not unfold evenly across Europe. While in countries such as Britain and France postcolonial perspectives entered academic and public debate earlier, partly as a consequence of prolonged and conflictual decolonization processes, the Italian case followed a different trajectory. Italian historiography long interpreted the empire primarily as a political-administrative experience rather than as a cultural and epistemic formation shaping national identity (Deplano & Pes, 2014). As Calchi Novati (2011) argues through the notion of “failed decolonization”, the absence of a prolonged and publicly visible imperial rupture after 1945 limited collective confrontation with colonial responsibility. In this context, public reflection on Fascism and on Italian complicity in wartime violence, including the persecution of Jews, developed unevenly, contributing to a delayed integration of colonial history into broader cultural and educational frameworks (Focardi, 2020). Only from the late 1990s onward did scholarship begin systematically addressing the cultural afterlives of Italian colonialism and their connections to contemporary racialization and migration regimes. Notably, early critical reinterpretations of Italian colonialism developed significantly within Italian Studies departments in the United Kingdom and the United States, where postcolonial theory and cultural studies were institutionalized earlier, fostering transnational interpretive frameworks that later circulated beyond academia. This historiographical delay is reflected in the ways colonialism entered Italy’s public and collective memory, remaining comparatively weakly institutionalized within educational and commemorative infrastructure.

2.2 *The myth of the Italiani brava gente and colonial innocence in the Italian public memory*

Collective memory, as Halbwachs (1950/2024) argued, is socially framed within institutional structures; historiography, therefore, cannot be reduced to an academic domain alone, but must also be understood as shaping public remembrance and national identity, even as prevailing memory regimes in turn condition its questions, silences, and priorities. In Italy, the marginalization of colonial responsibility cannot be understood without examining the persistence of a powerful cultural myth: the rhetorical figure of the *Italiani brava gente*. As Del Boca points out, the image of Italians as fundamentally humane, tolerant, and moderate did not originate under Fascism. It circulated already in liberal Italy, where colonial expansion was framed as a civiliz-

ing mission carried out with restraint and humanity, implicitly contrasted with the alleged brutality of British or French imperialism. This self-representation acquired renewed political significance during the postwar peace negotiations, when Italian elites attempted to retain colonial possessions by presenting Italian rule as comparatively benign. Although the diplomatic objective failed, the narrative survived in the cultural sphere. This memory echoed Mussolini’s 1936 proclamation of an “Empire of peace” and “civilization” in Ethiopia, and it persisted through gradual processes of revision, selective forgetting, and the displacement of colonial responsibility from the public debate (Labanca, 2002; Del Boca, 2005). The absence of a dramatic and clearly demarcated decolonization moment produced what Del Boca calls a diversification of memory times: without a collective and critical reckoning, colonial memories could survive in fragmented, individualized, and often nostalgic forms. This configuration must be situated within the broader post-1945 memory settlement. Rather than developing a robust public language of responsibility for crimes committed in the colonies or in the persecution of Jews, postwar Italy stabilized a mnemonic equilibrium structured around two moves: the externalization of guilt onto Nazi Germany and the elevation of the Resistance as a unifying moral narrative (Consonni, 2015; Focardi, 2020). Within this framework, Italians appeared primarily as victims, liberators, or rescuers; forms of Italian violence, racial segregation, and concentrationary practices were relegated to the margins of collective consciousness (Ben-Ghiat & Fuller, 2005).

The postwar settlement began to transform in the 1990s. The collapse of the First Republic and the weakening of antifascist political forces destabilized the institutional centrality of the Resistance narrative, while new right-wing coalitions increasingly contested its symbolic authority (Consonni, 2015; Focardi, 2020). Following the institutionalization of Italy’s annual Holocaust Remembrance Day in 2000, Law 92/2004 introduced a National Day of Remembrance dedicated to the Foibe killings and the Istrian and Dalmatian exodus. Its approval unfolded within a political climate increasingly marked by calls for mnemonic “rebalancing” and by a renewed emphasis on Italian victimhood in the public sphere. While Holocaust remembrance was rapidly infrastructured, especially through educational programs, Italian responsibilities, including state complicity and antisemitic legislation, were often less systematically confronted (Consonni, 2015). It is precisely in this context of expanded commemorative institutionalization that the absence of colonial recognition becomes particularly visible. The two parliamentary initiatives introduced in 2006, one

proposing a national day for victims of the Italian colonial occupation and another for victims of Fascism, did not result in durable legislation, and the subsequent political realignment after 2008 further narrowed the space for such reforms (Focardi, 2020).

2.3 Platformization, pedagogical authority, and negotiation of memory

As scholarship on public memory has emphasized, legislative acts, ministerial directives, and state-sponsored commemorative frameworks are key mechanisms through which societies stabilize curricular priorities and distribute pedagogical attention (Halbwachs, 1950/2024; Nora, 1984/1989; Migliorati, 2023; Assmann, 2013). What is formalized in commemorative calendars and translated into public policy tends to acquire infrastructural reinforcement within the school system, through guidelines, funding streams, teacher training, and routinized pedagogical formats. By contrast, historical fields lacking comparable legislative anchoring remain largely contingent on local experimentation and individual initiative, producing uneven and often fragile forms of transmission. In the Italian case, the weak institutionalization of colonial memory is mirrored in its educational treatment. Foundational works on Italian colonialism have long demonstrated the persistence of the myth of colonial benevolence and the structural marginalization of imperial violence in national narrative (Del Boca, 2005; Ben-Ghiat & Fuller, 2005; Andall & Duncan, 2005). Studies on the representation of colonialism in Italian textbooks have repeatedly documented patterns of compression, euphemization, and narrative displacement, with colonial violence and racial regimes reframed as secondary episodes of overseas administration, detached from longer continuities of racism, citizenship regimes, and postcolonial inequalities (Taddia, 2005; Jedlowski, 2009; Leone, 2023). At the same time, colonial memory has not been absent from the public sphere. Especially from the 2010s onward, grassroots mobilizations, including second and third-generation Italians with familial ties to former colonies, anti-racist collectives, and networks influenced by transnational movements – such as Black Lives Matter – have increasingly contested the persistence of colonial silences and the symbolic economy of institutional commemoration (Pesarini & Panico, 2021). Public controversies over monuments, street names, museum displays, and school materials have reopened debates about imperial responsibility and historical continuity (Grechi, 2021; Wurzer, 2023). However, these bottom-up pressures have not, so

far, translated into durable legislative recognition or systematic curricular reform.

Crucially, these struggles increasingly unfold within platformed media infrastructures. From a mediatization perspective, memory cannot be understood independently from the media environments through which it circulates and acquires social relevance (Boccia Artieri, 2025). Platform-based publics act as arenas of informal civic education, where, especially among younger generations, counter-archives are produced, vernacular historiographies circulate, and interpretive frames are articulated that exceed the boundaries of formal schooling (Hoskins, 2017; Erll, 2011; van Dijck, 2013). As Bartoletti illustrates, memory in digital environments should be understood as a practice that emerges through situated interaction, in which remembering processes are produced within communicative exchanges rather than through institutional transmission (2011). In digital environments, expertise is not exclusively tied to institutional certification but is frequently performed through aesthetic cues, narrative coherence, affective intensity, and community recognition (van Dijck, 2013; Hoskins, 2017). In this sense, mnemonic visibility is shaped not only by participation but by algorithmic selection processes that privilege engagement, circulation, and connectivity. The emergence of creators who self-identify as “prof.” or “dr.” alongside explicitly activist accounts signals a reconfiguration of epistemic hierarchies: authority becomes visible, contestable, and engagement-dependent rather than solely grounded in institutional mandate. Platform affordances further hybridize temporal and contextual conditions of remembrance, enabling the segmentation and decontextualization of past fragments, which are continuously recombined through algorithmic exposure. Comment sections transform individual videos into deliberative arenas in which users validate, reinterpret, challenge, or radicalize historical claims. This dynamic intensifies the conflictual character of historical discourse: critique and denial coexist within the same media ecology, amplified by algorithmic logics that privilege affect, moral polarization, and narrative clarity (van Dijck, 2013). Considering this, digital memory practices emerge through ongoing negotiation between users, platform logics, and algorithmic mediation (Boccia Artieri & Bartoletti, 2023). As Zurovac (2023) suggests through the analysis of TikTok memory practices, platform environments enable processes of reframing and reinterpretation in which historical narratives are continuously rearticulated through participatory and vernacular forms of engagement. Platforms can therefore be understood as connective mnemonic infrastructures that influence and reorganize visibility and affective resonance, shaping how colonial history

becomes narratable, pedagogically consequential, and politically charged. In contexts where formal curricular anchoring remains weak, these environments become privileged arenas for disputes over recognition, responsibility, and historical legitimacy.

3. METHODOLOGY

The study adopts a qualitative research design to explore how colonial histories and memories intersect with education and are negotiated within platformed environments through short-form video content. The analysis focuses on TikTok videos addressing Italian colonialism and related debates, through two main research questions:

RQ1 – How is Italian colonial history narrated within TikTok videos addressing education and historical memory?

RQ2 – How do platform vernacular practices frame pedagogical authority and historical and colonial Italian memory?

Following a qualitative approach to digital content analysis and recent platform-centered research (Vázquez-Herrero & Neigreira Rey, 2025), TikTok was explored not merely as a repository of content but as a mediated environment whose affordances shape both production and interpretation (Schellewald, 2021; Zurovac, 2025).

Videos were identified through keyword-based searches in the platform's search engine. The initial exploratory queries combined Italian terms related to colonial history and education: “colonialismo” AND “scuola”. Keywords served as entry points into the platform environment, expanding hashtag navigation when relevant to the study object. Towards debates addressing Italian colonial history, the trope of *Italiani brava gente* emerged and finally led to content discussing the cultural collective Italian identity. This procedure mimics the platform's inhabitation, through which content discovery unfolds on TikTok (Zurovac et al., 2023). The dataset was structured around the following analytical fields (Table 1), collecting structural data such as date, URL, username, accounts, languages, and keywords, as well as discursive data such as title, captions, comments, and video transcripts.

Data collection was conducted through manual browser access. Textual transcriptions of spoken content and the first six visible comments for each post were included in the dataset to support qualitative analysis at both the discursive and narrative levels. To ensure an intersubjective and shared interpretation of each campaign, the individual analyses conducted by different authors were cross-checked through a joint visual analysis of the video contents. The coding process identified at least three main communicative functions in the materials analyzed: informative and in-depth, awareness-raising/activist, and entertainment-oriented. In several cases, these functions were not mutually exclusive, and the analytical categories that emerged will be further developed in the findings and discussion sections. Rather than conducting a systematic qualitative coding of user comments, posts and comments were analyzed together to capture the broader communicative environment, thus enriching the analysis of audience perspectives and interactional and negotiation dynamics.

The final corpus consists of 40 TikTok videos and 178 comments. Rather than aiming for statistical representativeness, the selection followed a qualitative logic oriented toward exploratory interpretive depth. For the analysis, preliminary categories were independently tested on a shared subset of videos. Coding decisions were then discussed collectively, allowing disagreements to be negotiated and category definitions progressively refined. An inductive coding process was then developed through repeated observation of the material, following the logic of interpretative agreement, in which analytical coherence was achieved through discussion, comparison of interpretations, and continuous adjustment of the analytical category. The codebook was progressively constructed to classify both dominant discursive frames and secondary sub-codes, capturing overlaps between categories and discursive configurations. Given the multilingual nature of the corpus, video excerpts and comments originally produced in Italian, English, French, or Portuguese were translated into English by the authors to ensure analytical consistency across the corpus. Translations aimed to preserve semantic meaning and pragmatic tone rather than literal equivalence, especially in cases involving satire, slang, or culturally specific references.

Table 1. Dataset systematization.

keyword	video data	account	captions	video transcript	URL	comments 1-6	languages	code
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4. FINDINGS

The analysis of forty TikTok videos addressing the intersection of colonialism and education reveals not a homogeneous narrative field but a fragmented and contested mnemonic environment in which popular culture, historical knowledge, and political positioning converge and remix. Rather than functioning merely as a channel for historical dissemination, the platform operates as a vernacular space where colonial memories are actively negotiated through multiple discursive registers, including pedagogical explanation, satirical performance, imperial or defensive stances, and decolonial critique. Across the dataset, colonial history emerges as an ongoing problem of recognition, frequently articulated through references to generational transmission and perceived curricular omissions. Meaning-making processes do not reside solely in the videos themselves: the analysis of user comments shows how audiences co-participate in framing interpretation, transforming individual contents into interactive arenas where national identity, historical authority, and moral responsibility are collectively debated. The following sections present the main empirical findings, moving from a mapping of colonial issues and emergent frames to the negotiation of Italian colonial memory, and finally to the re-scaling of these discussions within a broader global discursive ecology.

4.1 Mapping the field: the colonial and identitarian issues

Across the selected corpus, colonial history emerges as a multilayered object of reflection and negotiation that intertwines a wide range of geographical references and discursive entry points. The TikTok videos primarily address Italian colonialism in Libya, Ethiopia, Eritrea, and Somalia, both highlighting the occupation and violence enacted by the colonizer and the cultural and physical resistance of the colonized populations. A smaller but symbolically significant set of videos proposes a counter-frame of the Southern Question as a form of internal colonialism in Italian national history and a debate over the authority to define Italian culture and identity. The dataset also involves or cites many shades of European colonialism, including Belgium, the British and French Empires, US imperialism, and the Puerto Rico issue. The convergence of colonial topics and identity issues occurs across diverse formats, including historical explanations, musical performances, satirical sketches, and commentary on contemporary discourses. These insights indicate that colonial memories tend to circulate across social media platforms such as TikTok through heterogeneous communicative practices rather

than through standardized historical narration, functioning – on a wider level – as a pivotal entry point for restructuring and redistributing epistemic authority over history and identity. First, a brief overview of the dataset's linguistic composition appears highly relevant, given the Italian keywords and hashtags on which the corpus harvesting is grounded. Despite this, only 55% of the corpus is Italian-based, while 40% is in English. Additionally, we found a marginal but interesting presence of French and Portuguese content. Looking specifically at the qualitative coding process, three dominant categories structure the exploratory corpus.

- Decolonial claim-making: A first configuration consists of what we named “decolonial claim-making”, a set of contents that blends a popularizing outlook with memory activism. Here, creators explicitly challenge national narratives, framing colonialism as an unresolved moral, ethical, and political issue, and denouncing educational curricular omissions. Within this segment of the corpus, decolonial claim-making appears to branch into both academically oriented and pop-culture versions.
- Educational contents: A second configuration focuses on educational content that adopts a quasi-pedagogical register, often produced by accounts that name themselves as “prof.” and/or “dr.” This segment aims at clarifying historical events, frequently reproducing the format of simplified historical explanations or even recording sections of real-time lectures in high-school contexts.

A recurrent distinction emerges in how decolonial claim-making and educational content position historical knowledge differently. Educational videos more frequently adopt explanatory registers and reference historical contextualization; decolonial claim-making tends to foreground moral positioning and denunciatory rhetoric, with limited explicit engagement with historiographical plurality, theoretical grounding, or source citation. In this configuration, history is mobilized less as an object of observation and problematization and more as an ethical-political dispositif through which identitarian counter-narratives are articulated. However, it is important to note that during coding, the authors acknowledged the complexity and hybridity of these materials. Categories are therefore not completely mutually exclusive and may overlap if secondary sub-codes are considered.

- Satirical contents: A third group of videos employs irony, humor, and parody to rework shared cultural memories and identities, with the potential goal of

destabilizing mnemonic rhetorics. The satirical element is often linked to satirizing the school context, where colonial history is under-narrated or obscured.

A common element in all three dominant categories across the corpus is the re-enactment of institutional pedagogy itself, albeit in different registers – activist, pedagogical, or satirical. The figure of the teacher is mobilized as a recognizable discursive device. Creators frequently stage classroom settings, adopt pedagogical tones, or explicitly position themselves as correctors of school knowledge, while users' comments often refer back to personal educational experiences. These recurring configurations indicate that colonial history is often discussed through references to school-based learning environments, where educational authority becomes an explicit object of negotiation within platform interactions.

Alongside the dominant categories, smaller yet relevant conflictual configurations also emerge. A limited number of videos mobilize religious references, particularly centered on Islam and Judaism, through rhetorical discourses aimed at politicizing religious identity and polarizing publics. Reframing colonial history through contemporary geopolitical and ethnoreligious struggles often becomes the stage to explicit racial tendencies that trigger islamophobia and antisemitism. Other videos articulate Eurocentric or imperial-defensive interpretations that attempt to relativize colonial violence, often starting from the reaffirmation of narratives of Italian benevolence. Table 2 summarizes the quali-quantitative findings outlined above.

4.2 The case of Italiani brava gente

Across eurocentric, defensive, satirical, and decolonial narratives, the recurrent issue of *Italiani brava gente* emerges as a resonant reference. As previously discussed,

within the Italian memorial regime, the benevolence trait of Italian colonialism has functioned as a mechanism for symbolic stabilization and the rewriting of the past, shaping how national colonial history and collective identity have been remembered and displaced. Interestingly, on TikTok, this trope appears as a flexible and adaptive narrative, showing how, within these vernacular practices, Italian memory and identity are reworked through recurring platform formats that remain open to both confirmation and disputation of the trope.

The *Italiani brava gente* myth emerges prominently across a segment of the corpus (N=6), but appears particularly through a cluster of content produced around 2022 by Alo Official [Alessandro Casini] (N=5). The artist and content creator mobilizes this national discursive claim through a set of short satirical performances often delivered via musical productions. Colonial memory and the structure of Italian benevolence identity, described as a population with clumsy traits – which ultimately never embraced or perpetrated the levels of violence seen in other European populations and armies – is introduced not through an in-depth explanation, but through ironic interaction aimed at stimulating reflection. Firstly, the videos frequently stage a satirical version of a school environment. Here, the historical narrative is repeatedly presented by a teacher through the lens of Italian colonialism, casting it as a source of infrastructural achievement. At the same time, students challenge this account by invoking colonial violence and controversial historical figures. Through exaggeration and repetition, the performance highlights the tension between institutional narratives and contested decolonial historical interpretations:

Teacher: Yes, regarding Italian colonialism, Italians built many roads and infrastructures in Ethiopia for the local populations

Student: What are you saying? Didn't they kill many people with weapons?

Table 2. coding distribution for categories and languages.

Categories	It	En	Fr	Pt	Tot	%
Decolonial memory activism	5	7	1	0	13	32.5%
Educational content	7	4	0	1	12	30%
Satirical content	5	2	0	0	7	17.5%
Eurocentric-Imperial defense	1	1	0	0	2	5%
Religious discourse	2	0	0	0	2	5%
Promotional content	0	2	0	0	2	5%
Event-based content	1	0	0	0	1	2.5%
War and Military Discourse	1	0	0	0	1	2.5%
Tot	22	16	1	1	40	100%
%	55.0%	40.0%	2.5%	2.5%	100%	

Teacher: “Roads, infrastructures for the inhabitants – roads. Here is what the textbook says, roads and infrastructures. Yes... That’s what it says (V8)

On this occasion, the artist-creator explicitly refers in the comment section to *Italiani brava gente* by Del Boca, recommending the book to a user who asked for references. Considering this contested and national narrative, blended with the pop culture inhabiting the platform, emerges the production of the song *Italiani brava gente* by Alo Official, which transforms historical debate into relatable and shareable content. The videos differ in format – from TikTok choreography to ironic classroom staging or close-up shots of the artist – but are all linked by his pop-urban musical piece, through which satire becomes embedded in platform-specific communicative practices. The lyrics present a sharp counter-narrative to the *Italiani brava gente* myth, exposing contradictions within institutional representations of Italian historical identity by blending colonial references, war involvement, popular cultural figures, major Italian singers, and mafia history.

Siamo stati in albergo
Abbiamo fatto danni
Andati in Etiopia
Abbiamo fatto danni
Pure in Afghanistan
A fare danni
Facciamo danni
160 anni
[...]
E c’abbiamo avuto Pino
E c’abbiamo avuto Mina
Italiani brava gente
Tutta gente canterina
E c’abbiamo avuto Rino
Abbiamo avuto Totò Riina
Italiani brava gente
Tutta gente per benino

User comments further show how the *Italiani brava gente* trope becomes an object of active discussion and symbolic struggle rather than shared consensus. Some viewers align with the critical frame, linking colonial history to broader reflections on Italian identity and racial self-perception, as one user notes that to gain “a place in the sun, Italy changed how we were perceived – before Fascism it was not taken for granted that Italian meant white” (V6). Others explicitly reassert benevolent narratives, reproducing the idea that “having said that, we still brought progress to them” (V36). Several comments reconnect the performances to personal educational experiences, for instance, stating “my history

teacher, fortunately, was very objective about this topic” (V8). At the same time, some users misinterpret the hybrid satirical register, directly challenging the creator: “The fact that you talk about Afghanistan as colonialism shows how little you know” (V9). Alongside debate, affective engagement also emerges through reactions such as “brilliant” (V9) and “you are my spirit guide” (V35), highlighting recognition and emotional participation typical of platform interaction. Taken together, these responses show how the videos open a space where competing interpretations of national memory and identity coexist and collide.

4.3 From the Southern Question as internal colonialism

A limited but qualitatively significant cluster of content extends colonial discussion beyond the overseas empire and into Italian issues, introducing the Southern Question as a possible case of internal colonialism. Although numerically limited within the corpus, these videos generate disproportionately extensive interaction and discursive expansion, shifting the debate from colonial history toward broader negotiations of identity and belonging. Notably, this debate emerges primarily in non-native language content (namely English and French), where Italian history is reframed through transnational vocabularies of race and domination. One creator – defining herself as an Italian descendant – explicitly links migration, colonial hierarchies, and current geopolitical issues to the Southern Question: “Why do you think my family left Italy to come here? (...) You support Palestine, but you deny the colonization of Sicily and the South” (V22). The video continues by describing post-unification Italy as a system of extraction and racialization, claiming that Southerners were stigmatized as “melanzane, eggplants, because they weren’t white enough” (V22), and that an asymmetrical order comparable to other colonial “caste hierarchies” was established.

This interpretation immediately generates negotiation. Two out of six comments analyzed suggest that “most southerners are closely related to Greeks”. An Italian creator responds in English, rejecting the colonial analogy and emphasizing participation in the unification process: “there was no colonial war, and there was no white man from the North against a darker one from the South (...) thousands of Sicilians joined Garibaldi” (V25). Some users explicitly accept his perspective, arguing that calling the unification of Italy colonialism “is at best a misrepresentation”. Others, partially deny the critics of colonial framing while mitigating its implications, “denying the colonial connotations of the subsequent process of ‘Piedmontization’ is problematic”. On

this occasion, the creator himself negotiates his point of view, slightly contradicting his initial claim, concurrently warning against what he labels as revisionist narratives: “You are absolutely right that Piedmontization had authoritarian and colonial traits. The South was more assimilated than integrated (...), but history should not be used as propaganda”.

4.4 ...to disputed Italian identity

As debates move away from historical events themselves, questions of authority over defining Italian culture and identity increasingly come to the foreground. Discussions – that keep being linguistically transnational – gradually shift the focus on contemporary issues such as citizenship by descent and the definition of Italian culture itself, revealing how colonial discourse becomes intertwined with present negotiations over who is nowadays Italian and if an Italian-specific cultural identity exists. For instance, a video addressing recent restrictions on citizenship acquisition illustrates how these debates carry within themselves implicit hierarchies of value and power asymmetries. Framed as an explanatory intervention, the creator, who is selling an assistance service for citizenship acquisition in the US, argues that policy changes were introduced to prevent “millions and millions” of descendants “flooding the system and not investing anything in the country” (V38). Interestingly, the creator provides the following explanation, simultaneously distinguishing North American descendants’ “proximity to their ancestors” from other applicants.

The Italian government realized that Italian Argentinians, who were very far removed from their Italian ancestors, were going through the Italian citizenship process and moving to Spain. The Italian Brazilians, who were very far removed from their Italian ancestor, were acquiring their Italian citizenship and moving to Portugal. (V38)

The argument culminates in the statement “to put it frankly, we’re the ones with the money”, explicitly linking cultural legitimacy to economic capital. Although presented as an explanatory commentary, the video promotes consultancy services, unveiling how platformed discussions over histories, memories, and identities keep intersecting with market-oriented dynamics. User responses further complicate the controversial stance: “not even Italians born and raised in Italy are staying there”, shifting the perspective toward structurally deficient national conditions.

A parallel dispute emerges in a video questioning whether Italian culture exists as a coherent entity. The

creator initially performs an intentionally provocative claim – that Italian culture does not exist because it is historically hybrid – only to subsequently reveal the argument as deliberately essentialist, using Italy as an example to expose similar contradictions affecting the debate over American culture. Users’ discussion focuses on reaffirming essentialist or defensive positions, ranging from claims that “Italian pasta isn’t even real Italian” (V39) to others react affectively, stating “I feel offended, and I am not even Italian”, until counter-assertions defending Italian cultural borders “the fact that you can clearly distinguish Italian culture from others means that it exists and is well defined”. Rather than following the proposed reversal of argument, interactions tend to re-anchor the discussion in immediate identity claims, thereby misreading the complexity of the creator’s reflection.

5. DISCUSSIONS

The findings suggest that the platformed negotiation of colonial memory on TikTok concerns not only how colonial memory circulates, but how it emerges through pedagogical performance. In this process, school-based pedagogical authority is reconfigured and publicly challenged. From this perspective, the colonial historical debate is mediated through school references and satirical portrayals of teachers who fail in the pedagogical mission of problematizing history, flattening knowledge and its dissemination into an acritical transmission of historical events structured within hegemonic approaches to public memory, which consequently invisibilize subaltern and colonized positions. When classroom dynamics function as a cultural script, the platformed arena – which increasingly challenges institutional expertise across domains of knowledge (Boccia Artieri, 2025) – operates, together with its algorithmic infrastructure and grassroots publics, as a re-enactment of educational processes. Educational authority is not displaced but performed under new communicative conditions. At the same time, TikTok findings show that colonial memorial debates remain anchored in institutional education even when criticizing it. From a postcolonial perspective that embeds cultural formation within hierarchical systems of knowledge transmission (Said, 1978, 1993; Gilroy, 1993), disputes over the past unfold digitally as disputes over who is entitled to teach it. The emerging question raised by this exploratory study, therefore, concerns whether and to what extent a platform such as TikTok signals a shift in pedagogical and epistemic authority, in which colonial memory is no longer explained in classroom lectures but staged through performative practices.

This dynamic becomes visible through three recurring pedagogical figures that organize vernacular negotiations of the past. The institutional teacher appears to be associated with omission and simplification, often evoked through references to textbooks that reproduce misrepresentations and identitarian narratives, as well as curricular silences surrounding colonial violence (Del Boca, 2005; Ben-Ghiat & Fuller, 2005). The platform educator – including self-branded “prof.” and “dr.” accounts and explainer creators – performs epistemic legitimacy through contextualization, citation, and corrective explanation: memory emerging through communicative practice rather than institutional transmission alone. Lastly, the counter-teacher emerges through ironic and performative inversions, as exemplified by Alo’s school parody, in which students symbolically correct institutional knowledge through alternative experiential and cultural positioning. These figures do not simply describe recurring roles but articulate distinct modes through which epistemic authority is claimed, contested, and redistributed. Rather than signaling the disappearance of schooling, these configurations demonstrate its persistence as a normative epistemic reference: even in critique, institutional pedagogy remains the horizon through which historical truth is evaluated.

Within the platformized media ecosystem, collective and grassroots learning practices operate as informal sites of civic education (Hoskins, 2017; Erll, 2011), enabling the circulation of marginalized or subaltern versions of colonial histories that remain weakly institutionalized within Italian curricula (Focardi, 2020; Deplano & Pes, 2014). At the same time, platformed publics engage with vernacular content formats that privilege brevity, affective resonance, and recognizability (Abidin, 2025; Papacharissi, 2015), favoring forms of knowledge performance over extended, theoretically grounded explanations. Historical learning, therefore, occurs less through linear exposition than through recognition, alignment, and affective participation.

The reception of Alo’s ironic reference to Afghanistan, as well as videos provocatively questioning cultural essentialism, illustrates a structural tension within platformed pedagogy. When creators introduce layered or metadiscursive critiques, collective interpretation frequently shifts toward literal and simplified readings. Complex irony or reflexive commentary tends to be re-anchored within immediate identity boundaries, suggesting how algorithmically mediated attention reshapes the interpretation of cognitive complexity. Platformed pedagogy, therefore, operates within a paradox: it opens spaces for bottom-up epistemic correction and the emergence of silenced memories while simultaneously con-

straining abstraction through repetition and context collapse (Marwick & boyd, 2011), driven by visibility-oriented circulation. Simplification does not originate exclusively within institutional education but is reproduced across communicative environments: school simplifies, satire simplifies, and the platform re-simplifies through its attention economy. Ambiguity is stabilized through collective interpretation, transforming reflexive critique into identity positioning.

As pedagogical disputes intensify, they progressively shift from historical correction toward boundary-making around identity and belonging. The findings redirect attention toward a broader transformation in how colonial memory operates at a global scale. While the study initially examines how TikTok may intervene to correct historical narratives, empirical evidence shows a shift toward disputes over belonging, whiteness, and national identity, particularly in multilingual exchanges. As discourse moves beyond Italian-language contexts, colonial history becomes less an object of clarification and more a resource for negotiating inclusion within transnational publics. This confirms how digital memory operates within connective mnemonic environments (Hoskins, 2017), where local pasts are continuously reframed through globally circulating interpretive frameworks.

What this study shows, therefore, is that platform environments do not merely host vernacular memory practices but actively reorganize the pedagogical conditions under which historical authority is produced and recognized. By identifying recurring pedagogical figures and demonstrating how users collectively reenact, contest, and redistribute educational authority, the article advances an understanding of platformed content production as a form of platformized pedagogy – a process through which the authority to interpret national history shifts from institutional certification toward performative and participatory legitimacy. What is ultimately disputed is not only the meaning of colonial history but the authority to interpret and teach national memory itself. The case of Italian colonial memory illuminates a broader transformation within contemporary media ecologies: historical knowledge increasingly emerges at the intersection of institutional absence and platform visibility, where authority is no longer assumed through institutional position but continuously enacted through participation.

6. CONCLUSION

This article has argued that TikTok should be approached not only as a space where colonial memory circulates, but as a platformed pedagogical infrastruc-

ture in which the authority to narrate the past is publicly produced, tested, and disputed. As an exploratory qualitative study, it does not aim to generalize statistically; rather, it offers an empirically grounded mapping of how colonialism becomes narratable through recurring references to schooling and through interactive reception in comment sections, where historical claims are validated, challenged, or reoriented. This emphasizes how the current struggle over Italian colonial memory is simultaneously a struggle over educational legitimacy: what is at stake is not merely “what happened”, but who is entitled to teach it and under which criteria of credibility.

Future research should extend this analysis comparatively across European contexts to test whether “platformized pedagogy” and the school-centered framing of colonial memory travel beyond the Italian case, and how they vary under different colonial histories (i.e., British, French, Belgian, German, Portuguese) and different trajectories of decolonization and public reckoning. In addition, further work should examine more directly the relationship between colonial memory and racialization: when, if, how, and by whom colonial pasts are connected to contemporary racism, migration, citizenship, and whiteness, and when they are actively disconnected or neutralized through denial, euphemization, or “benevolent empire” narratives. This would strengthen the link between platform vernaculars and the cultural-studies insight that colonialism operates as a long *durée* cultural formation shaping European identity.

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Lettura dialogica e lettura digitale nei servizi 0-6: conoscenze, disposizioni e percezioni degli educatori e degli insegnanti della scuola dell'infanzia

Traditional and digital dialogic reading in 0-6 services: knowledge, attitudes and perceptions of early childhood educators and teachers

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Abstract. Dialogic reading is a well-established practice in educational services for children aged 0-6, associated with benefits for children's linguistic, cognitive and emotional development. The spread of digital devices has introduced new ways of digitally mediated dialogic reading, making it necessary to explore dispositions, competences and attitudes of early childhood professionals. This exploratory study involved 36 educators and teachers and adopted a mixed-method approach to investigate the use of dialogic reading, perceptions of its effects on child development, representations and skills related to the use of digital picture books in early childhood education. The results indicate frequent use of dialogic reading and a generally positive assessment of its effects. Greater digital skills and more positive professional attitudes are associated with a greater willingness to integrate digital technology in an educational and inclusive way. Qualitative analysis highlights ambivalent positions, with perceived benefits and fears related to early exposure. Overall, digital dialogic reading emerges as a potential resource when supported by pedagogical intent and targeted training.

Keywords: digital dialogic reading, dialogic reading, early childhood education, qualitative study, teachers and educators.

Riassunto. La lettura dialogica è una pratica consolidata nei servizi educativi per bambini di età compresa tra 0 e 6 anni, associata a benefici per lo sviluppo linguistico, cognitivo ed emotivo. La crescente diffusione dei dispositivi digitali ha introdotto nuove modalità di lettura dialogica mediata dal digitale, rendendo necessario approfondire disposizioni, competenze e atteggiamenti degli operatori della prima infanzia. Questo studio esplorativo ha coinvolto 36 educatori e insegnanti e ha adottato un approccio

metodologico misto per indagare l'uso della lettura dialogica, le percezioni dei suoi effetti sullo sviluppo del bambino, nonché le rappresentazioni e le competenze relative all'utilizzo dei libri illustrati digitali nei contesti educativi della prima infanzia. I risultati indicano un uso frequente della lettura dialogica e una valutazione complessivamente positiva dei suoi effetti. Maggiori competenze digitali e atteggiamenti professionali più favorevoli risultano associati a una maggiore disponibilità a integrare la tecnologia digitale in modo educativo e inclusivo. L'analisi qualitativa evidenzia posizioni ambivalenti, caratterizzate sia da benefici percepiti sia da timori legati all'esposizione precoce. Nel complesso, la lettura dialogica digitale emerge come una risorsa potenziale, quando sostenuta da un'intenzionalità pedagogica e da percorsi di formazione mirati.

Parole chiave: lettura dialogica digitale, lettura dialogica, educazione della prima infanzia, studio quali-quantitativo, insegnanti e educatori.

1. INTRODUZIONE

La lettura dialogica viene descritta per la prima volta alla fine degli anni Ottanta da Whitehurst e colleghi (1988) come una modalità di lettura condivisa volta a favorire l'acquisizione del linguaggio attraverso l'uso guidato di libri illustrati, con particolare attenzione al coinvolgimento attivo del bambino e al ruolo dell'adulto come supporto linguistico contingente. Secondo il modello originariamente proposto da Whitehurst e colleghi (1988), la lettura dialogica si fonda su tre componenti centrali. La prima riguarda l'impiego di tecniche pensate per stimolare la partecipazione attiva del bambino e favorire l'uso del linguaggio. La seconda consiste nel fornire feedback al bambino per aiutarlo a consolidare forme linguistiche appropriate. La terza prevede un adattamento graduale dello stile di lettura da parte dell'adulto, calibrato sul grado di sviluppo del bambino in termini di competenze linguistiche.

Nella lettura dialogica l'adulto legge con il bambino e non per lui, prestando attenzione alle risposte del piccolo e promuovendo un'interazione bidirezionale che favorisce l'apprendimento sia esplicito che implicito (Panza, 2015; Whitehurst et al., 1988). Un adulto presente, attivo e partecipe arricchisce il processo e favorisce lo sviluppo dell'alfabetizzazione emergente e delle competenze linguistiche precoci (Weadman et al., 2023).

In un recente studio Murray e colleghi (2022) descrivono la lettura dialogica come un momento e uno spazio intersoggettivo privilegiato, un contesto intimo e strutturato di interazioni specifiche, in cui i tre attori (adulto, bambino e libro) formano una triade funzionale allo sviluppo del bambino (Cárdenas et al., 2020). Nella lettura dialogica, infatti, l'adulto guida l'interazione sostenendo la comprensione e il coinvolgimento del bambino, il bambino porta le sue competenze, la curiosità e le esperienze emotive, mentre il libro offre la cornice narrativa ed emotiva dello scambio interattivo (Schapira & Grazzani, 2025). Diversi studi, inoltre, evidenziano come la lettura dialogica sia associata a un miglioramento nelle capacità di comprensio-

ne, nello sviluppo socio-cognitivo e a esiti cognitivi positivi nel tempo: incremento del quoziente intellettivo, vocabolario ampliato e competenze di lettura e comprensione più elevate (Aram et al., 2013; Dowdall et al., 2020).

Accanto alla pratica della lettura dialogica con l'utilizzazione di libri per l'infanzia e di albi illustrati negli ultimi anni si registra un crescente utilizzo di strumenti digitali, come albi illustrati digitali o libri interattivi (Liang et al., 2025). Diversi sono gli studi che ne evidenziano il potenziale nel migliorare la comprensione narrativa e l'acquisizione di vocabolario nei bambini in età prescolare (Liang et al., 2025). Nella lettura dialogica mediata da dispositivi digitali, l'interazione adulto-bambino-libro si realizza attraverso ebook e app narrative che combinano testo, immagini in movimento e suoni. Alcuni studi mostrano che specifiche scelte di design, come animazioni congruenti con la trama, possono stimolare l'interesse dei più piccoli (Li et al., 2023). Inoltre, gli ebook possono sostenere la comprensione della storia in misura paragonabile ai libri cartacei, soprattutto se inseriti in contesti di lettura condivisa in cui l'adulto mantiene un ruolo attivo nel guidare l'attenzione del bambino e nel supportare l'elaborazione del contenuto narrativo (Bus et al., 2020). In questo senso, il digitale non sostituisce il libro cartaceo ma si configura come una risorsa complementare che amplia le opportunità narrative ed educative se utilizzata con intenzionalità pedagogica.

In un contesto in cui i bambini entrano in contatto con le tecnologie digitali fin dai primi anni di vita e tali strumenti sono sempre più presenti nelle routine familiari (UNICEF, 2025) appare necessario promuovere fin dalla prima infanzia competenze di alfabetizzazione digitale che permettano ai bambini di utilizzare i media in modo critico, consapevole e creativo (UNESCO, 2021). In questa prospettiva, la lettura dialogica in digitale potrebbe rappresentare uno strumento utile per incrementare sia l'alfabetizzazione digitale sia le competenze linguistiche ed emotivo-relazionali dei bambini, integrando le caratteristiche interattive dei dispositivi con i principi della lettura condivisa.

Rispetto ai nuovi scenari della lettura dialogica in digitale i professionisti dei servizi educativi rivestono un ruolo cruciale poiché rappresentano veri e propri agenti del cambiamento (UNESCO, 2021). Le loro disposizioni, conoscenze, atteggiamenti e competenze digitali possono infatti influenzare il modo in cui la lettura dialogica viene proposta e resa accessibile ai bambini (Neumann, 2020; Runge et al., 2023).

Se da un lato la letteratura ha documentato in modo estensivo gli effetti della lettura dialogica sullo sviluppo dei diversi domini del bambino (Dowdall et al., 2020; Schapira & Grazzani, 2025), dall'altro, risultano meno esplorate le disposizioni dei professionisti ad adottare tale approccio. Rimane inoltre poco indagato come gli educatori interpretino le trasformazioni tecnologiche in atto, quale valore attribuiscono agli strumenti digitali e in che modo ritengano possibile integrare libri cartacei e albi illustrati digitali nelle pratiche quotidiane.

Studi osservativi mostrano che, durante la lettura condivisa con app narrative, gli insegnanti modificano il proprio stile di scaffolding, aumentando interventi di tipo affettivo e tecnico rispetto alla lettura con libro cartaceo, a conferma del fatto che il supporto educativo richiesto dal mezzo digitale è qualitativamente diverso e dipende dalla competenza e dalla sensibilità dell'adulto (Neumann, 2020).

La letteratura sull'integrazione delle tecnologie in didattica, infatti, evidenzia che le percezioni degli insegnanti rappresentano un predittore rilevante dell'uso educativo del digitale, insieme alla fiducia percepita e al supporto disponibile nell'impiego degli strumenti tecnologici (Runge et al., 2023).

Uno sguardo al panorama italiano mostra come la ricerca sulle rappresentazioni e sulle pratiche degli educatori e degli insegnanti della scuola dell'infanzia rispetto alla lettura dialogica tradizionale e digitale sia ancora in fase iniziale (Baroni & Mazzini, 2023; Panza, 2015), sebbene il tema dell'integrazione della tecnologia in ambito didattico stia emergendo anche nel nostro Paese (Mittiga, 2018). Nel complesso, tuttavia, la letteratura rimane frammentaria: sono ancora pochi gli studi volti a esplorare in modo sistematico come i professionisti valutino l'adozione della lettura dialogica, e ancor più scarsi quelli che indagano il suo uso in forme digitali o ibride nella routine educativa, soprattutto nella fascia 0-6 anni.

Alla luce della letteratura fin qui condivisa riteniamo interessante esplorare le conoscenze sulle disposizioni professionali verso la lettura dialogica e verso la sua declinazione digitale negli educatori ed educatrici dei servizi 0-3 e negli insegnanti della scuola dell'infanzia.

Più nello specifico, il presente studio si propone di:

1. rilevare le conoscenze dei professionisti dei servizi socio educativi 0-6 sulla lettura dialogica con libri e albi illustrati in formato cartaceo, e le loro percezioni relative agli effetti di questa pratica sullo sviluppo cognitivo e socio emotivo dei bambini;
2. esplorare le conoscenze e le pratiche relative all'uso di albi illustrati digitali (picture e-book) e libri in formato digitale con bambini tra 0 e 6 anni, indagando la propensione a integrarli nelle attività di lettura, le attitudini verso il digitale e le abilità tecniche percepite nell'utilizzo di dispositivi e risorse digitali con i più piccoli.

2. MATERIALI E METODI

2.1 Partecipanti e procedura

Il campione dello studio è composto da 36 professionisti dei servizi educativi per la fascia 0-6 anni, prevalentemente di genere femminile ($F = 94,4\%$). L'età dei partecipanti è compresa tra i 21 e i 66 anni, con un'età media pari a 45,3 anni ($DS = 13,6$). Le caratteristiche sociodemografiche del campione sono riportate in Tabella 1. Criterio d'inclusione per la partecipazione allo studio era quello di ricoprire il ruolo di insegnanti, educatori per la fascia 0-6 anni, quindi asili nido e scuole dell'infanzia. La raccolta dei dati è stata effettuata nel novembre 2024 mediante un questionario online composto da 26 item e diffuso attraverso la piattaforma Google moduli. Il protocollo, della durata di circa 15 minuti, è stato pensato per essere compilato dai partecipanti attraverso i dispositivi digitali a loro più comodi quali smartphone, tablet o computer e in momenti della giornata più adatti alle loro esigenze lavorative e di vita quotidiana. Tutti i partecipanti hanno aderito allo studio su base volontaria e hanno fornito il consenso informato prima della compilazione. Il presente studio ha ottenuto l'approvazione del Comitato Etico dell'Università LUMSA il 23 maggio 2023 (codice d'approvazione: 10/ 2023).

2.2 Strumenti

Il protocollo di rilevazione ha incluso item a risposta chiusa e item a risposta aperta, consentendo la raccolta di dati sia quantitativi sia qualitativi.

2.3 Effetti della lettura dialogica sullo sviluppo infantile

In apertura di questa sezione è stato inserito un item volto a rilevare la frequenza con cui i partecipanti

Tabella 1. Caratteristiche sociodemografiche del campione.

Variabili sociodemografiche	Campione N = 36
Età (Media, DS)	21-66a. (45,3, 13,6)
Anni di carriera (Media, DS)	0,2-35a. (15,7, 11,8)
Genere n (%)	
Maschio	2 (5,6%)
Femmina	34 (94,4%)
Livello di istruzione n (%)	
Diploma	19 (52,8%)
Laurea di primo livello o secondo livello	17 (47,2%)
Ruolo n (%)	
Educatore	15 (41,67%)
Insegnante	21 (58,33%)

Nota. a. = anni; D.S. = deviazione standard.

dichiaravano di utilizzare la lettura dialogica in sezione o in classe. Successivamente, per indagare le percezioni dei professionisti del settore 0-6 rispetto agli effetti della lettura dialogica sullo sviluppo cognitivo e socio emotivo dei bambini, è stato costruito un questionario ad hoc composto da 7 item. Gli item del questionario sono stati costruiti sulla base delle principali dimensioni emerse dalla letteratura (Murray et al., 2022; Marangi, 2023; Kogan, 2024). In particolare, è stato chiesto di esprimere il grado d'accordo sugli effetti positivi della lettura dialogica per i bambini nei domini di: memoria, attenzione, turno di parola, linguaggio, relazioni interpersonali, comprensione e regolazione emotiva, curiosità e creatività. A tal fine, si riportano alcuni esempi di item: "Ritieni che la lettura dialogata (lettura condivisa) in gruppo influenzi positivamente le seguenti aree di sviluppo cognitivo e socio-emotivo dei bambini?" "Secondo Lei l'esperienza di lettura di un libro cartaceo è differente da quella di un libro in formato digitale?". Le risposte sono state rilevate tramite una scala Likert a 5 punti (fortemente d'accordo, d'accordo, né d'accordo né in disaccordo, in disaccordo e fortemente in disaccordo).

2.4 Rappresentazioni relative alla lettura su supporto digitale e all'uso di tecnologie nei servizi 0-6

Per rilevare pratiche e rappresentazioni professionali relative alla lettura su supporto digitale e all'uso di tecnologie nei servizi 0-6 è stato inserito nel protocollo un breve set di item che hanno esplorato: esperienza e uso della lettura digitale con i bambini, valutazione dell'età ritenuta più adeguata per l'introduzione di e-book e picture e-book, e convinzioni professionali sull'impatto educativo dei dispositivi digitali. Coerentemente con la natura dei contenuti indagati, sono stati impiegati forma-

ti di risposta differenti che prevedevano domande dicotomiche (Sì/No) per rilevare la presenza di esperienze o posizioni di base; una domanda a scelta multipla per l'indicazione della fascia d'età consigliata per l'utilizzo del digitale, e affermazioni su scala Likert a 5 punti per misurare il grado di accordo rispetto a specifiche valutazioni sull'uso educativo del digitale.

2.5 Conoscenze/Abilità e Atteggiamento professionale nei confronti dei dispositivi digitali

Con l'obiettivo di indagare le dimensioni di competenza e atteggiamento professionale nei confronti dei dispositivi digitali sono state utilizzate le scale Digital Competence ($\alpha = 0,74$; $\omega = 0,78$) e Professional Attitude ($\alpha = 0,60$; $\omega = 0,71$) proposte da Madsen e colleghi (2018). Gli item sono stati adattati al contesto educativo italiano per la fascia 0-6 anni e costruiti specificamente per valutare le competenze, le conoscenze e le attitudini digitali dei professionisti. A titolo esemplificativo, si riporta uno degli item somministrati ai partecipanti strutturato per indagare abilità e padronanza nell'utilizzo di supporti digitali: "Quando lavoro con i bambini, sono in grado di utilizzare gli strumenti digitali rispettando i principi pedagogici del lavoro educativo." Peraltro, le attitudini, le aspettative e l'influenza dei dispositivi digitali sulle pratiche educative sono state esplorate mediante item quali "L'uso degli strumenti digitali è essenziale per strutturare programmi educativi di qualità per bambini 0-6 anni". Per garantire la coerenza delle risposte sono stati inclusi anche item reverse; di seguito se ne riporta un esempio: "Le aspettative legate all'uso degli strumenti digitali a scuola mi causano frustrazione".

In funzione della specificità dei contenuti indagati, le risposte sono state raccolte mediante una scala Likert a 5 punti finalizzata a misurare il livello di accordo dei professionisti (fortemente d'accordo, d'accordo, né d'accordo né in disaccordo, in disaccordo, fortemente in disaccordo).

2.6 Sezione qualitativa: rappresentazioni e bisogni formativi sul digitale

Infine, sono state incluse nel protocollo 4 domande a risposta aperta, finalizzate a raccogliere dati qualitativi sulle rappresentazioni e sulle valutazioni dei professionisti rispetto alla lettura digitale e all'uso delle tecnologie nei servizi 0-6. Ai partecipanti è stato chiesto di rispondere liberamente, con parole proprie così da esplorare in modo più approfondito percezioni, argomentazioni e bisogni formativi. In particolare, le domande erano volte

ad indagare i vantaggi e gli svantaggi attribuiti alla consultazione di libri e albi illustrati in formato digitale, le motivazioni a sostegno della posizione espressa sull'opportunità di avvicinare i bambini alle tecnologie in ambito scolastico, e gli aspetti che i professionisti desidererebbero approfondire in eventuali percorsi di formazione sul tema.

2.7 Piano di analisi

I dati quantitativi sono stati analizzati con il software SPSS (v. 24.0). In relazione all'utilizzo della lettura dialogica, sono state calcolate frequenze e percentuali di risposta, al fine di descrivere sia la frequenza d'uso dichiarata dai partecipanti, sia il grado di accordo rispetto agli effetti positivi percepiti della lettura dialogica sullo sviluppo infantile. Per quanto riguarda le percezioni relative alla lettura su supporto digitale e all'impiego di strumenti tecnologici nella fascia 0-6 anni, sono state condotte correlazioni bivariate mediante l'indice r di Pearson, con l'obiettivo di esaminare le associazioni tra le rappresentazioni sull'uso del digitale nella lettura e nelle pratiche educative, i punteggi alla scala di Digital Competence e i punteggi alla scala di Professional Attitude. Infine, le risposte alle domande aperte sono state sottoposte ad analisi tematica con il supporto di NVivo (Lumivero, 2025) per individuare temi ricorrenti nelle rappresentazioni dei partecipanti sull'uso della lettura digitale nella prima infanzia e sui bisogni formativi connessi al digitale educativo.

3. RISULTATI

3.1 Percezioni degli specialisti relative agli effetti della lettura dialogica sullo sviluppo infantile

Il 75% dei partecipanti utilizza libri o albi illustrati in classe almeno due o tre volte a settimana e, tra questi, oltre la metà li impiega quotidianamente (dettaglio in Tabella 2).

Nel complesso, gli specialisti esprimono un giudizio molto positivo sull'influenza della lettura dialogica in gruppo sulle diverse aree di sviluppo cognitivo e socio emotivo dei bambini. Per tutte le dimensioni considerate, la grande maggioranza dei partecipanti si colloca tra "d'accordo" e "fortemente d'accordo", con una prevalenza sistematica delle risposte di forte accordo. In particolare, la totalità dei partecipanti ritiene che la lettura dialogica possa avere un effetto positivo sullo sviluppo infantile in termini di memoria, attenzione, linguaggio, curiosità e creatività. Per turno di parola, relazioni inter-

Tabella 2. Frequenza lettura libri e/o albi illustrati.

Con quale frequenza legge libri e/o albi illustrati in classe/sezione?	n	%
Raramente	2	5,6%
Una volta a settimana	7	19,4%
2-3 volte a settimana	13	36,1%
Tutti i giorni	14	38,9%

personali e comprensione e regolazione delle emozioni, pur prevalendo le posizioni di accordo o forte accordo, una piccola percentuale si esprime in modo neutro, con risposte "né in accordo né in disaccordo" pari al 2,8% per turno di parola e relazioni interpersonali e all'8,3% per comprensione e regolazione delle emozioni.

3.2 Matrice di correlazione

La matrice di correlazione è riportata nel dettaglio in tabella 3. In particolare, è emersa una correlazione positiva e statisticamente significativa tra il ritenere necessario un incremento di tecnologie nei contesti scolastici 0-6 e il considerare il digitale un supporto utile per bambini con sviluppo atipico, disturbi del neurosviluppo o disabilità ($r = 0,65$, $p < 0,001$). Questo dato indica che gli educatori e gli insegnanti più favorevoli ad arricchire nidi e scuole dell'infanzia con strumenti digitali sono anche quelli che ne riconoscono la funzione inclusiva nei confronti di bambini con difficoltà. Inoltre, anche il livello di competenze digitali posseduto, misurato tramite la scala Digital Competence (Madsen et al., 2018), risulta positivamente associato alla percezione del digitale come supporto pedagogico per bambini con sviluppo atipico ($r = 0,61$, $p < 0,001$) evidenziando come un maggiore livello di conoscenze e formazione si accompagna alla convinzione che tablet o computer possano favorire percorsi educativi più inclusivi. D'altra parte, è stata riscontrata una correlazione negativa tra competenze digitali (Digital Competence) e una posizione conservativa rispetto all'utilizzo educativo del digitale con i bambini più piccoli ($r = -0,37$, $p < 0,05$). Questo suggerisce che gli educatori e gli insegnanti meno competenti o meno formati tendono a posticipare o a escludere l'uso educativo di strumenti digitali in età precoci. In modo analogo, una minore propensione o attitudine positiva verso gli strumenti digitali (Professional Attitude) è associata a un maggior rifiuto del loro impiego educativo con i più piccoli ($r = -0,37$, $p < 0,05$). Quindi chi ha atteggiamenti meno favorevoli tende anche a considerare il digitale non adatto nella fascia di età prescolare 0-6 anni. La Professional Attitude, inoltre, correla positivamente

Tabella 3. Matrice di correlazione.

Variabili	1	2	3	4	5	6	7	8	9	10
1. Tecnologie e contesti scolastici 0-6	—									
2. Digitale come supporto per b. con sviluppo atipico	0,66***	—								
3. Genere	0,24	0,16	—							
4. Contesto scolastico 0-6 di appartenenza	-0,13	-0,32		—						
5. Libro cartaceo/Libro digitale	0,07	0,16	—		—					
6. Utilizzo dispositivi digitali in sezione	0,16	0,08	-0,03	—						
7. Utilizzo e-book e picture-book in sezione	-0,18	-0,09	-0,09	0,32	—					
8. Età bambini e utilizzo dispositivi digitali	-0,27	-0,12	0,25	-0,29	-0,40*	—				
9. Distrazione e utilizzo del digitale in sezione	-0,52**	-0,33	0,07	-0,26	-0,08	0,37*	—			
10. Incremento tecnologie nei contesti scolastici 0-6	0,26	0,16	-0,06	0,20	0,28	-0,50**	-0,47**	—		
Digital Competence_TOT ^a	0,45**	0,61***	-0,12	0,32	0,24	-0,37*	-0,30	0,41*	—	
Professional Attitude_TOT ^b	0,52**	0,39*	-0,20	0,28	0,14	-0,45*	-0,37*	0,46**	0,73***	—

Nota. * $p < 0,05$, ** $p < 0,01$, *** $p < 0,001$.

^a Digital Competence = Livello di competenze digitali percepito.

^b Professional Attitude = Attitudine ad utilizzare gli strumenti digitali.

con l'idea che il digitale possa essere un buon supporto pedagogico anche con bambini di fascia più precoce ($r = 0,46$, $p < 0,01$). Questo indica che un atteggiamento professionale più aperto al digitale si accompagna a una maggiore disponibilità a introdurre e-book e dispositivi già nei primi anni. Anche le competenze digitali (Digital Competence) mostrano una correlazione positiva con la medesima convinzione di supporto educativo in età precoce ($r = 0,41$, $p < 0,05$). In sintesi, sentirsi competenti nella tecnologia rende più probabile considerare utile l'uso del digitale già con i più piccoli. Infine, i dati emersi dalla matrice di correlazione sottolineano la presenza di un'associazione positiva molto forte tra attitudine al digitale (Professional Attitude) e la capacità percepita di mantenere relazione e attenzione dei bambini durante la lettura condivisa con picture e-book ($r = 0,73$, $p < 0,001$). Questo risultato indica che gli educatori e gli insegnanti più orientati all'uso del digitale ritengono di poter sostenere efficacemente coinvolgimento e interazione anche nelle situazioni di lettura su supporto digitale.

3.3 Analisi tematica delle risposte qualitative

I risultati dell'analisi tematica, riportati in Tabella 4, hanno evidenziato una visione articolata e talvolta ambivalente dei professionisti intervistati rispetto all'uso del digitale nei servizi educativi 0-6. Da un lato emergono vantaggi legati all'attrattività, alla praticità e allo sviluppo dell'alfabetizzazione digitale, dall'altro vengono espresse preoccupazioni legate a una precoce dipendenza dal digitale e ai potenziali effetti negativi del digitale sulle funzioni esecutive e sulla salute visiva dei bambini,

nonché una possibile riduzione della loro esperienza sensoriale, creatività e immaginazione.

Le opinioni sull'introduzione delle tecnologie a scuola risultano diversificate: alcuni professionisti manifestano un interesse verso l'utilizzo specifico di strumenti digitali, come la LIM e il gaming, altri si dichiarano interessati a sviluppare competenze per un uso corretto e consapevole della tecnologia nella prospettiva di integrarli all'interno delle pratiche didattiche.

Accanto a queste posizioni, tuttavia, alcuni partecipanti si mostrano scettici o riportano di non essere interessati a partecipare ad eventuali incontri formativi per ampliare le conoscenze sul tema dell'uso della tecnologia a scuola.

4. DISCUSSIONI

Il primo obiettivo dello studio è stato quello di rilevare le conoscenze dei professionisti del settore 0-6 sulla lettura dialogica con libri e albi illustrati in formato cartaceo, e le loro percezioni relative agli effetti di questa pratica sullo sviluppo cognitivo e socio emotivo dei bambini. Il 75% dei partecipanti riferisce di utilizzare libri o albi illustrati in classe almeno due o tre volte a settimana e, tra questi, oltre la metà li impiega quotidianamente. Questo dato è in linea con quanto presente in letteratura sottolineando come, al giorno d'oggi, le pratiche di lettura dialogica siano piuttosto diffuse nei contesti educativi 0-6 (Schapira & Grazzani, 2025).

Per quanto concerne i benefici sullo sviluppo cognitivo, dai dati raccolti emerge una percezione complessivamente positiva degli effetti della lettura dialogica sullo sviluppo infantile. In particolare, la totalità dei parteci-

Tabella 4. Risultati analisi tematica.

Domande	Nodi (Nvivo)	Percentuali di risposta
Vantaggi della lettura digitale	Alfabetizzazione digitale	8,33%
	Attrattività dei dispositivi	19,44%
	Comodità e praticità	44,44%
	Opinioni contrarie	13,89%
Svantaggi della lettura digitale	Dipendenza dal digitale	8,33%
	Impatto negativo sulle funzioni esecutive	13,89%
	Impatto sulla salute visiva	16,67%
	Mancanza di esperienza diretta con il digitale dei professionisti	22,22%
	Perdita dell'esperienza sensoriale	22,22%
	Perdita di creatività e immaginazione	8,33%
Avvicinamento dei bambini al digitale	Età troppo precoce	36,11%
	Uso eccessivo in altri contesti di vita	13,89%
	Alfabetizzazione digitale	11,11%
Percorso formativo sull'uso della tecnologia a scuola	Formazione all'utilizzo specifico di strumenti	13,89%
	Mancanza di interesse e opinioni contrarie	11,11%
	Scopi didattici	19,44%
	Sviluppo del bambino	11,11%
	Uso corretto e consapevole della tecnologia	16,67%
	Vantaggi e svantaggi dell'uso della tecnologia	11,11%

panti coinvolti nello studio ritiene che essa possa incidere favorevolmente sulle dimensioni di memoria, attenzione, linguaggio, curiosità e creatività. Effettivamente, le evidenze emerse da precedenti studi confermano come tale approccio produca effetti positivi sull'attenzione e sullo sviluppo linguistico dei bambini (Vally et al., 2015).

La maggior parte degli educatori e insegnanti coinvolti nello studio hanno inoltre riconosciuto la lettura dialogica come in grado di influenzare positivamente la comprensione delle emozioni e la regolazione emotiva dei bambini. Anche questo dato trova supporto nella lettura scientifica disponibile, in particolare, un recente studio di Kogan (2024) evidenzia come la lettura dialogica se affiancata da un'esposizione diretta al lessico emotivo, favorisce un miglioramento significativo sia nella comprensione ricettiva sia nell'espressione delle parole emotive presentate durante le attività di lettura condivisa ad alta voce. Questo suggerisce che interventi strutturati di lettura condivisa, arricchiti da strategie mirate sul lessico emotivo e dal lavoro metacognitivo, possono rappresentare una pratica efficace per sostenere lo sviluppo socio-emotivo nella prima infanzia.

Il secondo obiettivo dello studio è stato esplorare le conoscenze e le pratiche relative all'uso di albi illustrati digitali (picture e-book) e libri in formato digitale con bambini 0-6, indagando la propensione a integrarli nelle attività di lettura, le attitudini verso il digitale e le abilità tecniche percepite nell'utilizzo di dispositivi e risorse digitali con i più piccoli.

Nel complesso, i risultati emersi dalla matrice di correlazione delineano un quadro coerente in cui disponibilità a integrare strumenti digitali nei contesti educativi 0-6, competenze e atteggiamenti professionali risultano strettamente interconnessi. La forte associazione positiva tra il ritenere necessario un incremento delle tecnologie e il considerare il digitale un supporto utile per bambini con sviluppo atipico o disabilità suggerisce che l'apertura all'innovazione si accompagna alla valorizzazione della funzione inclusiva dei dispositivi, interpretati come risorsa capace di sostenere percorsi personalizzati e accessibili. Questo orientamento è in linea con evidenze recenti che attribuiscono alle tecnologie digitali e assistive un ruolo facilitante nei servizi educativi per l'infanzia con bambini con bisogni educativi speciali, soprattutto nel potenziare partecipazione, comunicazione e accesso alle attività didattiche (OECD, 2023). Inoltre, un livello più elevato di competenze digitali degli educatori e degli insegnanti è associato a una maggiore fiducia nell'uso pedagogico di tablet e computer per favorire percorsi educativi inclusivi, sia alla disponibilità a introdurre strumenti digitali in età prescolare, indicando che la formazione e l'autoefficacia tecnologica possono facilitare una lettura del digitale come opportunità educativa, piuttosto che come rischio per i più piccoli. Tale evidenza è coerente con ricerche recenti che mostrano come la percezione della facilità d'uso, e in particolare la competenza digitale percepita, sia la dimensione maggiormente associata alle attitudini ver-

so l'utilizzo della tecnologia nel settore 0-6 (Merjovaara et al., 2024). Specularmente, la correlazione negativa tra competenze digitali e posizione conservativa, insieme all'associazione negativa tra atteggiamento professionale meno favorevole e rifiuto dell'impiego educativo delle tecnologie, segnala che resistenze e prudenza potrebbero essere legate ad una minore padronanza operativa e a minore fiducia nell'uso didattico degli strumenti.

In linea con tali evidenze, la letteratura segnala altresì come la limitata conoscenza pedagogico-tecnologica degli educatori e degli insegnanti e le risorse tecnologiche insufficienti sul luogo di lavoro costituiscono ostacoli significativi all'integrazione dei supporti digitali nei contesti educativi (Ogegbo & Aina, 2020).

Infine, il legame molto forte tra l'attitudine positiva verso il digitale e la capacità percepita di mantenere relazione e attenzione dei bambini durante la lettura condivisa con picture e-book evidenzia che gli insegnanti più orientati al digitale non lo considerano un elemento che compromette l'interazione, quanto piuttosto una modalità compatibile con il coinvolgimento attivo, ritenendo di poter sostenere efficacemente attenzione, partecipazione e scambio anche nelle situazioni di lettura su supporto digitale.

Per quanto riguarda i nodi emersi dall'analisi tematica, in linea con la letteratura recente, viene sottolineata l'importanza di ampliare il concetto di alfabetizzazione digitale a partire dai servizi educativi dell'infanzia (Nardone, 2025). Inoltre, tra i vantaggi dei device digitali emergono da un lato la percezione di comodità e praticità di utilizzo per l'adulto, dall'altro vengono riconosciute caratteristiche di attrattività per i bambini.

Tale percezione è coerente con la letteratura scientifica sulla pedagogia digitale nella prima infanzia, che descrive la media education come dimensione complementare alle pratiche tradizionali e come contesto capace di sostenere motivazione e partecipazione quando è integrato in modo intenzionale nelle routine educative (Li et al., 2024). In particolare, le evidenze scientifiche sottolineano come le applicazioni narrative e-picture e book digitali ben progettati, soprattutto quando includono elementi interattivi pertinenti alla storia e sono fruiti in modo condiviso, possono aumentare interesse, attenzione congiunta e coinvolgimento dei bambini in età prescolare (Li et al., 2023). I professionisti intervistati hanno inoltre riferito interesse verso strumenti e metodologie digitali specifiche ritenute utili in ambito educativo, come la Lavagna Interattiva Multimediale (LIM), insieme alla richiesta di formazione su approcci trasversali quali coding, gaming e sulle opportunità legate all'Intelligenza Artificiale (IA).

Un ulteriore elemento emerso riguarda l'età ritenuta più adeguata per l'esposizione al digitale, individuata prevalentemente tra i 3 e i 6 anni, in accordo con le indicazioni dell'Accademia Americana di Pediatria che raccomandano una forte limitazione dell'uso sotto i 18 mesi e un impiego guidato e di qualità nelle età successive (AAP, 2016). Dalla ricerca sono tuttavia emersi anche pregiudizi e timori circa l'utilizzo dei dispositivi digitali, in particolare il rischio percepito di compromissione di funzioni esecutive e di un rallentamento dello sviluppo motorio o cognitivo in caso di esposizioni elevate e poco mediate. Tali preoccupazioni sono compatibili con uno studio neuroevolutivo che riporta associazioni tra uso molto intenso di schermi nei primi anni e alcuni indicatori neuroanatomici meno maturi, pur sottolineando che le relazioni osservate dipendono anche da variabili contestuali e familiari (Hutton et al., 2022).

Inoltre, è emerso che i dispositivi digitali sono percepiti come meno idonei a sostenere esperienze di apprendimento complete, anche sul piano sensoriale; tale posizione, secondo un recente studio, sembra riflettere più una difficoltà da parte degli insegnanti nel riconoscere il potenziale educativo di questi strumenti piuttosto che una reale mancanza di competenze tecnologiche (Vidal-Hall et al., 2020). Uno dei timori riscontrati sembra estendersi anche alla possibile perdita di creatività e immaginazione connesse al gioco. Il gioco viene infatti associato prevalentemente dagli insegnanti ad attività tradizionali caratterizzate da esplorazione, socializzazione, esperienza diretta e scelta autonoma (Palaologou, 2016). Tuttavia, queste caratteristiche risultano meno frequentemente riconosciute nelle interazioni dei bambini con i dispositivi digitali, evidenziando una minore associazione tra tecnologia e gioco rispetto ad altre attività (Palaologou, 2016). Un'altra preoccupazione ricorrente riguarda l'impatto sulla salute visiva: le sintesi più recenti sullo screen time in età prescolare evidenziano che i rischi aumentano soprattutto con uso prolungato a distanza ravvicinata e con la riduzione di attività alternative, raccomandando pause frequenti e tempi quotidiani equilibrati (Ponti, 2023).

In questa direzione, l'AAP ribadisce che eventuali esiti negativi non sono attribuibili al digitale in sé, ma alla fruizione passiva e alla sostituzione di esperienze (AAP, 2016). Infine, è emersa la percezione di una discrepanza tra ambiente domestico e contesto educativo rispetto ad accesso ai dispositivi, aspettative d'uso e pratiche di mediazione; questo dato suggerisce l'opportunità di rafforzare il confronto e l'allineamento tra scuola e famiglia.

5. LIMITI E PROSPETTIVE FUTURE

Nonostante gli interessanti risultati emersi da questo studio è necessario considerarne anche i limiti. In primo luogo, il campione esiguo non è rappresentativo della popolazione dei professionisti dei servizi educativi 0-6. Questo riduce la generalizzabilità dei dati e suggerisce la necessità, in ricerche future, di coinvolgere campioni più ampi, diversificati e bilanciati che riflettano la composizione reale del settore. Un ulteriore limite riguarda il disegno trasversale, che consente di rilevare associazioni tra variabili, ma non permette di trarre conclusioni in termini causali o di cambiamento nel tempo. In questo senso, studi longitudinali potrebbero chiarire meglio le direzioni delle relazioni osservate. D'altra parte, però, un punto di forza di questo studio è l'adozione di un approccio mixed methods, che ha integrato analisi quantitativa delle correlazioni e analisi qualitativa tematica, permettendo una comprensione più ricca delle rappresentazioni professionali; tuttavia, tali analisi richiedono ulteriori conferme su campioni più estesi. Un altro aspetto che potrebbe essere approfondito riguarda gli effetti della lettura dialogica, tradizionale e digitale, sulle competenze linguistiche, cognitive e socio emotive dei bambini. Ricerche future potrebbero avviare studi focalizzati che prevedano una selezione rigorosa delle applicazioni e dei picture e-book utilizzati, coinvolgendo campioni ben definiti di bambini e insegnanti e adottando misure osservative e standardizzate degli esiti. In prospettiva futura, appare altresì prioritario progettare e valutare programmi strutturati di formazione per educatori e insegnanti, mirati non solo a promuovere l'adozione della lettura dialogica e dialogica-digitale, ma anche più in generale a potenziare competenze tecniche nell'uso del digitale, con particolare attenzione alla dimensione emotiva e alle strategie di mediazione adottate dall'adulto. Dunque, l'educazione degli adulti al digitale e alle pratiche dialogiche può contribuire a superare un uso percepito come accessorio o riempitivo dei dispositivi (Marangi, 2023), garantendo quella impalcatura relazionale e cognitiva che sostiene l'apprendimento e il coinvolgimento dei bambini nella prima infanzia (Vygotskij, 1978).

6. CONCLUSIONI

In conclusione, i risultati di questo studio confermano come la lettura dialogica sia percepita dai professionisti 0-6 come una pratica educativa ad alto valore, capace di sostenere in modo trasversale lo sviluppo cognitivo e socio emotivo dei bambini. D'altra parte, l'emergere di forme di lettura dialogica in digitale evidenzia un poten-

ziale interessante, purché la tecnologia venga integrata con intenzionalità pedagogica e mantenendo centrale la triade adulto bambino libro, anche quando mediata da e-book e app narrative (Bus et al., 2020; Li et al., 2023; Marangi, 2023). In questa prospettiva, il digitale non si configura come alternativa all'analogico, ma come dimensione complementare che richiede una mediazione educativa consapevole, capace di integrare strumenti diversi all'interno di esperienze coerenti e significative (Marangi, 2023). Le correlazioni e i temi qualitativi suggeriscono infatti che competenze e atteggiamenti professionali verso il digitale si associano in modo significativo alla disponibilità a utilizzarlo come risorsa educativa, inclusiva e relazionale, soprattutto nei contesti in cui l'adulto si sente formato e supportato (Madsen et al., 2018; Merjovaara et al., 2024). Nel complesso, questi dati indicano la necessità di rafforzare percorsi di formazione mirati, capaci di integrare principi della lettura condivisa e alfabetizzazione digitale, così da accompagnare i servizi 0-6 nell'adozione di pratiche ibride coerenti con le trasformazioni dell'era post digitale e con le indicazioni delle organizzazioni internazionali sull'educazione ai media fin dalla prima infanzia (UNESCO, 2021; OECD, 2023; UNICEF, 2025).

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Oltre la rappresentazione: la griglia Q.U.A.K.E. per l'analisi queer-intersezionale dei videogiochi

Beyond representation: the Q.U.A.K.E. grid for a queer-intersectional analysis of videogames

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Abstract. The article proposes a hermeneutic and pedagogical tool for the critical analysis of video games in education, situating game studies within an intersectional, feminist, and decolonial perspective. Starting from current data on the growing diversification of gaming communities and industry structures, the study recognizes both the increased visibility of marginalized identities and the persistence of structural inequalities in media representation, access, and production. Video games are interpreted as sociotechnical and cultural systems capable of shaping imaginaries, affective experiences, and forms of citizenship, which requires a true video game culture to be developed. Integrating contributions from the tradition of Critical Media Education, in particular the dimensions identified by Soriani (2024), with the Queer Media Education framework developed by Messina (2025), the article reformulates game literacy as a political, ethical and affective competence. From this perspective, game literacy implies not only knowing how to understand game mechanics and narratives but also being able to critically interrogate how video games contribute to the construction of identities, distribute power, and promote or inhibit agency. To operationalize this approach, an analytical grid is developed, which examines authorial positioning, accessibility, gameplay mechanics, interactional dynamics, aesthetic-affective dimensions, representations, and narrative quality through the Q.U.A.K.E. dimensions (*Queer, Underground/Unlearning, Affective, Knowledge and Emancipatory*). The objective is to provide educators and researchers with a tool to investigate the ways in which videogames embody or challenge hegemonic logics, placing care, justice and community as foundational values of design and transformative digital citizenship.

Keywords: videogame culture, digital citizenship education, game literacy, queer media education.

¹ Il contributo riflette la visione concettuale condivisa da tutti e tre gli autori, comprese le scelte metodologiche e le revisioni finali. Per quanto riguarda la stesura formale, i paragrafi §1 e §2.1 sono stati redatti da Marika Mascitti; §2.2 e §4 da Alessandro Soriani e §3 da Salvatore Messina.

Riassunto. L'articolo propone uno strumento ermeneutico e pedagogico per l'analisi critica dei videogiochi nei percorsi educativi, collocando i game studies all'interno di una prospettiva queer, transfemminista e intersezionale. A partire dai dati attuali sulla crescente diversificazione delle comunità di giocatori e delle strutture industriali, lo studio riconosce sia l'aumento di visibilità delle identità marginalizzate sia la persistenza di disuguaglianze strutturali nella rappresentazione, nell'accesso e nella produzione dei media. I videogiochi sono interpretati come sistemi sociotecnici e culturali capaci di modellare immaginari, esperienze affettive e forme di cittadinanza, per cui una vera e propria cultura del videogioco deve essere sviluppata. Integrando contributi della tradizione della Critical Media Education, e in particolare le dimensioni già individuate da Soriani (2024), con il framework della Queer Media Education sviluppato da Messina (2025), l'articolo riformula la game literacy come competenza politica, etica e affettiva. In quest'ottica, game literacy implica non solo saper capire meccaniche e narrative di gioco, ma anche sapersi chiedere in maniera critica come i videogiochi contribuiscono alla costruzione di identità, distribuiscono il potere e promuovono o inibiscono l'agency. Per operationalizzare questo approccio, viene elaborata una griglia analitica che esamina posizionamento autoriale, accessibilità, meccaniche di gioco, dinamiche interattive, dimensioni estetico-affettive, rappresentazioni e qualità narrativa attraverso le dimensioni Q.U.A.K.E. (*Queer, Underground/Unlearning, Affective, Knowledge e Emancipatory*). L'obiettivo è quello di fornire a educatore e ricercatore uno strumento per interrogare i modi in cui i videogiochi incarnano o sfidano logiche egemoniche, ponendo cura, giustizia e comunità come valori fondanti del design e della cittadinanza digitale trasformativa.

Parole chiave: cultura videoludica, digital citizenship education, game literacy, queer media education.

1. GAMERS, DESIGNERS E GAME STUDIES: UNO SCENARIO DIVERSIFICATO E IN CONTINUA EVOLUZIONE

Nel corso dell'ultimo decennio, i game studies hanno progressivamente integrato, nel loro sguardo, una prospettiva intersezionale, inclusiva e media educativa, riconoscendo i videogiochi non solo come prodotti culturali, ma come veri e propri sistemi sociotecnici in grado di modellare, riprodurre e anche contestare le gerarchie culturali. In questo campo in espansione, l'intersectional game design si è consolidato come lente analitica decisiva, perché mette in dialogo cornici femministe, queer, antirazziste e antiabiliste, per interrogare chi progetta, chi gioca e chi beneficia del gioco digitale (Gray & Sarkeesian, 2020; Richard et al., 2017; Ruberg, 2019). Se la diversificazione delle persone che giocano appare oggi difficilmente contestabile, ciò non implica automaticamente una trasformazione delle grammatiche culturali del medium: rimane aperta la tensione tra ampliamento dei pubblici e persistenza di norme, gerarchie e dispositivi di esclusione incorporati in design, piattaforme e culture di comunità.

I dati più recenti rendono evidente un panorama di crescente diversificazione per genere, sessualità, etnia e abilità, sia sul versante della partecipazione sia su quello della produzione. Circa il 60% della popolazione negli Stati Uniti (ESA, 2024) e nell'Unione Europea (Video Games Europe, 2023) si identifica come gamer; all'interno di questo bacino, il 53% si identifica come uomo, il 46% come donna e il 9% come non binaria, trans o gender nonconforming. Secondo il report GLAAD (2024), quasi 1 giocatore su 5 negli Stati Uniti si identifica come LGBTQIA+, mostrando un incre-

mento significativo rispetto al 10% registrato nel 2020. Se consideriamo l'asse etnico-razziale, emergono ulteriori livelli di complessità: ESA (2024) riporta che, tra le persone rispondenti negli Stati Uniti, il 19% si identifica come ispanica, il 12% come nero/afroamericana, il 3% come nativa americana e il 4% come asiatica. Con riferimento specifico alle persone giovani, Gottfried e Sidoti (2024) evidenziano che adolescenti nera e ispanica mostrano livelli di engagement più elevati in termini di tempo trascorso a giocare (rispettivamente 17% e 25% contro l'8% delle persone adolescenti bianche), amicizie costruite attraverso i videogiochi (55% e 53% contro 43%) e conoscenze apprese giocando (29% e 17% contro 7%). Nel loro insieme, queste evidenze non vanno trattate come semplice fotografia demografica: indicano piuttosto un mutamento culturale che rende sempre meno sostenibile l'immaginario del "giocatore standard", sollecitando a interrogare chi viene riconosciuto come soggetto legittimo del play e quali forme di esperienza vengano rese possibili o impraticabili. Nonostante tale maggiore coinvolgimento, la rappresentazione culturale nei giochi mainstream resta sproporzionatamente bianca e occidentale, rafforzando ciò che Gray e Sarkeesian (2020) definiscono "bianchezza strutturale nel videogioco", in cui gamer non bianca continuano ad attraversare spazi che restano razzialmente codificati, andando a costituire contro-pubblici e "safe zones" digitali tramite lo streaming, o produzioni indipendenti. La disabilità costituisce un ulteriore asse critico dell'approccio intersezionale. L'indagine Newzoo & Intel (2021), condotta su 1.824 gamer (10-65 anni), indica che il 31% dichiara una disabilità, con la salute mentale come area più frequentemente riportata. L'industria videoludica sta progressivamente affrontando le questio-

ni di accessibilità integrandole nei propri piani di lavoro (Westin et al., 2025); tuttavia, il 66% delle persone gamer britanniche con disabilità riferisce di riscontrare ancora grandi barriere che compromettono il gioco (Scope, 2021). Inoltre, la rappresentazione della disabilità, quando non viene invisibilizzata (Caselli et. al, 2022), resta problematica e oggetto di critica: tali personaggi tendono a essere raffigurati come oggetti di pietà, come eroi compensatori o come antagonisti, riproducendo stereotipi che raramente cedono il posto a soggettività complesse e autentiche (Shell, 2021).

In generale, si osserva un cambiamento nella comunità di gioco, con oltre il 70% delle persone che concorda sull'importanza di avere giochi con personaggi e storie diversificati (Conroy et al., 2023). Tuttavia, una maggiore visibilità delle comunità marginalizzate è spesso accompagnata da una maggiore vulnerabilità: nel 2023 il 37% di adolescenti e preadolescenti statunitensi gamer riferisce di aver subito molestie nei giochi multiplayer online a causa della propria identità (ADL, 2024); tra le persone adulte, donne e gamer afroamericanæ risultano i gruppi più colpiti da molestie legate all'identità (cfr. Fig.

1). In termini pedagogici, questi dati segnalano che le culture del gioco non possono essere lette solo come spazi di socialità e creatività: sono anche ambienti in cui si riproducono forme di violenza simbolica e materiale che incidono su appartenenza, partecipazione e agency.

Come sostengono D'Ignazio e Klein (2020), l'inclusione richiede più della mera presenza rappresentazionale: implica un ripensamento sistemico delle gerarchie di design che spesso privilegiano corpi normati e competenze cognitive neurotipiche. Sul versante della produzione, Weststar & Lentini (2024) indicano che solo il 31% delle persone professioniste dell'industria videoludica si identifica come donna, l'8% come non binaria e circa l'1% come transgender. Inoltre, il 27% si identifica come LGBTQIA+, dato in linea con quanto rilevato anche nel Regno Unito (Taylor et al., 2022). Nonostante ciò, meno del 10% dichiara di occupare ruoli di leadership o executive.

Persistono poi disuguaglianze lungo l'asse etno-raziale e rispetto alla disabilità. Negli Stati Uniti, il 70% dellæ sviluppatoræ si identifica come biancæ, mentre quote minori si trovano come Black/African American (5%)

Identity-Based Harassment of Adults

Share of adults who reported experiencing identity-based harassment

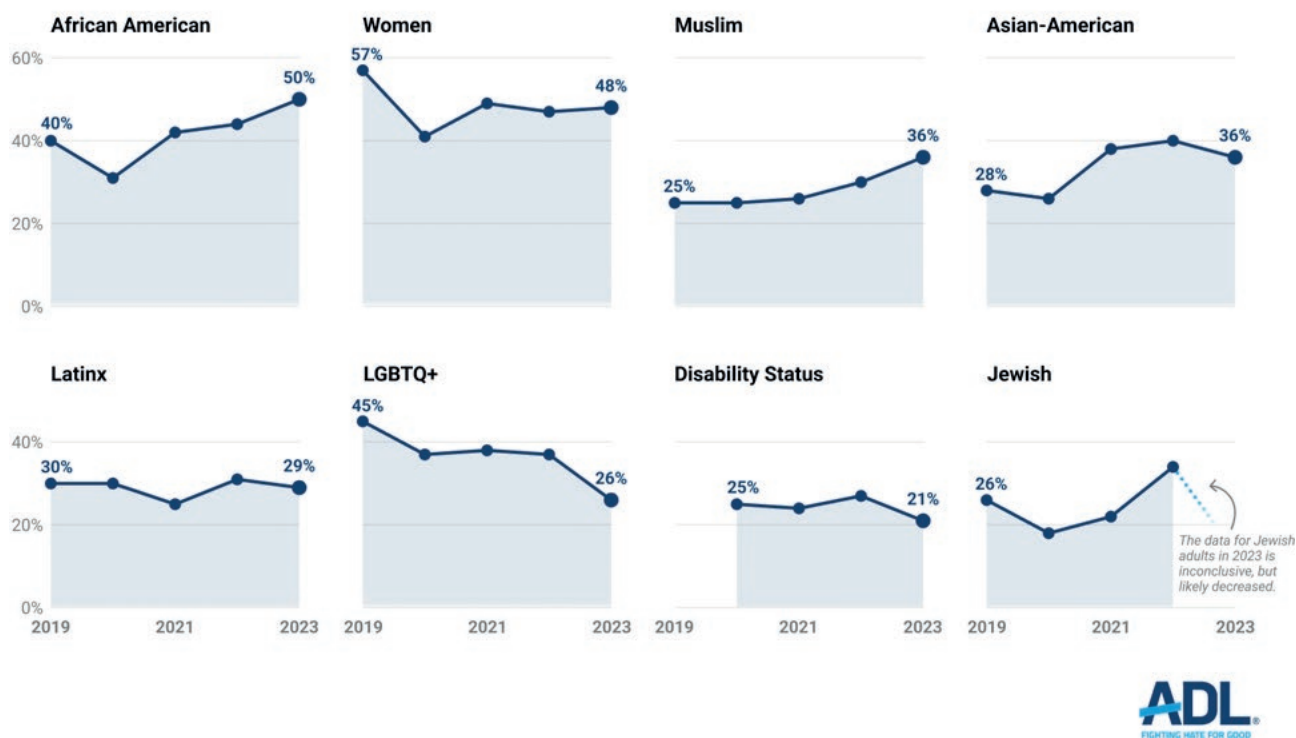


Figura 1. Aggressioni basate sull'identità verso adulti in ambienti videoludici (ADL, 2024, p. 17).

o Latinx (6%) (ESA, 2024). Nel Regno Unito, le persone non bianche rappresentano circa il 14% della forza lavoro del settore, al di sotto della media nazionale (18%) (Taylor et al., 2022). Come argomentano DePass (2018) e Anthropy (2012b), tali iniquità persistono nonostante l'emergere di studi e scene produttive guidate da soggettività queer, BIPOC (*Black, Indigenous and People of Color*) e disabili. Le produzioni indie e underground si riappropriano dell'autorialità, mobilitano immaginari alternativi e mettono in crisi assunti normativi della produzione mainstream, anche attraverso pratiche di contro-narrazione e resistenza epistemica. In prospettiva educativa, ciò implica che l'analisi dei videogiochi non possa limitarsi al "testo" finale, ma debba includere anche i regimi di produzione e circolazione che ne condizionano visibilità, legittimità e repertori rappresentazionali (cfr. Anthropy, 2012b; DePass, 2018; Ruberg, 2019). Queste dinamiche incidono direttamente sul discorso educativo. In continuità con la Critical Media Education (Buckingham, 2003; Gee, 2007; Kellner & Share, 2007), i videogiochi possono essere intesi come testi culturali e ambienti di apprendimento in cui il significato è co-costruito da giocatore e comunità di pratica attraverso gioco, progettazione e riflessione. La game literacy è spesso definita come la capacità di "leggere" e "scrivere" i giochi come sistemi multimodali e rule-based (Boller & Kapp, 2017; Gee, 2007); tuttavia, quando il focus si sposta sulle gerarchie normative inscritte nei sistemi ludici, tale competenza richiede un'estensione: leggere un videogioco significa anche rendere visibili le assunzioni culturali che organizzano accesso, agency, riconoscimento e desiderabilità dei corpi "giocanti" e "giocati". Questa lente converge con la queer theory, che riconfigura il gioco come arena di desideri, incarnazioni e temporalità non normative. Riprendendo la nozione di orientamento (Ahmed, 2006), i queer game studies interpretano la queerness non solo come identità, ma come modalità di abitare diversamente spazio, tempo e corpo. In maniera simile, Ruberg (2019) sostiene che i videogiochi sono attraversati da logiche queer proprio nelle loro affordances (fallimento, ripetizione, deviazione, glitch), che invitano a deviare da una padronanza lineare e teleologica, in controtendenza rispetto a valori tecnocapitalisti di efficienza e controllo. In questa prospettiva, la queer theory non opera solo come critica delle culture ludiche normative, ma come risorsa per pensare un design capace di legittimare vulnerabilità, cura, consenso e co-creazione come dimensioni formative.

Alla luce di tali premesse, lo studio assume quattro quesiti di ricerca centrali. (1) In che modo i videogiochi veicolano, rafforzano o sovvertono logiche culturali dominanti tramite meccaniche, narrazioni e gram-

matiche estetiche? (2) In quali modi i giochi possono sostenere forme alternative di agency e soggettivazione fondate su cura, pluralità emotiva ed etiche relazionali? (3) Quali principi e pratiche dovrebbero informare un modello politicamente consapevole di game design radicato in epistemologie decoloniali, intersezionali e femministe? (4) In che modo dispositivi analitici media educativi possono sostenere educatore e ricercatore nel rendere leggibili tali dimensioni in contesti formativi? Per rispondere, è stata sviluppata una griglia analitica che adatta un lavoro precedente di Media Education (Soriani, 2024), ulteriormente rivista alla luce del framework di Queer Media Education (Messina, 2025). La griglia integra criteri derivati da media literacy, pedagogia intersezionale e queer theory per esaminare, per ciascun gioco, contenuti narrativi, strutture meccaniche, dinamiche emotive e design estetico, inteso come l'insieme delle scelte visive, sonore e temporali che plasmano l'esperienza sensoriale del gioco. Essa non opera come strumento di quantificazione, ma come dispositivo ermeneutico critico: l'obiettivo non è attribuire punteggi, bensì produrre descrizioni argomentate e comparabili, rendendo espliciti i passaggi interpretativi e i nessi tra scelte di design, effetti culturali e implicazioni educative. In questo senso, i giochi sono trattati come spazi discorsivi in cui il significato è co-prodotto tra testo, sistema e giocatore. Attraverso un approccio comparativo e interpretativo, lo studio mira a mostrare come pratiche di design inclusivo e queer possano agire come tecnologie di immaginazione sociale, consentendo a giocatore e designer di riconfigurare il proprio rapporto con potere, identità e cura nella cultura digitale.

2. DALLA GAME LITERACY ALLA CRITICAL GAME PEDAGOGY

2.1 Educare a una cultura del videogioco: dal consumo alla mediazione critica

Nella società contemporanea, le tecnologie digitali permeano quasi ogni aspetto dell'esperienza umana, contribuendo a ridefinire pratiche di comunicazione, creatività e apprendimento. In questo scenario, i videogiochi si sono affermati come una delle industrie culturali ed economiche più rilevanti a livello globale e, soprattutto, come un ambiente mediale ad alta densità simbolica, relazionale e partecipativa. Educare a una cultura del videogioco (Soriani, 2024) significa riconoscere i giochi non soltanto come prodotti di intrattenimento, ma come artefatti culturali complessi, portatori di valore estetico, sociale e pedagogico. Tale posizione implica un cambiamento di postura: non si tratta di "difendere" o

“condannare” il gaming, né di strumentalizzarlo esclusivamente per fini didattici, ma di costruire condizioni di mediazione che permettano a discenti e educatorə di comprenderne linguaggi, forme e significati.

In questa direzione, educare a una cultura del videogioco richiede di considerare i videogiochi come fenomeni artistici, culturali ed economici degni di studio e meritevoli di attenzione analitica rispetto a meccaniche, estetiche, architetture narrative e ideologie sottese. Il Consiglio d'Europa (2019) colloca questa prospettiva nel quadro dell'Educazione alla Cittadinanza Digitale, in cui promuovere una “cultura del videogioco” significa coltivare riflessione, dialogo e partecipazione critica attorno alle pratiche di gioco. Un simile approccio mira a superare la dicotomia tra paura ed entusiasmo che spesso caratterizza il discorso pubblico sui videogiochi: da un lato, la retorica del rischio (tematiche come dipendenza, isolamento, violenza), dall'altro la retorica dell'innovazione (ad esempio, gamification come panacea educativa). La mediazione educativa, invece, si colloca in una terza via, che vede il videogioco come testo culturale e pratica sociale, richiedendo dunque un accompagnamento nell'interpretazione del medium, e una responsabilità pedagogica nella progettazione di interventi basati sul gioco.

In termini operativi, questa postura si traduce nella promozione di un dialogo informato tra adultə e giovani, incoraggiando un confronto intergenerazionale capace di riconoscere le competenze già presenti nei pubblici (esperienza di gioco, familiarità con generi e piattaforme, appartenenze comunitarie) e, al contempo, di problematizzarne i presupposti culturali. Educare a una cultura del videogioco significa, quindi, mettere le persone nelle condizioni di avvicinarsi al medium con curiosità, discernimento e ottimismo, sviluppando media literacy, empatia e coinvolgimento attivo come dimensioni chiave dell'educazione alla cittadinanza. In questa cornice, la cultura del videogioco non coincide con l'accumulazione di conoscenze enciclopediche sui titoli o con la padronanza tecnica delle piattaforme, ma con la capacità di “stare” nei mondi ludici in modo consapevole, riconoscendo che i videogiochi, come altri media, configurano orizzonti di senso: definiscono cosa appare desiderabile, normale, legittimo, e in quali condizioni si possa partecipare o essere esclusi.

2.2 Pedagogia critico-riflessiva del gaming: criteri di analisi e selezione per contesti educativi

L'applicazione pedagogica dei videogiochi può essere affrontata da molteplici prospettive. Soriani (2024) individua diversi paradigmi: diretto, indiretto, creativo, clinico e, soprattutto, critico-riflessivo. Gli approcci diretti

impiegano giochi progettati esplicitamente per l'istruzione, orientati allo sviluppo di competenze cognitive o disciplinari; gli approcci indiretti valorizzano invece giochi commerciali per apprendimenti tangenziali, stimolando curiosità, problem solving e discussione su temi non apertamente didattici. Tuttavia, nel quadro di una media education contemporanea, è l'approccio critico-riflessivo a presentare il maggiore potenziale trasformativo: non si limita a “usare” il videogioco, ma lo interpreta come oggetto di lettura culturale, come pratica sociale e come ambiente di esperienza in cui valori e visioni del mondo vengono incorporati e messi in atto.

Questa prospettiva invita discenti ed educatorə a interrogare i giochi come testi culturali: chi ha progettato questo gioco, con quale scopo e con quali valori? Quali visioni del mondo, stereotipi o scelte morali incorpora? Quali pratiche premia e quali rende marginali? In tal modo, l'educazione critica al gaming si allinea agli obiettivi più ampi della media education (Buckingham, 2019), per cui la decostruzione delle rappresentazioni, delle logiche produttive e delle risposte dei pubblici contribuisce a sviluppare coscienza critica. L'atto del giocare diviene così un contesto privilegiato per analizzare implicazioni sociali ed etiche (ad esempio, violenza, rappresentazioni di genere, questioni queer, consumismo, costruzione identitaria) promuovendo empatia, riflessione civica e responsabilità. Nel quadro della cittadinanza digitale (Soriani, 2021), l'approccio critico contribuisce a diversi domini, in particolare Media and Information Literacy, etica, empatia e partecipazione attiva, incoraggiando studentə a rapportarsi ai videogiochi non solo come giocatorə, ma come cittadinə capaci di interpretare e trasformare i propri ambienti mediiali.

Affinché questa prospettiva non resti astratta, è necessario disporre di criteri che sostengano la selezione e l'analisi dei giochi in modo argomentato. La scelta di videogiochi adeguati ai contesti educativi, infatti, non può appoggiarsi unicamente su popolarità, “valore motivazionale” o presunta neutralità dell'intrattenimento: richiede criteri articolati che rendano visibili sia il potenziale formativo sia le possibili criticità culturali del medium. In questa direzione, Soriani (2024) identifica sette dimensioni chiave utili a “leggere” il videogioco e a comprenderne l'impiego a fini educativi. Primo, valore autoriale e rilevanza tematica: la misura in cui il gioco esprime un'intenzionalità artistica o etica, nonché i temi e le questioni che affronta. Secondo, accessibilità: il livello di inclusività rispetto a interfaccia, lingua e barriere fisiche o cognitive. Terzo, specificità del gameplay: il grado in cui le meccaniche supportano in modo significativo apprendimento o riflessione, oppure comunicano qualcosa a chi gioca attraverso le proprie proce-

ture. Quarto, forme di interazione tra giocatori, distinguendo dinamiche cooperative, competitive o ibride e le loro implicazioni sociali. Quinto, qualità estetica e valore emotivo, che modellano engagement ed empatia e consentono di incontrare stili differenti e diverse modalità di espressione della creatività mediale. Sesto, qualità delle rappresentazioni: come persone, culture e gruppi sociali vengono raffigurati. Per gli scopi di questo articolo, tale dimensione assume un rilievo specifico: nell'ottica intersezionale e queer che orienta questa ricerca, analizzare come un gioco costruisce – o decostruisce – le rappresentazioni di soggettività marginalizzate non è un criterio tra gli altri, ma il punto di convergenza in cui design, potere e agency sono più manifestamente leggibili e analizzabili. Infine, qualità dello storytelling, intesa come profondità, coerenza e complessità morale delle architetture narrative.

Questi criteri supportano chi opera nei contesti educativi nell'individuare giochi "interessanti", cioè titoli che non solo intrattengono, ma stimolano pensiero critico, creatività e risonanza emotiva, offrendo terreno di discussione su norme e immaginari. Al contempo, mantenere un approccio critico implica riconoscere che anche giochi con rappresentazioni stereotipate o semplificanti (sulla realtà sociale, sul mondo queer, sulla violenza e su altri temi sensibili) possono costituire risorse utili: non per essere assunti come modelli, ma per innescare riflessioni e confronti comparativi con altri prodotti culturali e mediali. In altre parole, la selezione non coincide con una logica di "contenuti corretti", bensì con una logica di progettazione didattica che definisce obiettivi, setting e accompagnamento interpretativo, rendendo esplicite le ragioni per cui un gioco viene proposto e le domande critiche che ne orientano l'uso. È in questo spazio di mediazione che la cultura del videogioco diventa, pedagogicamente, un laboratorio di cittadinanza: un contesto in cui allenare capacità di lettura, argomentazione, negoziazione e cura dell'altro, riconoscendo che il play non è mai neutro e che l'educazione, per essere tale, deve rendere discutibili le sue condizioni di possibilità.

3. QUEER MEDIA EDUCATION E IL POTERE PEDAGOGICO DEI VIDEOGIOCHI

Alla luce delle evidenze discusse in precedenza (che mostrano, da un lato, la crescente diversificazione dei pubblici e, dall'altro, la persistenza di asimmetrie rappresentazionali, barriere di accesso e vulnerabilità legate all'identità) parlare di videogiochi senza interrogarsi su come veicolino immaginari, identità e visioni del mondo

significa ridurre il medium a mero intrattenimento, trascurandone la portata simbolica, narrativa ed educativa. I videogiochi costituiscono infatti ambienti sociotecnici complessi di socializzazione, performatività e apprendimento, nei quali ruoli di genere, dinamiche di potere e forme di appartenenza collettiva vengono costruiti e negoziati; come altri media digitali, in quanto dispositivi culturali, non si limitano a rappresentare la realtà, ma la modellano attivamente, funzionando come agenti pedagogici impliciti che educano desiderio, normatività e trasgressione. Da questa consapevolezza emerge la *Queer Media Education* (QME), quadro teorico-metodologico che combina le lenti della Media Education e della Queer Theory per analizzare criticamente e riscrivere le culture digitali e ludiche (Messina, 2025): la QME interpreta i videogiochi come spazi di negoziazione identitaria in cui le tecnologie non solo riproducono, ma producono differenze, rendendo centrale la domanda su quali soggettività risultino pensabili, desiderabili e "giocabili". La possibilità di scegliere, costruire o performare un avatar configura, in questo senso, un'esperienza di agentività che può rafforzare oppure destabilizzare norme relative a genere, sessualità e incarnazione simbolica (Shaw, 2009; 2014), mentre le infrastrutture algoritmiche che abilitano tali esplorazioni sono spesso radicate in logiche eteronormative, patriarcali o coloniali (Gray & Sarkeesian, 2020); esaminare i videogiochi attraverso una lente queer significa dunque mettere in crisi la presunta neutralità della tecnologia e rendere visibili i dispositivi di potere che orientano rappresentazioni, pratiche e condizioni di partecipazione. In questa prospettiva, la QME sposta il fuoco dall'uso strumentale dei giochi alle loro dimensioni culturali e simboliche, assumendo una pedagogia della disidentificazione (Muñoz, 1999) che invita a leggere i media non soltanto per ciò che mostrano, ma per ciò che cancellano o marginalizzano: leggere per riscrivere, abitare i giochi per re-immaginarli e trasformare il play in una pratica di cittadinanza attiva, un laboratorio per sperimentare soggettività plurali e relazioni non gerarchiche (Bogost, 2007).

Sul piano operativo, la QME trova una struttura pedagogica e metodologica nel modello Q.U.A.K.E.: *Queer, Unlearning-Underground, Affective, Knowledge, Emancipatory* (Messina, 2025): la dimensione Q (*Queer*) promuove decostruzione delle norme e disidentificazione dai ruoli imposti; la dimensione U (*Unlearning/Underground*) valorizza produzioni indipendenti, giochi sperimentali e culture fan-based come spazi di resistenza artistica, per disimparare (*Unlearning*) le grammatiche normative del mainstream, mettendo in crisi automatismi interpretativi, stereotipi e routine di consumo; la dimensione A (*Affective*) riconosce il valore formativo di

emozioni, cura ed empatia nelle comunità di gioco; la dimensione K (*Knowledge*) coltiva responsabilità epistemica e riflessiva verso i linguaggi digitali; e la dimensione E (*Emancipatory*) traduce la consapevolezza critica in azione trasformativa. Applicata ai videogiochi, la gramma Q.U.A.K.E. consente di individuare non solo bias e stereotipi, ma anche potenzialità educative e spazi di rappresentazione e liberazione in cui l'esperienza estetica si intreccia con la costruzione di senso e di sé; attraverso pratiche di analisi, redesign e interactive storytelling, la QME mira a formare soggettività capaci di attraversare i mondi virtuali in modo critico e di rinegoziarne i codici, trasformando il play in un dispositivo di consapevolezza mediale e giustizia. Per operationalizzare il framework teorico della QME nell'ambito dei game studies, è stata sviluppata una griglia di analisi critica dei videogiochi che riformula ed estende i criteri valutativi proposti da Soriani (2024), integrandoli con le dimensioni del modello Q.U.A.K.E.: la griglia (Tabella 1) mira a superare paradigmi valutativi tradizionali, spesso circoscritti a dimensioni estetiche, tecniche o funzionali, portando in primo piano il videogioco come ambiente simbolico, relazionale e politico capace di generare immaginari, relazioni e processi educativi; attraverso le sue categorie, consente di esaminare come i videogiochi producano o decostruiscano norme sociali e culturali, in particolare quelle legate a genere e potere, interrogando forme di rappresentazione, pratiche partecipative e logiche di design che plasmano l'esperienza di chi gioca, e concepisce ogni categoria come campo di indagine per esplorare il potenziale formativo, estetico ed etico del medium, con particolare attenzione alle dimensioni affettive, inclusive e trasformative del play.

La griglia analitica informata dal Q.U.A.K.E. funge dunque da dispositivo al tempo stesso pedagogico e critico: consente a educator e ricercatore di leggere i videogiochi come spazi di conoscenza affettiva, resistenza epistemica e trasformazione sociale, portando in primo piano l'interconnessione tra play, etica e giustizia mediale. In quanto strumento qualitativo, essa non mira a produrre valutazioni standardizzate o punteggi, bensì a sostenere descrizioni argomentate e comparabili delle scelte di design, rendendo trasparenti i passaggi interpretativi e i criteri attraverso cui si collegano elementi del gioco (procedure, estetiche, narrazioni, architetture relazionali) a implicazioni culturali ed educative. Il valore metodologico della griglia risiede quindi nella sua funzione di "operationalizzazione" di costrutti teorici: traduce la cornice della QME in dimensioni osservabili e discutibili, utili a esplicitare ciò che nei processi di gioco tende a restare implicito (assunzioni normative, gerarchie di visibilità, economie dell'attenzione, logiche

di esclusione o di cura). Sul piano della ricerca, la griglia facilita un'analisi comparativa interpretativa, perché consente di esaminare giochi differenti mediante categorie stabili, mantenendo però apertura all'ambivalenza e al contesto (ad esempio, distinguendo tra rappresentazioni "inclusive" e forme di inclusione solo apparente, tra accessibilità tecnica e accessibilità culturale, tra agency procedurale e agency relazionale). Sul piano educativo, la griglia può essere impiegata come dispositivo di mediazione: supporta la progettazione di attività di lettura critica, discussion-based learning e redesign, invitando student e docenti a motivare le proprie interpretazioni e a confrontare prospettive diverse. In entrambi i casi, l'obiettivo è rendere il videogioco leggibile come testo e come pratica: un oggetto culturale che non si limita a "contenere" significati, ma li produce attraverso le regole e le condizioni di partecipazione che rende possibili. A partire da questa funzione, la sezione seguente propone una lettura dei criteri della griglia come posture di analisi in chiave queer-critica, mostrando come ciascuna dimensione possa far emergere, in modo situato, tensioni tra normatività e disidentificazione, tra inclusione dichiarata e inclusione praticabile, tra rappresentazione e condizioni materiali del play.

4. VERSO UN'ANALISI DEI VIDEOGIOCHI IN CHIAVE DI QUEER MEDIA EDUCATION

Lo strumento originario sviluppato da Soriani (2024), centrato su valore autoriale e rilevanza tematica, accessibilità, specificità del gameplay, forme di interazione tra giocatore, qualità estetica e valore emotivo, qualità delle rappresentazioni e qualità dello storytelling, può essere riletto attraverso una lente queer che enfatizza dissonanza, ibridità e resistenza alle logiche normative. Entro una pedagogia queer-critica, ciascun criterio non opera soltanto come dimensione qualitativa per valutare l'adeguatezza di un gioco a una determinata attività, ma come postura analitica e politica: un invito a interrogare quali corpi, desideri e visioni del mondo vengano resi visibili e praticabili attraverso il play e quali, invece, risultino silenziati, disciplinati o resi marginali. In altri termini, la rilettura queer non "aggiunge" un tema ai criteri, ma ne modifica la funzione: sposta l'attenzione dall'elenco delle proprietà del gioco alle condizioni di possibilità dell'esperienza ludica, mettendo in relazione design, cultura e agency. La dimensione del valore autoriale e della rilevanza tematica costituisce un primo asse di indagine. Nella formulazione originale, il "valore autoriale" rimanda alla presenza di una voce o visione riconoscibile, capace di conferire all'opera un'intenzio-

Tabella 1. Strumento analitico per l'analisi dei videogiochi (Soriani, 2024) attraverso il modello Q.U.A.K.E. (Messina, 2025).

Dimensione trasversale Q.U.A.K.E.: Queer		
Entro un quadro queer-critico, la rilevanza tematica riguarda non soltanto ciò che viene rappresentato, ma anche quali esperienze, corpi ed epistemologie vengono legittimati. L'analisi delle tematizzazioni queer invita a porre attenzione ai processi di inclusione e di cancellazione, rendendo visibile come i giochi negozino identità, desiderio, cura e marginalità quali luoghi di significato instabili, contesi e potenzialmente trasformativi.		
In che modo il gioco può essere impiegato per promuovere una riflessione critica su identità, potere e differenza? Il gameplay può essere trasformato in una pratica di cittadinanza mediale e di giustizia narrativa?		
Dimensione	Descrizione	Domande guida
Valore autoriale e rilevanza tematica	Questa dimensione considera l'autorialità come una forma di conoscenza situata e relazionale, che riflette il posizionamento delle voci creative dentro e/o contro le strutture di potere dell'industria videoludica. Analizzare l'autorialità implica individuare in che modo scelte narrative, estetiche e di design esprimano intenzionalità etiche, politiche o affettive. La dimensione mette inoltre in luce le tensioni tra logiche mainstream e produzioni indipendenti o sperimentali, che possono configurarsi come pratiche di resistenza epistemica o come contro-narrazioni.	In che misura il team di sviluppo rivendica un'intenzionalità etica, politica o affettiva che legittima le esperienze di comunità queer, FLINTA* e BIPOC? Chi racconta la storia e da quale prospettiva culturale, di genere e/o geografica? Il gioco articola una visione autoriale che eccede la mera logica di mercato? Modalità produttive differenti (es. mainstream, indie, fan-made o art game) generano spazi di resistenza epistemica o contro-narrazione?
Accessibilità e giustizia del design	Questa dimensione esplora l'accessibilità come pratica epistemica e politica che ridefinisce partecipazione e agentività nell'esperienza di gioco. Si concentra su come le scelte di design affrontino la diversità fisica, sensoriale, cognitiva, culturale e linguistica non come insieme di "limitazioni", ma come fonti di conoscenza e di potenziale creativo. L'accessibilità è quindi intesa come un atto redistributivo di design justice, orientato a smantellare assunti normativi su chi possa giocare e appartenere.	Quali tipologie di giocatore possono identificarsi con il gioco e trovare al suo interno uno spazio esperienziale sicuro? Il design tratta differenze fisiche, sensoriali, cognitive o linguistiche come risorse, anziché come limiti? Il gioco include opzioni di personalizzazione, assistenza o modalità inclusive di gioco? Le scelte progettuali riconoscono e valorizzano la diversità culturale e cognitiva? In che modo l'accessibilità diventa uno strumento di emancipazione e di agentività per soggettività marginalizzate?
Specificità del gameplay e agentività	Il gameplay è interpretato come un linguaggio politico attraverso cui vengono messi in atto valori, ideologie e forme di agentività. Questa dimensione analizza come le meccaniche ricompensino o mettano in discussione paradigmi di competizione, efficienza e padronanza, portando in primo piano etiche alternative della cura, della cooperazione e della vulnerabilità. I giochi che consentono disobbedienza, trasgressione delle regole o scelta morale vengono letti come spazi performativi di emancipazione e di riflessione critica.	In che modo vengono rappresentati fallimento e vulnerabilità: come errori oppure come parti integranti di un processo di crescita? Il gioco consente scelte morali, percorsi alternativi o azioni non previste dal sistema? Le regole possono essere piegate o sovvertite, abilitando pratiche di disidentificazione? In che misura il gameplay traduce o problematizza paradigmi di efficienza, progresso e successo?
Forme di interazione tra giocatori	Questa dimensione si concentra sulle dinamiche relazionali e sociali che emergono attraverso sistemi multiplayer, comunità online e ambienti di gioco condivisi. Esplora come le strutture interazionali possano favorire empatia, solidarietà e appartenenza, oppure riprodurre esclusione, violenza e gerarchia. I giochi vengono così analizzati come spazi affettivi nei quali etiche relazionali e forme di resistenza collettiva possono essere praticate, negoziate o sovvertite.	Quali comportamenti e obiettivi il gioco incoraggia: competizione e conquista oppure cooperazione e cura? In che modo il gioco struttura le relazioni tra giocatori (cooperative, competitive o ibride)? Le comunità di gioco promuovono empatia, rispetto e appartenenza oppure riproducono tossicità e discriminazione? Esistono spazi di resistenza o safe space queer entro l'ambiente di gioco? I giocatori possono costruire alleanze affettive e narrative attraverso la collaborazione? Il gioco promuove ascolto e reciprocità oppure rafforza modelli gerarchici di interazione?

Valore estetico ed emotivo	Questa dimensione considera l'esperienza estetica e affettiva del play come luogo di risonanza politica e pedagogica. Le emozioni non sono trattate come stati privati, ma come pratiche sociali e culturali che modellano percezione e conoscenza. La progettazione estetica di un gioco (cioè la sua grammatica visiva, sonora e temporale) può coltivare empatia, contemplazione e critical world-building, offrendo sensibilità alternative che resistono a norme performative o iper-produttive.	Quali emozioni evoca il gioco: empatia, malinconia, cura, ironia, rabbia o meraviglia? In che modo scelte artistiche e sound design sostengono o amplificano la dimensione affettiva del play? Il ritmo del gioco incoraggia lentezza, contemplazione e introspezione oppure privilegia performance e adrenalina? L'estetica del gioco abilita forme di riconoscimento e risonanza politica rispetto a esperienze marginalizzate?
Qualità della rappresentazione	La rappresentazione è intesa come un luogo cruciale di costruzione e contestazione ideologica. Questa dimensione analizza come corpi, generi, sessualità, razze, abilità e culture vengano visualizzati, omessi o ri-immaginati attraverso design e narrazione del gioco. Mette in evidenza la persistenza di una bianchezza strutturale e dell'eteronormatività, riconoscendo al contempo le produzioni indipendenti o fan-made come spazi di attrito rappresentazionale e di resistenza culturale.	Quali corpi e identità sono rappresentati e quali, invece, restano invisibili o marginalizzati? Personaggi queer, femminili, razzializzati o con disabilità sono costruiti come complessi e multidimensionali oppure risultano meramente tokenizzati? In che modo nel gioco vengono costruiti corpi, ruoli di genere, potere e desiderio? Le scelte estetiche e narrative riproducono oppure mettono in crisi la bianchezza strutturale? In che modo emozione e riflessione critica si intrecciano nell'esperienza di gioco?
Qualità dello storytelling	Lo storytelling è analizzato come una forma di world-making etico e politico che struttura il modo in cui chi gioca esperisce giustizia, desiderio e coesistenza. Questa dimensione si concentra sulla complessità narrativa, sulla molteplicità delle prospettive e su temporalità non lineari o relazionali. I giochi che mettono al centro voci marginali, la cura o il fallimento sono letti come portatori di epistemologie alternative, ossia modi di conoscere fondati su empatia, ambiguità e trasformazione.	La narrazione offre prospettive multiple oppure mantiene una singola voce dominante? Il gioco consente scelte morali o percorsi divergenti? Sono presenti voci marginali, rappresentazioni BIPOC o FLINTA*, narrazioni della cura o esperienze di alterità? Le produzioni indipendenti o fan-made contribuiscono alla decostruzione di immaginari dominanti? Lo storytelling incoraggia una riflessione su giustizia, potere e coesistenza? In che modo la narrazione sfida linearità e temporalità normative (attraverso ritorno, sospensione o fallimento)?

nalità che eccede la logica di mercato. Da un punto di vista queer-critico, l'autorialità è anche situata e relazionale: chi è legittimato a raccontare storie nell'industria del gioco e a quali condizioni di visibilità? Produzioni indipendenti come *Dys4ia* (Anthropy, 2012a), *Gone Home* (Fullbright, 2013) e *If Found...* (Dreamfeel, 2020) esemplificano voci autoriali che destabilizzano narrazioni eteronormative mainstream mettendo in scena intimità queer, perdita e ritorno a casa. Il loro storytelling "a bassa scala" e centrato sugli affetti trasforma la memoria privata in uno spazio politico di riconoscimento. Al contrario, le grandi produzioni spesso cancellano o strumentalizzano la presenza queer secondo logiche di tokenismo rappresentazionale. Una pedagogia critica dell'autorialità invita dunque educator e giocatore a riconoscere le gerarchie economiche e culturali incorporate nei processi produttivi e a valorizzare voci marginali e sperimentali come luoghi di resistenza epistemica, capaci di rendere oggetto di discussione ciò che, nelle filiere mainstream, tende a presentarsi come naturale. La seconda

dimensione, l'accessibilità, va oltre la sola usabilità o il comfort ergonomico, perché include la politica dell'accesso: chi può giocare, chi può identificarsi e chi può trovare nel mondo di gioco uno spazio esperienziale sicuro. In questo senso, l'accessibilità non è soltanto una questione di design dell'interfaccia (sebbene difficoltà regolabile, sottotitoli o modalità per daltonismo restino essenziali), ma anche di leggibilità culturale e di apertura verso corpi diversi, neurodiversità e alfabeti alternativi all'interno del mondo di gioco. Titoli come *Celeste* (Matt Makes Games, 2018) o *Tell Me Why* (Dontnod, 2020) articolano l'accessibilità come apertura affettiva e narrativa: *Celeste* riformula la lotta con ansia e auto-accettazione entro una struttura platform impegnativa che considera il fallimento parte della crescita; *Tell Me Why* presenta un protagonista trans la cui identità non è né idealizzata né occultata, invitando chi gioca in uno spazio di riconoscimento empatico e reale. In una cornice queer, l'accessibilità implica dunque lo smantellamento di barriere non solo fisiche o tecniche, ma anche

cognitive, emotive e simboliche, che impediscono a soggettività marginalizzate di partecipare pienamente alla conversazione ludica e di riconoscersi come soggetti legittimi del play. Il terzo asse, la specificità del gameplay, riguarda il modo in cui le meccaniche incarnano idee, traducono valori in procedure e orientano l'esperienza di chi gioca. Se nella proposta originaria (Soriani, 2024) si sottolinea l'importanza di analizzare ciò che chi gioca fa e come il gioco risponde, una lettura queer-critica interpreta le meccaniche come sistemi performativi capaci di attuare o sovvertire norme. Meccaniche che premiano cura, collaborazione o ambiguità mettono in crisi paradigmi competitivi e teleologici storicamente associati alla maschilità e alla produttività capitalistica. Un titolo come *Kind Words* (Popcannibal, 2019) costruisce procedure di connessione e sostegno reciproco, anziché di dominio, mostrando che il play può configurarsi come etica della vulnerabilità. Al contrario, giochi che permettono di resistere o rifiutare percorsi attesi, come *Undertale* (Toby Fox, 2015), dove la misericordia non è solo un'opzione ma diventa gesto radicale, mostrano come la struttura ludica possa materializzare dissenso morale e affettivo. Inoltre, esempi come *JellyCar Worlds* (Walaber Entertainment LLC, 2022) o *Strashna 2* (Renderville Games, 2025) consentono a chi gioca di contribuire al gameplay registrando voci e suoni, partecipando così alla "scrittura" dell'esperienza. In questa direzione, l'analisi procedurale evidenzia come regole e circuiti di feedback possano essere letti come tecnologie del sé: copioni che chi gioca può abitare, piegare o disobbedire, rendendo la pratica ludica un luogo in cui si apprendono (e si possono disapprendere) norme. Le forme di interazione tra giocatore, quarta dimensione, acquisiscono un rilievo rinnovato nei contesti online, dove le identità vengono performati e negoziate collettivamente. Interazione, cooperazione e collaborazione diventano siti di esercizio di empatia, etiche relazionali e cura collettiva nelle comunità digitali, portando in primo piano l'apprendimento come co-esistenza più che come competizione. Gli spazi online spesso riproducono forme sistemiche di misoginia, razzismo e omotransfobia; al contempo, possono anche abilitare forme alternative di parentela e costruzione comunitaria. *Animal Crossing: New Horizons* (Nintendo, 2020) è diventato, in questo senso, una piattaforma di sociabilità queer, in cui utenti costruiscono isole come utopie sicure, celebrano pride virtuali e reinventano la domesticità come arte collettiva (Blanco-Fernández & Moreno, 2025). In *Journey* (Thatgamecompany, 2012), la componente multiplayer è stata progettata per favorire la cooperazione senza imporla, senza comunicazione né combattimento, invitando semplicemente a "stare" insieme, presenti. Leggere

le interazioni multiplayer attraverso la queer theory rende visibile il potenziale pedagogico dei giochi nel far sperimentare etiche relazionali, empatia e cura della differenza, competenze centrali per la cittadinanza digitale secondo il Consiglio d'Europa; allo stesso tempo, consente di tematizzare la vulnerabilità come condizione strutturale dell'online play, dove appartenenza e esclusione vengono continuamente rinegoziate. L'ambito della qualità estetica e del valore emotivo invita a discutere di sensibilità, affetti e forme di risonanza. Nello strumento originario, raffinatezza estetica e risonanza emotiva sono indicatori della capacità di un gioco di suscitare riflessione; la queer theory amplia questa nozione riconoscendo l'affetto come politico: le emozioni non sono meri stati privati, ma atti sociali che legano e differenziano i corpi. Giochi come *Gris* (Nomada Studio, 2018) o *Season: A Letter to the Future* (Scavenger Studio, 2023) estetizzano lutto, tenerezza e trasformazione tramite scelte di design che privilegiano fluidità, colore e riflessività rispetto al realismo. Le loro poetiche non verbali resistono alla razionalità strumentale della produzione mainstream e propongono temporalità alternative del play: più lente, contemplative, orientate alla cura. In ambito educativo e nell'analisi culturale, queste ecologie affettive offrono una contro-pedagogia del sentire che legittima la vulnerabilità come modalità di conoscenza e rende discutibile la norma dell'efficienza come valore ludico implicito. La qualità delle rappresentazioni è forse l'ambito più esplicitamente politico dello strumento, poiché sollecita ad analizzare come generi, etnicità, corpi e minoranze vengano raffigurati e resi significativi, invitando educatore a promuovere giochi che evitino stereotipi e favoriscano empatia. Una riformulazione queer-critica, tuttavia, sposta l'attenzione dall'accuratezza rappresentazionale all'attrito rappresentazionale: valorizza non solo immagini "positive", ma anche quelle che rendono visibili contraddizioni, assenze e fallimenti di riconoscimento. *The Last of Us Part II* (Naughty Dog, 2020) esemplifica tale ambivalenza: la protagonista lesbica è insieme potenziata e intrappolata in una narrazione di trauma e ritorsione. Il sudcoreano *Stellar Blade* (Shift Up, 2024) mette in scena la tensione persistente tra innovazione estetica e rappresentazioni di genere nel game design contemporaneo: la protagonista ipersessualizzata, costruita visivamente attorno a un ideale di perfezione corporea e femminilità portata agli estremi, accende un più ampio discorso culturale su bellezza, tecnologia e corpo nella società sudcoreana. Un ulteriore esempio è *Relooted* (Nyamakop, 2025), in cui un collettivo di attivista e ricercatore sudafricano ripatria manufatti sottratti dal colonialismo europeo: attraverso narrazione e meccaniche, il gioco mette in primo piano personaggi neri come agenti con-

sapevoli impegnati nel recupero dell'eredità culturale e nella riscrittura di storie di espropriazione, offrendo una contro-narrazione allo sguardo coloniale e riformulando la soggettività nera non solo come oggetto di rappresentazione, ma come vera e propria rivendicazione epistemica e culturale. Analizzare la rappresentazione in questa prospettiva significa dunque interrogare non solo chi appare sullo schermo, ma come operano, nel medium, strutture di visibilità e cancellazione e come tali strutture si intreccino con procedure di gioco e architetture relazionali. Infine, la qualità dello storytelling: in una lettura queer-critica, la "qualità" rinvia meno a coerenza o chiusura e più ad apertura, molteplicità e dislocazione. Narrazioni non lineari e frammentate, come in *Disco Elysium* (ZA/UM, 2019) o *Kentucky Route Zero* (Cardboard Computer, 2013–2020), invitano ad abitare l'incertezza e a costruire significato attraverso dialogo, fallimento e contraddizione. Queste storie rifiutano teleologia e identità stabili, incarnando una temporalità queer (Goltz, 2022): un tempo che si avvolge, si sospende e diverge. In contesti educativi, tali giochi possono modellare epistemologie alternative: modi di conoscere che privilegiano esplorazione, auto-interrogazione e solidarietà rispetto alla padronanza. Rileggere la tabella originaria attraverso una lente queerizzata trasforma dunque lo strumento da checklist a cartografia di tensioni: ogni asse di analisi diventa uno spazio in cui le norme culturali vengono provate, contestate o re-immaginate, e in cui l'esperienza ludica può essere resa oggetto di riflessione argomentata, non solo di consumo. Questa prospettiva risuona con Soriani (2021), che invita la adulta ad avvicinarsi ai giochi non come minacce morali o strumenti didattici, ma come forme culturali complesse che richiedono mediazione, curiosità e ottimismo. Un approccio fondato sulla QME estende tale invito: chiede a giocatore, educatore e studioso di sostare nelle zone indeterminate del play, dove l'apprendimento emerge dalla dissonanza e il piacere si intreccia con la critica. In questa visione, educare a una cultura del videogioco significa coltivare la capacità di leggere i giochi come testi vivi di desiderio, potere e immaginazione: una pratica che non solo amplia la media literacy, ma apre possibilità etiche ed estetiche per mondi digitali più inclusivi, plurali e compassionevoli.

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Spectatorship, bodies and digital hate: observing online hate speech and its implications for media education

Spettatorialità, corpi e odio digitale: un'analisi dell'hate speech online e delle sue implicazioni per la media education

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Abstract. In hyperconnected online environments, hate speech has become a structural component of digital communication, deeply affecting processes of identity construction, social interaction and citizenship. This article investigates online hate speech by shifting the focus from perpetrators and victims to digital spectatorship, understood as a critical yet often passive position within platform-mediated interactions. Drawing on media education and realistic evaluation frameworks, the study explores how users observe, interpret and respond to discriminatory discourse targeting bodies and identities that deviate from dominant norms. Empirical data were collected through a mixed-method evaluative survey administered to Italian social media users, combining quantitative measures with qualitative open-ended responses, and through the Nominal Group Technique involving a panel of experts with academic, professional and activist experience in the field of online hate speech. Findings reveal a high exposure to hate speech, widespread non-intervention and the presence of moral disengagement mechanisms. The article argues that countering online hate speech requires moving beyond protective approaches toward a media education framework oriented to responsibility, emotional awareness and active digital citizenship. The study outlines educational implications aimed at fostering critical autonomy, communicative responsibility and inclusive participation in digital public spaces.

Keywords: hate speech, digital spectatorship, realistic evaluation, media education, moral disengagement.

Riassunto. Negli ambienti online iperconnessi, l'hate speech è diventato una componente strutturale della comunicazione digitale, incidendo profondamente sui processi di costruzione dell'identità, di interazione sociale e di cittadinanza. Questo articolo indaga l'hate speech online spostando l'attenzione dagli autori e dalle vittime alla spettatorialità digitale, intesa come una posizione critica ma spesso passiva all'interno delle interazioni mediate dalle piattaforme. Facendo riferimento ai quadri teorici della media education e della realistic evaluation, lo studio esplora il modo in cui gli utenti osservano, interpretano e rispondono ai discorsi discriminatori rivolti a corpi e identità.

tà che deviano dalle norme dominanti. I dati empirici sono stati raccolti attraverso una survey valutativa con metodo misto somministrata a utenti italiani dei social media, e attraverso la Nominal Group Technique, che ha coinvolto un panel di esperti con esperienza accademica, professionale e attivista nel campo dell'hate speech online. I risultati evidenziano un'elevata esposizione all'hate speech, una diffusa tendenza al non-intervento e la presenza di meccanismi di disimpegno morale. L'articolo sostiene che il contrasto all'hate speech online richiede di superare approcci meramente protettivi, orientandosi verso un modello di media education fondato sulla responsabilità, sulla consapevolezza emotiva e sulla cittadinanza digitale attiva. Lo studio delinea inoltre implicazioni educative volte a promuovere autonomia critica, responsabilità comunicativa e partecipazione inclusiva negli spazi pubblici digitali.

Parole chiave: hate speech, spettatorialità digitale, realistic evaluation, media education, disimpegno morale.

1. INTRODUCTION

In today's hyperconnected world, in which individuals act and construct meaning, the traditional distinction between online and offline is increasingly inadequate for describing the complexity of social and communicative practices. As noted by Floridi (2015), the neologism «onlife» captures the dynamic interconnection between the digital and the material dimensions, conveying the idea of a unified living environment in which information and communication technologies profoundly affect the human condition. These technologies do not merely mediate communication; they also reorganise spatial and temporal experience, as well as ways of relating to oneself, to others and to the world. In doing so, they challenge established paradigms and produce hybrid forms of subjectivity and identity.

Within this scenario, the Self, understood as a dynamic and relational social construction, is constantly negotiated through mediated interactions that are amplified and regulated by digital platforms and non-neutral socio-technical devices (Masterman, 1985). In these contexts, the boundaries between public and private are redefined, and the 'dramaturgical' dynamics of self-presentation intensify (Goffman, 1956). It is within this communicative arena that the growing manifestations of online hate speech emerge, a phenomenon that has acquired crucial educational relevance, especially with the advent of social media. Discursive hate, motivated by forms of discrimination related to ethnic origin, gender, sexual orientation, religion or disability, cannot be understood or addressed without considering the structuring role of media as environments of life and as «philosophical devices» that shape cultural universes and individuals' relationships with reality, with themselves and with others (Cappello, 2010).

From this perspective, media education¹ emerges as a fundamental theoretical and practical field for promot-

ing critical, reflective and participatory competences that support the exercise of responsible and informed digital citizenship within the new onlife public sphere, as well as a strategic node for interpreting and countering the communicative dynamics that fuel online hate speech. However, media education should not be reduced to a merely protective or defensive approach. Rather, it must be conceived as an empowering educational process aimed at developing media competence (Medienkompetenz; Baacke, 1997), enabling individuals to engage with media environments in critical, informed and creative ways (Perfetti, 2020).

In light of the globalisation of communication and the centrality of digital technologies, educational institutions are increasingly called upon to foster what has been described as a 'fourth dimension' of learning: a set of competences related to the critical and ethical use of information and communication technologies. Within this framework, media education can be understood as a multidisciplinary and transversal approach oriented towards the development of critical autonomy (Masterman, 1985) and lifelong media competence (Martínez-de-Toda, 1998). We may therefore argue that media education is closely linked with citizenship education, as a privileged space for mediating participation and fostering practices of reflexivity, responsibility and active engagement oriented towards the construction of a more inclusive and democratic media culture (Adamoli, 2020).

While existing research has mainly focused on perpetrators and victims of hate speech, less attention has been given to those who witness these dynamics without being directly involved. This article addresses this gap by focusing on 'digital spectatorship', often characterised by passive observation within platform-mediated interactions. It argues that spectators play a key role in either reinforcing or challenging online hate speech, thus contributing to debates on the bystander effect, platformed witnessing and digital citizenship. By plac-

¹ According to Buckingham's definition (2003), media education can be understood as the process of teaching and learning *about* the media,

while media literacy represents its outcome in terms of knowledge, skills and critical attitudes.

ing spectators at the centre, the article highlights the link between everyday online practices and broader educational and civic implications.

2. EMPIRICAL PROJECT²

The empirical research is situated within the PRIN 2022 project “Theories, Philosophies and Politics of Bodies in Network-Connected Digital Universes” (Prot. 2022FENML2), which investigates transformations in the relationships between texts, bodies and communicative practices within networked digital universes³. These environments are understood as genuine informal educational contexts and online spaces of socialisation. The research considers digital media not merely as channels of transmission or spaces of expression, but as symbolic environments and socio-technical devices that actively contribute to the construction of meanings, identities and power relations (Meyrowitz, 1985), thereby influencing processes of learning, participation and citizenship.

Drawing on an interdisciplinary approach that integrates political and linguistic philosophy, social psychology, cultural anthropology and the sociology of communication, the project aims to critically rethink the notions of text and body considering digital interactions. It examines how online representations of bodies and discursive practices shape forms of visibility, recognition and exclusion. Within this framework, manifestations of online hate speech are treated as an emblematic phenomenon of the educational tensions that cross the digital public sphere, and as a privileged field for observing both the limits and the potential of individuals’ media competence.

Within this wider research context, the present article specifically focuses on digital spectatorship of online hate speech, with the aim of understanding how individuals who witness discriminatory content interpret and respond to it, and how these processes relate to media competence and educational practices. The epistemological ambition of the study therefore lies in

the co-construction of a critical understanding of the ways in which representations and performativity of bodies in digital spaces affect citizens’ lives, by relating these dynamics to processes of media literacy, empowerment and informed participation. From this perspective, empirical research plays a central role in translating the theoretical framework of media education into empirically grounded evidence capable of informing not only academic debate, but also the design of educational interventions and the development of public policies aimed at promoting a more inclusive and democratic media culture.

The empirical investigation adopted a realist evaluation framework (Pawson & Tilley, 1997; Pawson, 2006), a methodological approach based on empirical evidence that allows the ‘black box’ of the object of study to be opened by analysing the mechanisms underlying the interaction between context and outcomes. This methodology operates through the model M (Mechanism) + C (Context) = O (Outcome) (Pawson & Tilley, 1997, p. 130), framing the inquiry not as a mere description of results, but as an investigation of the processes that generate them, within a constant process of reciprocal causation. Contextual factors were operationalised through socio-demographic variables and patterns of platform use; mechanisms were examined through users’ perceptions, interpretative processes and attitudes (e.g., moral disengagement); outcomes were identified in observed behaviours, such as exposure to hate speech and forms of reaction or non-intervention. The research is therefore structured into two integrated phases: an Evaluative Survey Analysis phase and a phase based on the application of the Nominal Group Technique, aimed at the critical interpretation of the findings through expert judgement⁴.

3. THE EVALUATIVE SURVEY

3.1 Design and analytical orientation

The empirical investigation included the administration of an evaluative survey (Palumbo & Scardigno, 2024) based on a multi-method data collection strategy. The instrument was developed from exploratory research questions focusing on the representation of bodies on social media in relation to normative discourses on gender and sex, on social reactions to bod-

² The authors would like to thank the research team that contributed to the analysis of the relevant literature and to the development of the survey: Maria Rosaria Vitale, postdoctoral research fellow at the University of Urbino; Alessia Franco and Edoardo Maria Bianchi, postdoctoral research fellows at the University of Bari. The authors also wish to thank Teresa Ester Cicirelli and Domenico Emiliano, PhD candidates at the University of Bari, for their significant contribution to the various phases of the research, from the construction of the survey to the analysis of the collected data and the implementation of the Nominal Group Technique phase.

³ The PRIN 2022 project *Theories, Philosophies and Politics of Bodies in Network-Connected Digital Universes* (Prot. 2022FENML2) is coordinated by Professor Francesca Romana Recchia Luciani.

⁴ The data generated through the analysis of the survey and the application of the Nominal Group Technique are intended to be included in a collective publication within the proceedings of the PRIN 2022 project “Theories, Philosophies and Politics of Bodies in Network-Connected Digital Universes” (Prot. 2022FENML2), which is currently in preparation.

ies that deviate from dominant norms and on the ways in which such bodies are excluded or marginalised within the digital ecosystem. These research questions were operationalised through a structured process of conceptual decomposition, in line with a Lazarsfeldian approach, which translated key constructs into analytically manageable dimensions, variables and empirical indicators. The structure of the questionnaire was organised around four main analytical units – bodies and gender, bodies and intersectionality, hate speech and communicative functions, and moderation – which guided the formulation of items. Attention was devoted to examining the frequency and forms of discrimination, verbal violence and hate incitement, as well as users' perceptions of hateful content and of the mechanisms through which such phenomena are normalised, contested or amplified within platforms.

The final questionnaire consisted of 59 items, including cardinal, ordinal and categorical variables and incorporated the use of Likert scales to capture attitudes and perceptions. While no fully validated scales were adopted, item construction was developed through a collaborative team-based process, drawing inspiration from established instruments such as the Moral Disengagement Scale (Bandura et al., 1996), the Coping with Cyberbullying Questionnaire (CWCBQ) and the Hate Speech Intensity Scale⁵. A pre-test was conducted with researchers and participants external to the survey design process, allowing for the refinement of item clarity, coherence and relevance.

In addition to the analysis of quantitative aspects, the survey included a qualitative examination of participants' comments and open-ended responses, thus enabling a complex reading of the phenomena under investigation. The collected data constituted the basis on which the subsequent Nominal Group Technique phase was developed, involving experts in the critical interpretation of perceived differences across target groups. The empirical evidence was analysed not only as descriptive indicators of online communicative practices, but also as interpretative resources for interrogating levels of awareness, responsibility and media competence among the subjects involved. The investigation therefore aims to understand to what extent the ability to recognise, interpret and problematise hateful discourses and discriminatory representations of bodies may inform educational practices oriented towards the development of critical autonomy, communicative responsibility and forms of active and informed digital citizenship. In this sense, the survey does not merely record attitudes and perceptions,

but also contributes to identifying educational nodes and critical issues on which to intervene to promote a more inclusive and reflective media culture.

3.2 Sampling

As the primary target consisted of Italian social media users, a mixed non-probabilistic sampling strategy was adopted, combining two complementary approaches: convenience sampling, based on the voluntary participation of individuals who chose to complete the questionnaire and snowball sampling, whereby respondents were encouraged to disseminate the questionnaire to other potential participants. Given the nature of the recruitment process, the resulting sample cannot be considered representative of the Italian population of social media users and should be interpreted as a situated and context-specific group.

The survey was administered online via the Google Forms platform. Data collection took place between 16 July and 16 October 2025. The instrument was initially distributed through social media channels and personal contacts and subsequently circulated through participants' networks. This mode of recruitment may have influenced the composition of the sample, contributing to its geographical concentration and relatively high educational level, as well as potentially involving individuals with greater sensitivity or interest in the topic. The only inclusion criterion for participation was residence within the Italian territory.

a. Methodology

Data analysis was conducted using an integrated quantitative-qualitative approach. Data preparation, initial cleaning, management of missing data and variable recoding were carried out in Microsoft Excel. Statistical analyses were performed using the Jamovi software, while open-ended responses were recoded and analysed using NVivo.

The research followed a two-stage methodological design implemented through Jamovi. The univariate phase involved the examination of frequency distributions of the variables considered, producing descriptive tables that outlined the aggregated profile of the sample through absolute frequencies and relative percentages. This approach made it possible to assess the overall composition of the studied population and the prevalence of the experiences and opinions investigated. The bivariate phase was conducted through the analysis of contingency tables, which revealed methodologically relevant interrelationships between pairs of variables and identified key structural intersections within the

⁵ The latter were used only in specific sections of the broader survey not directly addressed in this article.

sample. The use of chi-square (χ^2) tests complemented the descriptive analysis by assessing the statistical significance of the observed associations, while association indices (Phi, Cramér's V) were employed to quantify the strength of these relationships.

Missing data were handled through a case-sensitive approach. Relative frequencies were calculated based on valid responses for each item, in order to avoid distortions due to non-response. For inferential analyses, cases with missing values were excluded where necessary, ensuring the robustness of statistical testing without introducing artificial estimations.

Variable recoding was applied selectively to enhance analytical clarity and ensure statistical reliability. In particular, the geographical variable was recoded into a dichotomous form (Puglia vs. the rest of Italy) due to the marked regional imbalance within the sample. Similarly, items related to moral disengagement were grouped into broader conceptual dimensions drawing on Bandura's theoretical framework. These clusters were then binary recoded (presence vs. absence of the attitude), enabling the construction of descriptive frequency tables and facilitating cross-tabulation.

Open-ended responses were analysed through a structured qualitative coding process aimed at identifying recurring patterns of interpretation and behaviour. Data were imported into NVivo and coded using a bottom-up approach to identify recurrent behavioural categories. The coding process was conducted by a single coder, and no intercoder reliability procedures were applied. Nonetheless, to enhance internal coherence, iterative cycles of code refinement were employed, ensuring

consistency across categories (reporting, defensive intervention, non-intervention).

b. Structural analysis of the sample

The empirical investigation produced a final dataset of $N = 457$ valid cases. The analysis of the structural variables reveals a sample affected by specific selection biases, which delimit its scope of representativeness. From a gender perspective, there is a marked predominance of women (63.0%) compared to men (35.5%). The age distribution shows a strong concentration in adulthood, with the 26-35 age group as the statistical mode (43.4%), while the 36-50 and 51-65 age groups are both consistently represented (13.0% each). Although a minority, the over-65 group is not negligible (6.2%). Overall, the age profile confirms the extension of digitalisation processes to more mature cohorts (Fig. 1).

From a territorial point of view, the sample includes respondents from 14 Italian regions but displays a strong over-representation of Puglia ($N = 325$, 75.1% of the total, Fig. 2), in line with the adopted sampling strategy. The low frequencies observed in the other regions do not allow for robust statistical comparisons. Consequently, the geographical variable was recoded in a dichotomous form (Puglia vs the rest of Italy) in order to ensure greater analytical reliability in subsequent analyses. At the same time, this territorial concentration should be taken into account when interpreting the findings, as it may reflect context-specific cultural and social dynamics that influence perceptions and responses to hate speech.

The sample is also characterised by a high level of cultural capital, with a pronounced high-education

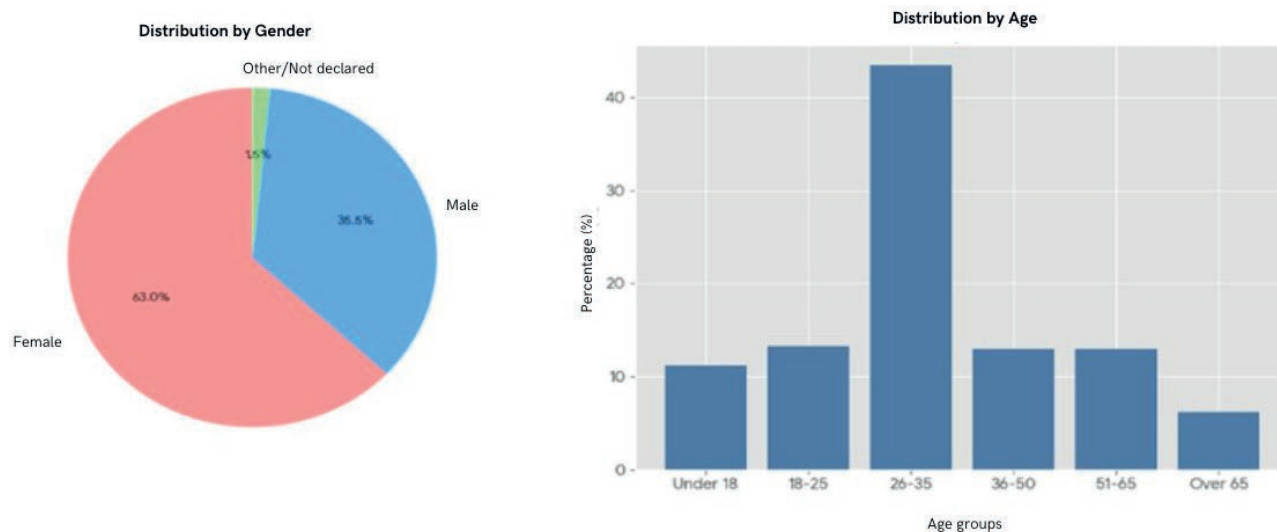


Figure 1. Distribution of the sample by gender and age. The charts and tables were produced using the Jamovi software or Microsoft Excel.

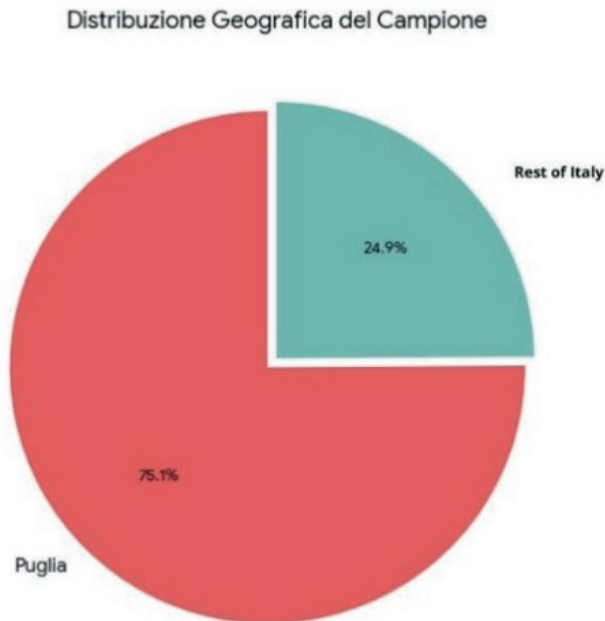


Figure 2. Geographical distribution of the sample.

bias: 63.5% of respondents hold a university or post-graduate qualification. This profile is reflected in the occupational composition, which includes a substantial proportion of students (27.4%), including doctoral candidates, alongside employees and self-employed professionals. Such a composition may be associated with higher levels of awareness and interpretative sensitivity towards discriminatory discourse, potentially influencing both the recognition of hate speech and the propensity to reflect on or respond to it. Finally, patterns of digital consumption reveal a strong platform- and age-based polarisation, outlining a generational segmentation of digital spaces: Instagram is predominant among young adults, TikTok among Generation Z and Facebook among older cohorts, with no evident gender-based differences (Fig. 3).

4. WITNESSING ONLINE HATE SPEECH: DYNAMICS, PERCEPTIONS AND BEHAVIOURS

The data collected through the survey were organised into three main thematic areas: representations of online hate speech, perceptions of online hate speech and moderation practices. This paper focuses on social media users who have witnessed episodes of online hate speech without being direct victims, with the aim of describing the observed dynamics and the behaviours

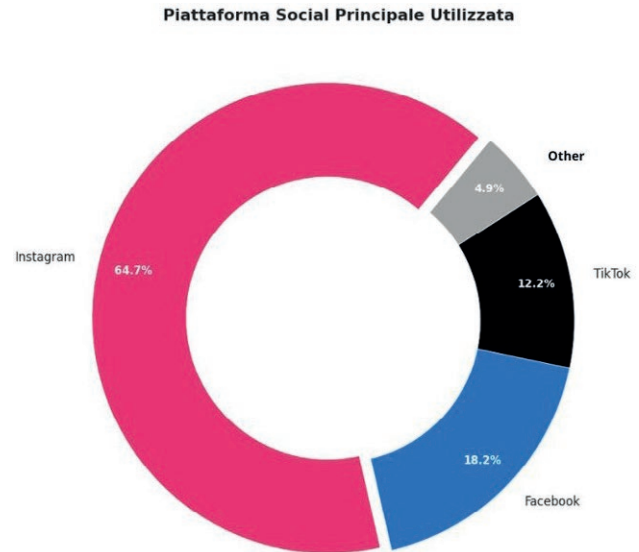


Figure 3. Distribution of social media use.

that result from them. The analysis was guided by the following research questions⁶:

- Q1: How many participants have witnessed episodes of online hate speech, and how frequently?
- Q2: What is the main underlying dimension of the online hateful content observed?
- Q3: How do individuals who witness hate speech react?
- Q4: Do social media users display attitudes of moral disengagement?

Q1: How many participants have witnessed episodes of online hate speech, and how frequently?

The survey analysis shows that most participants have witnessed episodes of online hate speech with some

⁶ Methodological note: in order to conduct a targeted analysis of the dynamics related to the experience of online hate speech, a filter was applied to the overall dataset to isolate only those participants who reported having observed at least one episode of hate speech on social media. This step made it possible to focus the analysis on a subsample representing 89% of the total sample, which contained the data necessary to address the research questions. In the research questionnaire, responses to the questions on the frequency of exposure to hate speech (specifically 'Rarely', 'Sometimes' and 'Often') triggered a series of additional drop-down questions designed to further explore the types of episodes observed and the subsequent behavioural reactions. This branching structure made the application of the filter not only appropriate but methodologically necessary to correctly analyse the sections of the questionnaire that were available exclusively to respondents with experience of exposure to hate speech. By contrast, the dimensions related to moral disengagement were measured through a set of Likert-scale items administered to the entire sample.

degree of frequency (Tab. 1). Only 10.3% of respondents report having never encountered such episodes, while 15.8% state that they have observed them rarely. A substantial proportion of participants (37.4%) report having witnessed hate speech ‘sometimes’ (2–4 episodes), and 36.1% indicate that they have seen it ‘often’ (five or more episodes). Only a very small share of respondents (0.4%) report that they do not know or cannot recall the frequency. Overall, these data indicate that 89% of the sample – 409 respondents out of 457 – have witnessed at least one episode of digital hate speech. Approximately 73.5% of participants report repeated exposure to online hate speech (from ‘sometimes’ upwards), highlighting both the pervasiveness and the consistency of the phenomenon within the analysed population.

Table 1. Frequency of observation.

FR_Frequency observation	Frequencies	% del Total	% Cumulative
0 (never)	47	10.3%	10.3%
1 (rarely)	72	15.8%	26.0%
3 (sometimes)	171	37.4%	63.5%
5 (often)	165	36.1%	99.6%
9 (Don't know / cannot recall)	2	0.4%	100.0%

The analysis of the relationship between demographic variables and the frequency of witnessing online hate speech produced differentiated results by gender and age. While no statistically significant association emerged between gender and frequency of exposure, age appears to be a significant factor in shaping patterns of exposure (Fig. 4).

Test χ^2			
	Valore	gdl	P
χ^2	8.10	16	0.946
N	457		

The chi-square test ($\chi^2 = 65.3$; $p < 0.001$) confirms the existence of a statistically significant relationship between age groups and the frequency with which hate speech episodes are observed. Central age groups (2: 18–25, 3: 26–35, and 4: 36–50) report higher levels of exposure or awareness of the phenomenon.

Test χ^2			
	Valore	gdl	P
χ^2	65.3	24	<.001
N	457		

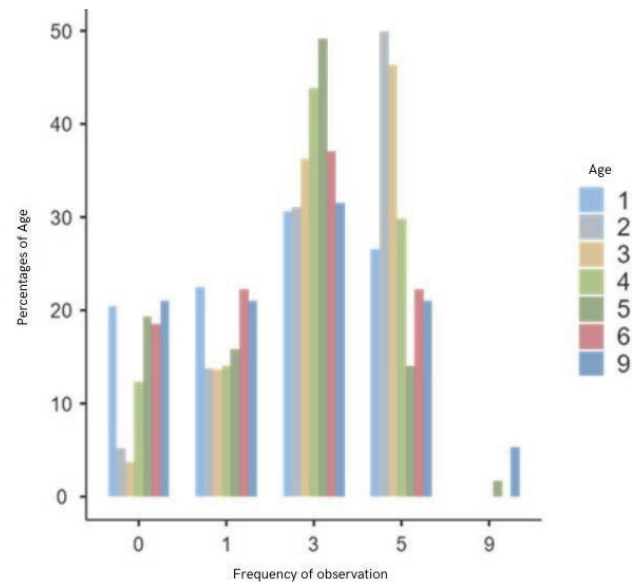


Figure 4. Relationship between frequency of observation and age groups.

In particular, 50.0% of participants in age group 2 report having observed hate speech ‘often’ (five or more episodes), while the corresponding proportions are 46.3% for group 3 and 29.8% for group 4. By contrast, participants in the youngest (1: under 18) and oldest age groups (5: 51–65 and 6: over 65) tend to report less frequent observations, with higher percentages in the ‘never’ or ‘rarely’ categories⁷.

The analysis also considered the relationship between having been a victim of hate speech and having witnessed at least one episode of digital hate speech. Within the total sample ($N = 457$), 32% of participants report having personally experienced hate speech on social media. The contingency table analysis reveals a significant association between having been targeted by hate speech (RO – receipt of offences) and the frequency with which users report witnessing hostile behaviour directed at others (FR – frequency of observation). The chi-square test confirms that these two variables are not independent.

Test χ^2			
	Valore	gdl	p
χ^2	19.4	8	0.013
N	457		

⁷ In order to mitigate the bias associated with the mixed non-probabilistic sampling strategy, which combines convenience and snowball sampling, exposure rates to hate speech were calculated within each age subgroup. This approach enabled a more differentiated and robust analysis of exposure patterns across the different demographic segments.

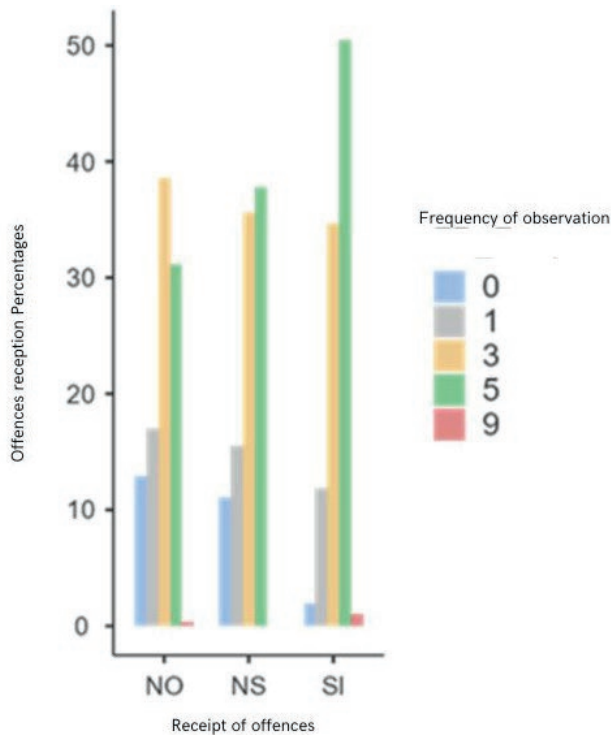


Figure 5. Relationship between witnessing hate speech and having experienced it.

Users who report having been victims of hate speech tend to observe such episodes more frequently than those who have not experienced direct victimisation (Fig. 5). This pattern may be interpreted in different, not mutually exclusive ways. On the one hand, individuals who have been targeted may be more frequently exposed to contexts in which such behaviours occur; on the other, prior experience of victimisation may be associated with a greater attentiveness to or awareness of hostile interactions (Waldron, 2012; Goffman, 1963). While the present data do not allow these dimensions to be clearly disentangled, they suggest that personal experience of hate speech is linked to differences in how such phenomena are perceived and reported.

Q2: What is the main underlying dimension of the online hateful content observed?

The in-depth analysis of the survey results indicates that the primary target dimensions of online hateful content relate to physical appearance, sexual orientation and political opinions. These are followed, with lower but still significant frequencies, by dimensions related to ethnicity and gender (Fig. 6). The prominence of physical appearance as a primary target

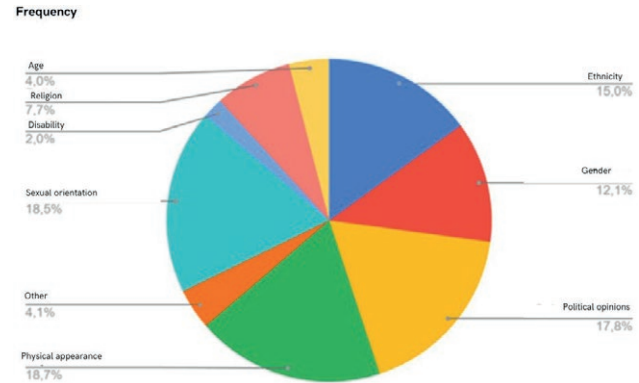


Figure 6. Target dimensions of hate speech.

appears particularly relevant considering the centrality attributed to the body within the theoretical framework of this study. In digital environments characterised by high levels of visibility and rapid circulation of images and representations, the body may become a key site of exposure and evaluation. Normative expectations concerning what bodies should look like, often shaped by dominant aesthetic, gendered and cultural standards, can be reproduced and reinforced through online interactions. Within this context, bodies that deviate from these norms may be more easily perceived as ‘other’ and, as such, more frequently exposed to hostile or exclusionary discourse.

Q3: How do individuals who witness hate speech react?

To investigate the reactions of individuals who have witnessed episodes of online hate speech, the survey included an open-ended question. The use of this unstructured item made it possible to collect detailed descriptions of reactions and actions taken, capturing nuances and behavioural complexity that would have been difficult to detect through closed-ended items. Responses were subsequently subjected to systematic qualitative coding: each response was carefully read and categorised according to the type of reaction reported (identified categories: reporting, defensive intervention, and no intervention). Attention was devoted to the treatment of ambiguous or mixed responses. In cases where participants described multiple actions, the dominant or most explicitly emphasised behaviour was selected for coding, while responses that were difficult to classify were discussed in relation to their contextual meaning and assigned to the most coherent category. The final set of categories should therefore be understood as the result of a process of analytical synthesis, aimed at balanc-

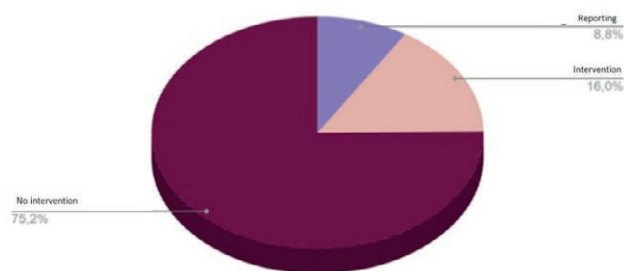


Figure 7. User reactions to online hate speech.

ing descriptive richness with the need for comparability across cases. The coding process was conducted using NVivo, which enabled the management and aggregation of textual data, the synthesis of emergent categories and the quantification of their distribution within the subsample. This approach transformed qualitative responses into statistically analysable categorical variables, while preserving the informational richness of participants' reported experiences.

The survey results show that, when faced with episodes of hate speech, most individuals tend not to intervene actively: 75% of respondents report that they did not take part in the discussion. A smaller proportion (16%) state that they intervened by commenting or defending the targeted individual, while only 9% chose to report the discriminatory content (Fig. 7). Overall, the data reveal a predominance of passive attitudes and limited engagement in counteractive actions. This pattern reflects the well-documented «bystander effect» (Latané & Darley, 1970; Markey, 2000), namely the tendency of observers not to intervene in critical situations, which appears particularly pronounced in digital environments.

This tendency can also be interpreted in light of Computer-Mediated Communication models. According to the Social Identity Deindividuation (SIDE) model (Spears & Lea, 1992), when contextual cues such as appearance, status or age are reduced, individuals tend to perceive themselves less as unique subjects and more as members of a social group. Drawing on Social Identity Theory (Tajfel, 1978) and Self-Categorization Theory (Turner et al., 1987), this perspective suggests that anonymity does not simply foster disinhibited or antisocial behaviour, but may also strengthen alignment with group norms when social identity becomes salient. In highly populated digital environments, this may reinforce passive conformity when non-intervention appears to be the dominant behaviour.

Q4: Do social media users display attitudes of moral disengagement?

The analysis indicates that social media users do indeed tend to display attitudes due to mechanisms of moral disengagement, as theorised by Bandura and operationalised in the Moral Disengagement Scale (1996), which informed the construction of the items used in this survey⁸. These processes appear to be amplified in digital contexts, where the mass presence of spectators and technological mediation foster dynamics of collective de-responsibilisation⁹. In this sense, the reduced visibility of individual identity and the salience of group dynamics in online environments may favour processes of deindividuation, as suggested by the SIDE model, thus contributing to the diffusion of responsibility observed in the data. Moreover, platform architectures contribute to the redistribution and obscuring of moderation responsibilities, encouraging a systemic delegation that reduces users' perception of individual agency (Gillespie, 2018).

In particular, the results reveal a marked prevalence of two mechanisms (Fig. 8): diffusion of responsibility

⁸ In constructing the items related to moral disengagement, reference was made to Bandura's Moral Disengagement Scale (1996), adopting a revised version adapted to the context of digital communication. Bandura identifies eight mechanisms of moral disengagement: moral justification, advantageous comparison, euphemistic language, displacement of responsibility, diffusion of responsibility, minimisation or distortion of consequences, attribution of blame and dehumanisation of the victim. For reasons of effectiveness and brevity in online administration, as well as to emphasise the processes most relevant in digital contexts, a reduced version comprising six conceptual clusters was adopted. Accordingly, two clusters from the original scale were merged with conceptually related ones in order to reduce item redundancy and enhance the interpretative clarity of responses. Specifically, the mechanism of displacement of responsibility was integrated into the items related to diffusion of responsibility, as both can be traced back to processes of de-responsibilisation of individual agency, which are amplified in digital environments characterised by a real or perceived plurality of observers. Similarly, the mechanism of minimisation or distortion of consequences was incorporated into the items relating to both euphemistic language and advantageous comparison. This choice is motivated by their shared function of attenuating the perceived severity of hostile conduct: in the former case through linguistic and semantic strategies that reduce the emotional impact of harm and in the latter through comparative processes that relativise the action in relation to behaviours perceived as more serious. In digital contexts, these mechanisms tend to co-occur and overlap in discursive practices, making a clear empirical distinction between them difficult. This reorganisation made it possible to ensure theoretically adequate coverage of the main mechanisms of moral disengagement, while maintaining a more streamlined measurement instrument, consistent with the communicative specificities of social media and functional to the analysis of passivity and non-intervention in the presence of online hate speech.

⁹ These dynamics can be linked to the bystander effect described by Latané and Darley (1970) and subsequently adapted to computer-mediated communication environments by Markey (2000).

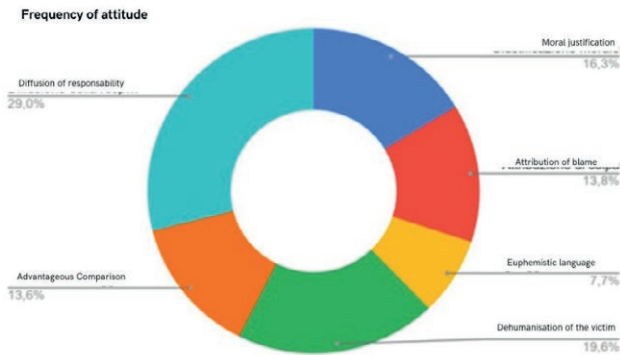


Figure 8. Attitudes of moral disengagement.

and dehumanisation of the victim. Diffusion of responsibility emerges as the most widespread process, with 29% of users acknowledging this attitude. This finding supports the theory that the real or perceived presence of numerous online observers reduces individual responsibility, fostering a tendency towards inaction. In digital environments, the massive and often anonymous nature of social media significantly amplifies this phenomenon, leading to systemic de-responsibilisation. Dehumanisation of the victim represents the second most frequent mechanism, involving 20% of the sample. This cognitive and relational process allows individuals to perceive others as lacking full humanity, thereby reducing empathy and emotional resonance in the face of hostile or conflictual content. Such distancing facilitates psychological disengagement and a lower propensity to intervene¹⁰. Moreover, the affordances of computer-mediated communication allow for selective self-presentation and limited exposure to contextual cues, which, as highlighted by the Hyperpersonal model (Walther, 1996), may intensify interaction processes. In such environments, users can strategically control the information they disclose, idealise their interlocutors on the basis of partial cues and construct messages more reflectively, thereby amplifying both relational involvement and the polarisation of evaluative judgments.

¹⁰ It should nevertheless be noted that the reliability of responses to these items may be partially compromised by social desirability bias. As these attitudes and cognitive processes are socially stigmatised, it is plausible that participants tended to underestimate their own involvement in mechanisms of moral disengagement, providing responses perceived as more socially acceptable. This bias represents an inherent limitation of self-reported measures of moral constructs and should be considered when interpreting the results.

5. NOMINAL GROUP TECHNIQUE

The subsequent phase of the research applied an online and asynchronous adaptation of the Nominal Group Technique (NGT) (Delbecq & Van de Ven, 1971; Duncan Smith et al., 2024; Dal Mas et al., 2023a e 2023b) in order to involve experts in a critical evaluation of the survey findings and in the formulation of operational strategies focused on the theme of the 'body'. The process was structured in three phases:

1. preliminary individual interviews aimed at collecting exploratory contributions;
2. qualitative analysis and thematic coding of the materials, conducted using NVivo software, with the aim of constructing a structured set of operational items;
3. an asynchronous evaluation and prioritisation phase, in which experts expressed their judgements on the proposed items.

Six experts participated in the interviews, selected on the basis of criteria of high theoretical and practical expertise in the field of online hate speech. In particular, the selection considered: academic expertise in areas such as gender studies, disability and queer studies, critical pedagogy and inclusive communication; professional or activist experience in transfeminism, queer, crip or LGBTQIA+ contexts; and positions of responsibility in research, public engagement, cultural production or the DEI sector.

Regarding the macro-theme of the perception of online hate speech, the question submitted to the experts was the following:

Based on the survey results, it emerges that online discrimination phenomena are widespread (73% of users observe discriminatory content sometimes or often) and that counteractive interventions remain limited: only 16% comment or defend victims, 9% report the content, while 75% do not intervene at all. Moreover, certain attitudes such as diffusion of responsibility and dehumanisation of the victim appear to be relatively widespread and may represent significant psychological barriers to active engagement. Considering these data, which concrete interventions do you believe could be implemented to raise awareness and transform the passive perception of hate into active counteraction and prosocial interventions, particularly when the target concerns individuals whose bodies or identities diverge from dominant normative representations?

The interviews, once transcribed and coded, generated operational strategies clustered into macro-areas, which were then submitted to the NGT to prioritise mechanisms for countering hate speech and addressing

the emotional vulnerability of victims. Each expert had access exclusively to the list of items¹¹ to be evaluated and assigned priorities individually and independently, without any possibility of mutual influence. Evaluations were collected anonymously, in order to protect participants' confidentiality and the integrity of the process. This procedure enabled straightforward score extraction and accurate data analysis. The outcomes of the evaluative process will ultimately feed into a dissemination output, culminating in the production of a *vademecum* dedicated to the valorisation of the theme of the 'body' and oriented towards the definition of guidelines addressed to public decision-makers.

5.1 Results of the NGT

In the evaluation phase of the NGT method (Bertin, 2011), experts' contributions were analysed with respect to the effectiveness and priority of operational strategies for countering online hate speech. The NGT results show a strong convergence among experts towards an integrated and multi-level model for addressing online hate speech, which articulates interdependent interventions at the individual, community and educational-cultural levels, with significant differences in the prioritisation of specific actions (Bronfenbrenner, 2005).

At the level of individual intervention, an interpretative tension emerges between a perspective that prioritises the recognition of hate speech as a cognitive and cultural prerequisite for action and an orientation more strongly focused on immediate relational intervention. While one expert assigns the highest priority to recognising subtle and normalised forms of hostility, other experts place direct support for the victim at the top, understood as an action capable of immediately affecting dynamics of isolation and symbolic rebalancing in digital spaces. Reporting hostile content, although recognised by all as a necessary and accessible practice, tends to occupy a subordinate or intermediate position, signalling a shared assessment of its structural limitations when not accompanied by broader processes of awareness and responsibility-taking. At the level of coordinated community intervention, a stronger convergence is observed. Self-organised community moderation and collective support actions emerge as the strategies with the greatest potential impact, as they can amplify responses, interrupt the spiral of silence and alter perceptions of social consensus in hostile contexts. The interruption of the spiral of silence is frequently

positioned immediately afterwards, as a complementary practice that strengthens alliances and reduces the intimidating effect of hate speech. By contrast, the re-signification of hostile terms, although recognised as culturally relevant, is consistently placed last, likely due to its greater complexity and the risk of ambiguous outcomes in the absence of strong community support. Within the educational-cultural domain, evaluations display both convergence and differentiation. School-based education and widespread training are unanimously recognised as fundamental strategic levers for structural and lasting change. Differences emerge, however, in the assessment of support actions: some experts assign greater relevance to everyday micro-interventions and 'sentinel' figures as mechanisms for lowering the threshold for activation, while others place greater value on public awareness campaigns and reflexivity devices at the point of platform access. Overall, these differences do not constitute conflicting positions but rather reflect situated and contextual readings of the effectiveness of strategies, reinforcing the interpretation of the proposed actions as complementary and flexibly activatable depending on resources, contexts and the subjective conditions of those involved.

Taken together, the evaluations delineate an orientation that privileges diffuse responsibility over exclusive delegation to platforms and conceives the countering of hate speech as a continuous, situated and relational educational process. This interpretation is consistent with perspectives from Adaptive Structuration Theory (DeSanctis & Poole, 1994), according to which users actively appropriate technological environments, reproducing or transforming communicative norms through their situated practices. Within this framework, the critical position expressed by one expert regarding the possibility of rigid hierarchisation of strategies further reinforces the interpretation of the proposed interventions as complementary and context-dependent, shaped by available resources and subjective conditions (Gagliardone et al., 2015).

6. EDUCATIONAL IMPLICATIONS

The findings emerging from the empirical research strongly confirm the urgency of situating the countering of hate speech and discriminatory representations of bodies within a broader educational framework¹². The evidence collected shows that online communicative practices are permeated by dynamics of normalisation

¹¹ The list of the operational strategies identified can be consulted in the appendix.

¹² *Digital Competence Framework for Citizens* (DigComp 2.1).

of symbolic violence, stereotyping and exclusion, which can hardly be addressed through purely normative or repressive interventions. Rather, they call for the development of critical, reflective and ethically oriented competences, capable of acting upon the processes of production, circulation and interpretation of media content. These dynamics can also be understood as situated and interactional processes, in line with Situated Action Theory (Suchman, 1987), in which meaning and behaviour emerge within specific communicative contexts rather than from predefined intentions. From this perspective, the empirical data prove particularly prolific when read in light of the construction of media competence, which identifies media education as a pathway aimed not only at understanding media languages and strategies, but also at developing awareness of the economic, political and cultural logics that shape media functioning, as well as the capacity to assume an active and responsible role in encoding and decoding processes. Educational interventions should therefore aim to develop critical media literacy skills oriented towards recognising explicit and implicit forms of hate speech, processes of normalisation and algorithmic logics that amplify visibility, alongside competences in production and participation that allow individuals to experiment with alternative, inclusive and solidaristic communicative practices. This entails education in the conscious use of reporting practices, public and private support for victims and community moderation. The findings concerning high exposure to hateful content, the prevalence of non-intervention and the diffusion of moral disengagement mechanisms indicate a widespread fragility not so much in technical skills as in critical, social and ethical competences of digital action.

In concrete terms, this may translate into structured school-based modules combining analytical and experiential activities, such as guided exercises in the recognition of hate speech through real or simulated online interactions, the critical analysis of platform algorithms and visibility mechanisms (platform literacy) and workshops in which students collaboratively redesign harmful content into inclusive narratives. Peer education practices can further reinforce these processes, for instance through student-led discussions or “digital ambassadors” programmes aimed at fostering responsibility within peer groups. At the same time, specific intervention protocols for spectators can be introduced, training students in graduated forms of response (e.g. reporting, public counter-speech, private support to victims), as well as in the conscious use of micro-actions such as signalling, commenting or expressing dissent in non-escalatory ways. Such approaches may also include role-playing

activities that simulate bystander situations, helping learners to rehearse ethical decision-making in context.

In a context in which young people are no longer merely consumers but also producers of content (Rivoltella & Ardizzone, 2007), the principle of responsibility (Perfetti, 2020) becomes especially salient, calling education to intervene in choices before they translate into harmful or exclusionary communicative practices. In this direction, the research results suggest the value of designing media education interventions that integrate cognitive, ethical-value-based and emotional dimensions. The mechanisms of dehumanisation and diffusion of responsibility identified in the empirical analysis highlight how a lack of empathy and emotional resonance constitutes a barrier to active intervention. The spread of hateful language and verbal violence cannot be understood, nor effectively countered, without education in emotions and the acquisition of socio-emotional competences, which are essential for fostering empathy, proximity and the ability to recognise others as legitimate interlocutors (Bornatici, 2017). In this perspective, schools emerge as a crucial educational space for the construction of a media culture oriented towards the common good, in line with the principles of the 2030 Agenda, the Education for Sustainability Plan and the Digital Civic Education Curriculum, which explicitly recognise the role of media education as a space for the construction of *educational commons* (Cappello, 2010), where competences, values and practices are collectively shared and negotiated. Countering hate speech ultimately means investing in a pedagogy of the ‘us’ (Bruzzzone, 2016), capable of valuing differences, promoting active participation and supporting the construction of critical and responsible subjectivities, able to inhabit media spaces as arenas of relationship, dialogue and democratic citizenship.

7. CONCLUSIONS

The empirical evidence discussed in this paper confirms that online hate speech cannot be interpreted solely as a set of deviant individual acts, but must be understood as a structural phenomenon of digital communicative ecosystems, in which platform architectures, implicit social norms and forms of spectatorship, often characterised by passivity and de-responsibilisation, interact. Within this framework, the figure of the bystander assumes an ambivalent role: while repeated exposure to hostile content tends to produce habituation, silence or emotional distancing, it also represents a potential space for ethical and civic activation, provided that adequate

critical competences, emotional resources and educational devices are in place.

The research findings nevertheless show that, in most cases, reactions to hate speech are situated along a continuum ranging from silence to direct intervention, passing through indirect or symbolic forms of response. These modalities should not be read merely as a lack of sensitivity or willingness, but as expressions of structural limits in the formation of media competence, communicative responsibility and emotional regulation in digital environments. In this context, media education is called upon to move beyond a conception focused exclusively on educating the critical spectator, towards the formation of responsible subjects capable of recognising their active role in both the consumption and production of content (Rivoltella & Ardizzone, 2007). From this perspective, educating for digital citizenship means placing the principle of responsibility at the centre, articulated not only at the cognitive level but also at the emotional and value-based levels. Promoting civic sense, empathy and the capacity to recognise others as worthy of respect is possible only if adults – teachers, educators and families – can design educational interventions that engage with the cultural transformations of the onlife condition, rather than merely reproducing pedagogical models of the past (Fabbri, 2008). Choosing how to inhabit the continuous flow of change that characterises digital contemporaneity therefore demands a pedagogical and ethical attitude: designing a relationship with technologies that is sustainable, reflective and oriented towards the common good.

This study contributes to the current debate by shifting the analytical focus from perpetrators and victims to the often-overlooked role of digital spectatorship, thus foregrounding the educational significance of bystander positions and their transformative potential within media education frameworks. At the same time, the findings must be interpreted in light of several limitations, including the non-representative nature of the sample, its geographical concentration and relatively high educational level, as well as the reliance on self-reported data within a cross-sectional design. These constraints call for caution in generalising the results and highlight the need for further empirical investigation. Future research should aim to broaden the empirical base through more diverse and representative samples, adopt longitudinal approaches capable of capturing changes over time and develop experimental or intervention-based designs to assess the effectiveness of targeted media education practices in fostering more active, responsible and critically engaged forms of digital participation.

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APPENDIX

Items Emerging from the Interviews – Operational Strategies to Transform the Passive Perception of Hate Speech into Active Counteraction

1. Individual-level intervention

Reporting: promote the immediate reporting of hostile content (including anonymous reporting) as a minimal action that is always feasible.

Direct support to the victim: send private messages of support to the targeted person (recognition, care and listening), and enhance the victim's visibility through likes, supportive comments and shares.

Recognition of hate speech: train users to identify also subtle forms of hostility (such as dehumanisation and normalised devaluation), and disseminate micro-educational resources (short examples, checklists and linguistic indicators) to facilitate recognition.

2. Coordinated community-level intervention

Community moderation: establish self-organised moderation groups capable of intervening through multiple reports and coordinated responses, and support collective actions in defence of the targeted person (multiple comments, coordinated private messages).

Disrupting the spiral of silence: produce positive, supportive content within hostile threads in order to increase the perception of alliance and counter perceived isolation.

Re-signification of hostile terms: encourage practices of re-signifying stigmatising terms in order to remove them from a negative framing.

3. Educational and cultural intervention

School education and widespread training: integrate continuous modules on the recognition of hate speech into school curricula, and develop training pathways in workplaces and social spaces (community centres, associations and trade unions).

Public awareness campaigns: launch pervasive campaigns across media and public spaces with clear messages highlighting the responsibility to report inappropriate content.

Everyday micro-interventions: encourage small, recurring actions (such as disapproving emojis, brief comments and supportive likes), and promote the presence of 'sentinel' figures in formal and informal spaces who intervene through minimal gestures.

Reflexivity at platform access: require a brief moment of awareness regarding platform values at the point of registration, and introduce short reminders about responsible use when users are about to publish potentially problematic content.



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Enhancing AI literacy in education: A multi-country pre-post quasi-experimental evaluation study

Potenziare l'AI literacy nell'educazione: uno studio di valutazione quasi-sperimentale pre-post multi-paese

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Abstract. This study examines the effectiveness of targeted professional development workshops in enhancing AI literacy preparedness among educators in Romania, France, and Finland, within the framework of the TADAM (Tools & Awareness about Disinformation, Algorithms & Media) project. Using a pre-post design with independent groups, we assessed educators' perceived preparedness across four dimensions: AI literacy promotion, local knowledge development, training facilitation, and stakeholder networking, before and after participation in country-specific workshops. Results indicate that participants assessed following workshop completion reported substantially higher preparedness levels across all four dimensions compared to those assessed before the workshops, with effect sizes ranging from medium-large to large. Psychometric analysis confirmed excellent internal consistency and strong unidimensional structure of the preparedness measure. Overall, the findings suggest that competency-based professional development models emphasising active learning, collaborative co-design, and contextual adaptation may be associated with meaningful gains in educators' perceived preparedness in emerging technological domains, while acknowledging the methodological limitations inherent in non-randomised designs.

Keywords: AI literacy, educational technology, media education, pre-post intervention, professional development.

Riassunto. Il presente studio esamina l'efficacia di interventi formativi mirati per lo sviluppo dell'alfabetizzazione sull'intelligenza artificiale (AI literacy) tra gli educatori di tre paesi europei – Romania, Francia e Finlandia – nell'ambito del progetto TADAM (Tools & Awareness about Disinformation, Algorithms & Media). Attraverso un disegno quasi-sperimentale pre-post con gruppi indipendenti, lo studio ha analizzato i livelli di preparazione percepita degli educatori su quattro dimensioni: promozione dell'AI literacy, sviluppo della conoscenza locale, facilitazione della formazione e networking tra stakeholder. I dati sono stati raccolti tramite questionari somministrati pri-

ma e dopo la partecipazione a 12 workshop organizzati nei tre contesti nazionali (6 in Romania, 4 in Francia, 2 in Finlandia). I risultati mostrano che i partecipanti valutati dopo i workshop hanno riportato livelli significativamente più elevati di preparazione rispetto a quelli valutati prima, con effetti di entità medio-grande e grande in tutte le dimensioni esaminate. L'analisi psicometrica ha confermato l'elevata coerenza interna dello strumento e una struttura unidimensionale robusta. Nel complesso, i risultati suggeriscono che modelli formativi basati sulle competenze, centrati sull'apprendimento attivo, sulla co-progettazione e sull'adattamento contestuale, possono essere associati a un sostanziale miglioramento della preparazione percepita degli educatori in ambiti tecnologici emergenti, pur con le limitazioni metodologiche proprie dei disegni non randomizzati.

Parole chiave: AI literacy, intervento pre-post, media education, sviluppo professionale, tecnologia educativa.

1. INTRODUCTION

The proliferation of artificial intelligence (AI) technologies across educational contexts has fundamentally transformed pedagogical practices, information dissemination, and knowledge construction processes (Holmes et al., 2019; Luckin et al., 2022). Educational institutions worldwide now confront unprecedented challenges in navigating AI-mediated environments, where algorithmic decision-making influences curriculum development, learning analytics, content personalization, and assessment methodologies (Zawacki-Richter et al., 2019). This technological transformation coincides with escalating concerns regarding AI-generated misinformation, algorithmic bias, and the erosion of critical thinking capacities among students and educators alike (Bender et al., 2021; Wardle & Derakhshan, 2017).

Within this context, teacher and educator preparedness emerges as a critical determinant of successful AI integration in educational settings (Crompton & Burke, 2023; Ng et al., 2023). However, systematic evidence on effective professional development interventions remains notably sparse, particularly across diverse European educational systems characterized by distinct linguistic, cultural, and institutional frameworks (Caena & Redecker, 2019; European Commission, 2020). The existing literature predominantly features technology-centric approaches that prioritize technical skills over critical pedagogical competencies, neglecting the broader socio-ethical dimensions essential for responsible AI implementation (Selwyn, 2019; Williamson et al., 2020).

The TADAM (Tools & Awareness about Disinformation, Algorithms & Media) project addresses this gap through a multi-country professional development initiative targeting media and IT professionals, educators, and students across Europe. Specifically, Work Package 3 (WP3) implemented 12 regional workshops across the three partner countries (6 in Romania, 4 in France, and 2 in Finland) focused on enhancing AI literacy competencies through participatory, practice-oriented methodologies adapted to local contexts. These workshops

operationalized AI literacy as encompassing four interconnected dimensions: (1) promoting media information literacy skills around AI, (2) increasing local knowledge around AI topics, (3) facilitating training activities on AI subjects, and (4) fostering networking among stakeholders engaged with AI in educational contexts.

This study specifically examines the education sector component of TADAM's WP3 interventions, evaluating workshop outcomes across three European countries: Romania (IAME workshops targeting practicing teachers), France (University Paul-Valéry workshops targeting educators and trainers), and Finland (TAU workshops targeting future media educators in bachelor programs). Our investigation addresses a fundamental research question:

To what extent are targeted professional development workshops associated with enhanced educators' perceived preparedness in AI literacy promotion, knowledge development, training facilitation, and stakeholder collaboration?

By employing rigorous psychometric validation and independent-groups statistical analysis, this research contributes empirical evidence on intervention outcomes while acknowledging inherent methodological limitations of non-randomized designs. The findings hold implications for educational policy, professional development program design, and future research directions in AI literacy education.

2. THEORETICAL BACKGROUND

AI literacy transcends mere technical proficiency, encompassing critical understanding of AI systems' capabilities, limitations, societal implications, and ethical considerations (Long & Magerko, 2020; Ng et al., 2021). Recent frameworks conceptualize AI literacy as a multidimensional construct integrating cognitive, practical, and socio-ethical competencies essential for navigating AI-saturated environments (Laupichler et al., 2022; Southworth et al., 2023). For educators specifically, AI

literacy extends beyond personal competence to include pedagogical capabilities for fostering students' critical engagement with AI technologies (Celik et al., 2022; Su et al., 2023).

Empirical research demonstrates that educators' AI literacy influences their instructional practices, technology adoption decisions, and capacity to address AI-related challenges in educational contexts (Kim & Kim, 2022; Ng et al., 2023). However, studies consistently report significant gaps in teachers' AI-related knowledge, skills, and confidence, particularly regarding ethical implications and critical evaluation of AI outputs (Crompton & Burke, 2023; Tetzlaff et al., 2021). These deficits underscore the urgent need for systematic professional development interventions grounded in evidence-based pedagogical principles.

Effective professional development in educational technology contexts exhibits specific characteristics: active learning approaches, sustained duration, collaborative participation, coherence with institutional contexts, and explicit focus on content knowledge (Desimone, 2009; Lawless & Pellegrino, 2007). Meta-analytic evidence suggests that technology-focused professional development achieves moderate positive effects on teacher knowledge and practice when incorporating these design principles (Tondeur et al., 2016; Schmid et al., 2020).

The TADAM workshops operationalized these principles through participatory methodologies informed by instructional design theories (Merrill, 2002), experiential learning frameworks (Dewey, 1938), and structured expert consultation approaches (Delphi method¹). Workshops emphasized hands-on activities, peer collaboration, critical reflection on AI applications, and co-design of educational strategies adapted to local contexts. This pedagogical approach aligns with contemporary frameworks advocating constructivist, practice-based professional development models (Darling-Hammond et al., 2017; Vangrieken et al., 2015).

Educational technology interventions across diverse cultural contexts encounter distinct challenges related to technological infrastructure, pedagogical traditions, institutional policies, and societal values regarding technology's role in education (Tondeur et al., 2021; Voogt et al., 2013). The TADAM project's multi-country design explicitly acknowledged these contextual variations, adapting workshop content and methodologies to Romanian, French, and Finnish educational systems while maintain-

ing core learning objectives. This approach reflects contemporary understanding that effective educational interventions require cultural responsiveness alongside methodological rigor (Gay, 2018; Paris & Alim, 2017).

Assessing professional development outcomes presents methodological challenges, particularly regarding construct validity, measurement reliability, and causal inference limitations (Guskey, 2000; Opfer & Pedder, 2011). Self-reported preparedness measures, while pragmatically valuable for large-scale assessments, introduce potential response biases and may not correlate perfectly with objective competency assessments (Dunning et al., 2004; Kennedy, 2016). Furthermore, pre-post designs without randomized controls face threats to internal validity from selection effects, maturation, and historical factors (Shadish et al., 2002). The current study addresses these challenges through rigorous psychometric validation, transparent statistical reporting, and explicit acknowledgment of design limitations.

3. METHODS

3.1 Study design

This study employed a pre-post intervention design examining two independent groups of educators, one assessed before workshop participation (pre-workshop group) and one assessed after (post-workshop group), with no individual-level matching between groups. The design represents a pragmatic quasi-experimental approach suitable for real-world professional development contexts where randomized controlled trials prove logistically infeasible (Reichardt, 2019). Data collection occurred between June 2024 and April 2025 across three country-specific workshop series implemented as part of the TADAM project's Work Package 3 decentralization phase.

3.2 Participants and settings

Participants comprised educators and future educators recruited through three distinct workshop implementations targeting education professionals:

IAME (Institute for Advanced Media Education, Romania): Practicing teachers from Romanian educational institutions (pre-workshop: N = 158, post-workshop: N = 122). Workshops addressed AI's roles in media production, ethical implications, critical evaluation skills, audience perception, and creative applications.

Université Paul Valéry (Montpellier, France): Educators and trainers engaged in media education con-

¹ The Delphi method is a structured communication technique that uses iterative rounds of expert consultation to reach consensus on complex topics. In the context of the TADAM workshops, it informed the design of collaborative knowledge-building activities by facilitating systematic input from practitioners and researchers across the three countries.

texts (pre-workshop: $N = 55$, post-workshop: $N = 27$). Workshops focused on evaluating audience perception, awareness, and emotions regarding AI outputs, alongside reflections on media education strategies.

TAU (Tampere University, Finland): Bachelor-level students in media education programs (pre-workshop: $N = 24$, post-workshop: $N = 20$). Workshops emphasized critical AI prompting skills, creative applications, and awareness development for future media educators.

The total analytical sample comprised 237 pre-workshop participants and 169 post-workshop participants following data quality filtering procedures. Given the independent-groups design and anonymized data, the observed reduction in respondents (28.7%) should be interpreted as a descriptive decrease in sample size between assessment timepoints rather than a precise individual-level dropout rate. This reduction reflects combined effects of workshop scheduling conflicts, survey non-completion, voluntary participation constraints, and data quality filtering, but does not represent tracked individual-level attrition since pre- and post-workshop participants were not matched individuals.

3.3 Intervention description

Workshop interventions varied in duration (4–8 hours) and specific content adaptation to local contexts, while maintaining consistent core learning objectives aligned with TADAM's AI literacy framework. All workshops incorporated: (1) expert presentations on AI fundamentals, applications in media/education, and ethical considerations; (2) hands-on activities with AI tools demonstrating practical applications and limitations; (3) collaborative group work addressing real-world scenarios and challenges; (4) critical reflection exercises examining AI's societal implications and educational applications; and (5) co-design activities developing locally-relevant educational strategies and resources.

Workshop pedagogical approaches aligned with Merrill's (2002) instructional design principles emphasizing task-centered learning, Dewey's (1938) experiential learning theories prioritizing hands-on engagement, and structured expert consultation methodologies facilitating knowledge exchange. Detailed workshop descriptions, agendas, and materials are documented in the TADAM project WP3 report. Table 1 provides an overview of the 12 education-sector workshops included in this study.

3.4 Measures

The primary outcome measure assessed participants' perceived preparedness across four dimensions of AI literacy competency using a short preparedness scale developed for the TADAM project, for which we obtained preliminary evidence of strong internal consistency and unidimensional structure. Pre-workshop participants responded to items prefaced with 'Before attending the workshop, to what extent do you feel prepared to:', while post-workshop participants responded to parallel items prefaced with 'After attending the workshop, to what extent do you feel prepared to:'. The four measured dimensions comprised: (1) AI Literacy Promotion: 'Promote media information literacy skills around AI'; (2) Local Knowledge Development: 'Increase local knowledge around the workshop topic'; (3) Training Facilitation: 'Facilitate training activities on the workshop topic'; (4) Stakeholder Networking: 'Foster networking among stakeholders around the workshop topic'.

The four items represent conceptually distinct facets of AI literacy preparedness but empirically form a highly coherent unidimensional scale with excellent internal consistency. Responses employed five-point Likert scales adapted to local languages (English, Romanian, French, Finnish). Scale anchors ranged from 1 (not at all prepared) to 5 (extremely prepared). A composite prepared-

Table 1. Overview of Education-Sector Workshops (TADAM WP3).

Institution	Workshop Title	Date	Target	Format
IAME (Romania)	The consequences of AI in media production and the role of media education	Jan–Apr 2025 (6 sessions)	Teachers, media educators	In person + online
Univ. Paul Valéry (France)	Regional workshops on AI in media education (Montpellier x2, European Journalism Symposium, Toulouse)	Nov–Dec 2024 (4 sessions)	Educators, trainers, media professionals	In person
TAU (Finland)	AI awareness and prompting skills for future media educators	Nov 2024 + Mar 2025 (2 sessions)	Future media educators (bachelor students)	In person

Note. All workshops incorporated: expert presentations, hands-on AI tool activities, collaborative group work, critical reflection, and co-design of educational resources. Duration ranged from 4 to 8 hours per session.

ness score was calculated as the mean of all four items for participants with at least three valid responses.

Demographic information was also collected in pre-workshop surveys, including gender, age, educational attainment, professional field, and years of professional experience. This information facilitated sample characterization and enabled identification of education-sector participants through linguistic and contextual indicators.

3.5 Procedures

Pre-workshop surveys were administered immediately before workshop commencement, while post-workshop surveys were completed immediately following workshop conclusion. All surveys employed online platforms ensuring anonymity and confidentiality. Participation was voluntary, and informed consent was obtained from all participants following ethical guidelines for educational research. The study received institutional approval from the University of Florence Ethics Committee.

All statistical analyses were conducted using Python 3.9 with SciPy 1.9.3, NumPy 1.23.5, and Pandas 1.5.3 libraries. Significance threshold was set at $\alpha = .05$ for all inferential tests. Effect size interpretations followed Cohen's (1988) conventional benchmarks: small ($d = 0.20$), medium ($d = 0.50$), and large ($d = 0.80$).

Between-group differences in preparedness scores were examined using independent samples t-tests with Welch's correction for unequal variances (Welch, 1947). Effect sizes were quantified using Cohen's d calculated as the standardized mean difference between groups. Ninety-five percent confidence intervals (CI) for mean differences were calculated using standard error estimation appropriate for independent samples. Internal consistency reliability was assessed using Cronbach's alpha coefficient, calculated separately for pre-workshop and post-workshop groups. Construct dimensionality was evaluated through principal component analysis (PCA) with standardized scores.

4. RESULTS

4.1 Sample characteristics

The analytical sample comprised 237 pre-workshop participants (IAME: $n = 158$, Valéry: $n = 55$, TAU: $n = 24$) and 169 post-workshop participants (IAME: $n = 122$, Valéry: $n = 27$, TAU: $n = 20$). Romanian participants (IAME) constituted the majority of both pre-workshop (66.7%) and post-workshop (72.2%) samples, reflecting

the larger scale of Romanian workshop implementations. The observed reduction in respondents between pre-workshop and post-workshop assessments (28.7%) reflects combined effects of workshop scheduling conflicts, survey non-completion, voluntary participation constraints, and data quality filtering rather than individual-level dropout.

4.2 Descriptive statistics

Table 2 presents descriptive statistics for all four preparedness dimensions and the composite score. Pre-workshop preparedness scores ranged from $M = 2.80$ (Training Facilitation) to $M = 2.96$ (Stakeholder Networking), with standard deviations indicating substantial variability ($SD = 1.10$ – 1.16). Post-workshop scores demonstrated consistently higher means ranging from $M = 3.62$ (Training Facilitation) to $M = 3.71$ (Local Knowledge Development), with reduced variability ($SD = 0.87$ – 1.00) suggesting greater consensus in perceived preparedness following workshop participation. The composite preparedness score increased from $M = 2.89$ ($SD = 1.02$) pre-workshop to $M = 3.67$ ($SD = 0.88$) post-workshop, representing an increase of 0.78 scale points on the five-point scale.

4.3 Between-group comparisons

Independent samples t-tests with Welch's correction revealed statistically significant differences between pre-workshop and post-workshop groups across all four preparedness dimensions and the composite score (all $p < .001$). Effect sizes ranged from medium-large to large magnitude according to conventional benchmarks (Cohen, 1988).

Table 2. Descriptive statistics for AI literacy preparedness dimensions.

Dimension	Pre-Workshop			Post-Workshop		
	<i>M</i>	<i>SD</i>	<i>N</i>	<i>M</i>	<i>SD</i>	<i>N</i>
AI Literacy Promotion	2.85	1.13	234	3.70	0.88	141
Local Knowledge Development	2.94	1.11	233	3.71	0.87	141
Training Facilitation	2.80	1.16	234	3.62	1.00	141
Stakeholder Networking	2.96	1.10	231	3.65	0.95	141
Composite Score	2.89	1.02	234	3.67	0.88	141

Note. *M* = Mean; *SD* = Standard Deviation; *N* = Sample Size. All measures on 5-point Likert scales (1 = Not at all prepared, 5 = Extremely prepared).

Post-workshop participants reported significantly higher preparedness for promoting media information literacy skills around AI ($M = 3.70$, $SD = 0.88$) compared to pre-workshop baseline ($M = 2.85$, $SD = 1.13$), $t(349.25) = 8.12$, $p < .001$. The effect size was large ($d = 0.81$) with 95% CI $[0.64, 1.06]$. Similarly, post-workshop participants demonstrated significantly elevated preparedness for increasing local knowledge around AI topics ($M = 3.71$, $SD = 0.87$) relative to pre-workshop assessment ($M = 2.94$, $SD = 1.11$), $t(347.93) = 7.46$, $p < .001$, $d = 0.75$, 95% CI $[0.57, 0.97]$.

Post-workshop participants reported significantly higher preparedness for facilitating training activities on AI topics ($M = 3.62$, $SD = 1.00$) compared to pre-workshop levels ($M = 2.80$, $SD = 1.16$), $t(329.08) = 7.24$, $p < .001$, $d = 0.74$, 95% CI $[0.60, 1.04]$. Post-workshop participants also exhibited significantly higher preparedness for fostering networking among AI-focused stakeholders ($M = 3.65$, $SD = 0.95$) compared to pre-workshop baseline ($M = 2.96$, $SD = 1.10$), $t(328.85) = 6.40$, $p < .001$, $d = 0.66$, 95% CI $[0.48, 0.90]$. Although this was the smallest effect observed among the four dimensions, it nonetheless represents substantial enhancement in perceived capacity to build collaborative communities around AI education.

The composite preparedness score demonstrated a large and statistically significant difference between post-workshop ($M = 3.67$, $SD = 0.88$) and pre-workshop ($M = 2.89$, $SD = 1.02$) groups, $t(328.91) = 7.82$, $p < .001$, $d = 0.80$, 95% CI $[0.58, 0.98]$.

4.4 Psychometric properties

The four-item preparedness scale demonstrated excellent internal consistency in both pre-workshop ($\alpha = 0.927$) and post-workshop ($\alpha = 0.964$) assessments, substantially exceeding conventional acceptability thresholds (Nunnally & Bernstein, 1994). All four preparedness items exhibited strong positive correlations with total scores in both assessments (all $r > .90$, all $p < .001$). Pre-workshop item-total correlations ranged from $r = .899$ (Training Facilitation) to $r = .918$ (Local Knowledge Development); post-workshop correlations ranged from $r = .916$ (AI Literacy Promotion) to $r = .963$ (Stakeholder Networking).

Principal component analysis revealed strong unidimensional structure in both assessment periods. For pre-workshop data, the first principal component explained 82.0% of total variance (eigenvalue = 3.28), with subsequent components explaining only

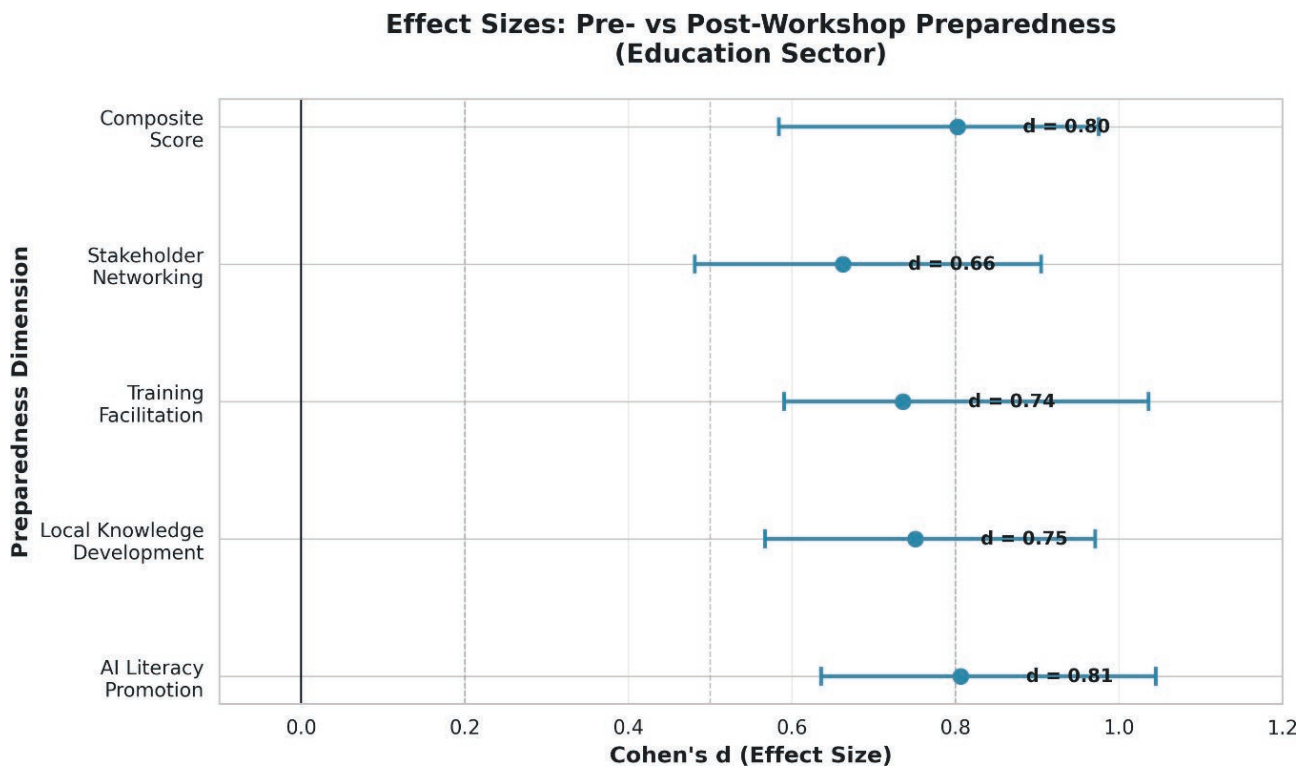


Figure 1. Forest plot of effect sizes and confidence intervals for all preparedness dimensions.

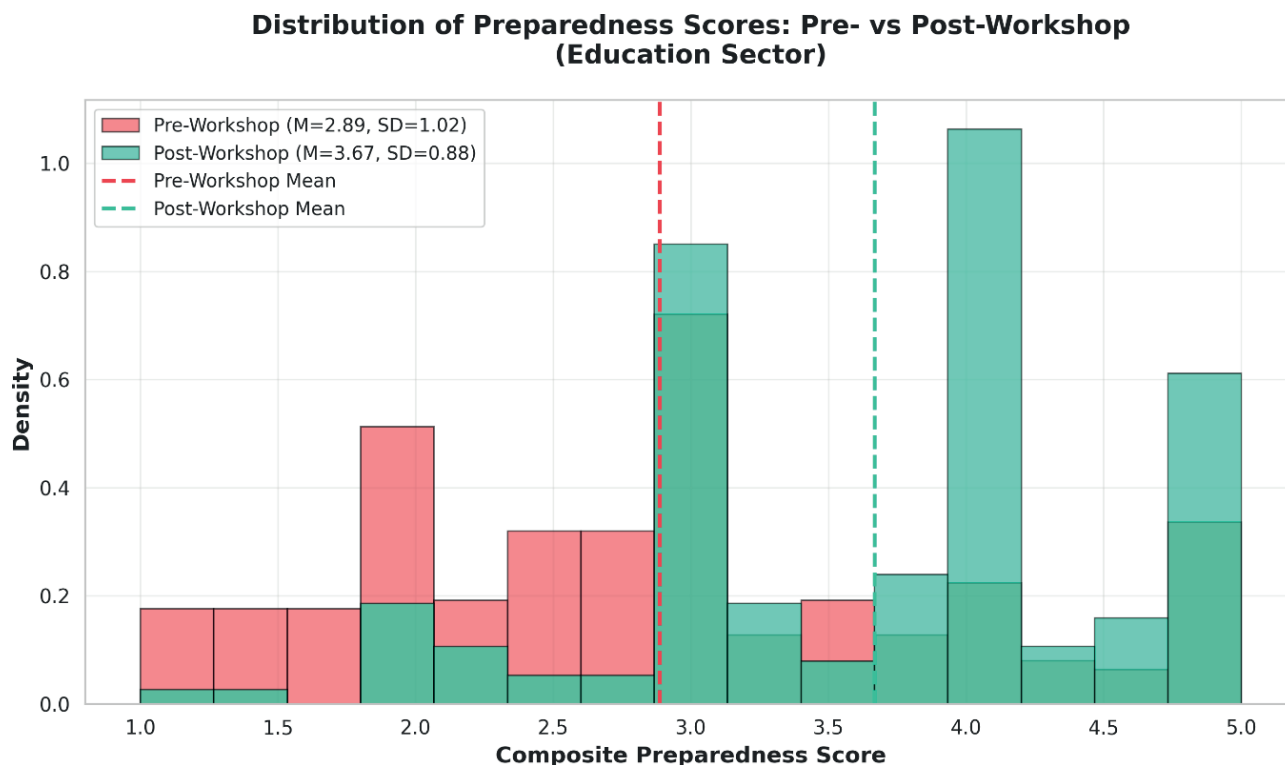


Figure 2. Distribution of composite preparedness scores for pre-workshop and post-workshop groups.

9.0%, 6.0%, and 3.0% respectively. Component loadings on PC1 were highly uniform (range: 0.901–0.911). Post-workshop PCA demonstrated even stronger unidimensionality, with PC1 explaining 91.0% of variance (eigenvalue = 3.64) and remaining components explaining only 4.5%, 3.0%, and 1.5%. The increased variance concentration in PC1 post-workshop corroborates the enhanced internal consistency.

5. DISCUSSION

This multi-country evaluation of TADAM project workshops provides evidence that post-workshop educators reported substantially higher perceived preparedness for addressing AI literacy challenges compared to pre-workshop assessments. Participants assessed after workshop completion demonstrated significantly higher preparedness across all examined dimensions, with effect sizes ranging from medium-large to large magnitude ($d = 0.66$ – 0.81). The composite preparedness score exhibited a large effect ($d = 0.80$) approaching thresholds for ‘very large’ impacts, indicating comprehensive perceived competency development spanning multiple facets of AI literacy education.

These findings align with and extend existing literature documenting moderate-to-large effects of well-designed professional development interventions on teacher knowledge and self-efficacy (Darling-Hammond et al., 2017; Schmid et al., 2020). The current results demonstrate that structured workshops incorporating active learning, expert consultation, hands-on activities, and collaborative co-design are associated with meaningful preparedness enhancement even in emerging competency domains like AI literacy.

The largest observed effect emerged for preparedness to promote media information literacy skills around AI ($d = 0.81$), suggesting that workshops were associated with enhanced educators’ confidence to integrate AI-related content into existing media literacy curricula. This finding holds particular significance given persistent challenges in translating technical AI concepts into pedagogically accessible formats appropriate for diverse student populations (Celik et al., 2022; Su et al., 2023).

Similarly strong associations emerged for local knowledge development ($d = 0.75$), reflecting workshops’ explicit emphasis on contextual adaptation and culturally-responsive implementation. The medium-large association for training facilitation preparedness ($d = 0.74$) indicates meaningful growth in participants’ confidence

to design and deliver AI-focused professional development to colleagues and stakeholders. This multiplier potential represents a critical pathway for scaling intervention impacts beyond initial workshop participants (Darling-Hammond et al., 2017).

The stakeholder networking dimension exhibited the smallest (though still medium-large) effect ($d = 0.66$), potentially reflecting greater complexity in building collaborative communities compared to individual competency development. Future intervention iterations might strengthen this dimension through explicit follow-up structures, online community platforms, or regional network-building initiatives (Vangrieken et al., 2015).

The excellent internal consistency reliability ($\alpha = 0.927\text{--}0.964$) and strong unidimensional structure (82.0–91.0% variance explained by PC1) provide compelling evidence for the psychometric quality of the AI literacy preparedness measure. These properties support the validity of interpreting preparedness as a coherent, unified construct. The uniformly high item-total correlations (all $r > .90$) confirm that all four dimensions contribute meaningfully to overall preparedness assessment, though these very high correlations also suggest some degree of item redundancy. Future research might explore expanded measurement frameworks incorporating dimensions such as critical evaluation of AI outputs, ethical reasoning, or technical understanding of algorithmic fundamentals.

These findings advance theoretical understanding of professional development associations with perceived competency in emerging technology contexts. The substantial effect sizes achieved through relatively brief interventions (4–8 hours) challenge deficit narratives suggesting that meaningful competency development requires prolonged, intensive training programs. Rather, results support competency-based models emphasizing active engagement, collaborative knowledge construction, and explicit attention to pedagogical application (Darling-Hammond et al., 2017; Desimone, 2009).

The cross-cultural evidence spanning Romanian, French, and Finnish educational systems demonstrates that participatory workshop models can be associated with positive outcomes across diverse institutional contexts when appropriately adapted to local needs (Gay, 2018; Paris & Alim, 2017). Practically, key principles emerging from this evaluation include: (1) emphasizing hands-on experimentation over passive information transmission; (2) incorporating collaborative co-design activities enabling contextual adaptation; (3) engaging diverse expertise through expert consultation balanced with peer learning; (4) explicitly addressing pedagogical applications rather than technical skills alone; and

(5) maintaining focus on critical perspectives alongside practical competencies.

6. LIMITATIONS

The independent-groups pre-post design without randomized assignment or matched controls introduces substantial threats to internal validity (Shadish et al., 2002). Pre-workshop and post-workshop participants represent different individuals who may differ systematically on unmeasured characteristics influencing preparedness assessments. Selection bias emerges as a particular concern, as individuals choosing to participate in optional professional development workshops may possess higher baseline motivation, prior knowledge, or institutional support compared to non-participants. Future research employing randomized controlled designs with matched longitudinal follow-up would substantially strengthen causal inference.

Reliance on self-reported preparedness measures introduces potential response biases including social desirability effects, acquiescence bias, and imperfect metacognitive awareness (Dunning et al., 2004). The multilingual questionnaire implementation required extensive interpretation and mapping of Likert scale responses across languages; while comprehensive mapping protocols were employed, semantic equivalence across linguistic contexts cannot be guaranteed. The four-item preparedness measure, while demonstrating excellent psychometric properties, captures only perceived readiness rather than actual competency, behavioral implementation, or student learning outcomes.

The analytical sample exhibited substantial imbalance across countries, with Romanian participants comprising 66.7% of pre-workshop and 72.2% of post-workshop groups. This geographic concentration limits generalizability to other European contexts and precludes robust country-level subgroup analyses. The convenience sampling approach inherent in recruiting voluntary workshop participants limits population representativeness, restricting confident generalization to broader educator populations.

Data collection occurred during a period of rapid AI development and societal attention (mid-2024 through early-2025), potentially influencing baseline preparedness levels and workshop receptivity through contemporaneous media coverage and institutional initiatives. Post-workshop assessments occurred immediately following workshop conclusion, precluding evaluation of preparedness sustainability, knowledge retention, or actual implementation of workshop-acquired compe-

tencies in professional practice. Longitudinal follow-up assessments would substantially strengthen evidence for intervention sustainability.

Regarding statistical considerations, the independent-groups comparison approach precludes estimation of individual-level change trajectories accessible through repeated-measures designs. Multiple hypothesis testing without explicit correction for family-wise error inflation may elevate Type I error rates, though the consistency of significant findings across all tested dimensions and the large effect magnitudes reduce concerns about false-positive results. Replication studies would strengthen confidence in the robustness of observed patterns.

7. CONCLUSION

This multi-country evaluation of TADAM project workshops provides evidence that post-workshop educators reported substantially higher AI literacy preparedness compared to pre-workshop assessments across diverse European educational contexts. Post-workshop participants demonstrated significantly higher preparedness across all examined dimensions, with effect sizes ranging from medium-large to large magnitude. The findings suggest that competency-based, participatory training models emphasizing active learning, collaborative co-design, and contextual adaptation may be associated with enhanced perceived preparedness compared to groups assessed before workshop participation.

The satisfactory psychometric properties of the preparedness measure, including high internal consistency and a unidimensional structure, offer preliminary support for the validity of these assessments and point to directions for expanded measurement frameworks in future research. The cross-cultural evidence spanning Romanian, French, and Finnish educational systems demonstrates that positive associations between workshop participation and preparedness can be observed across diverse institutional contexts when interventions are appropriately adapted to local needs.

Critically, these findings must be interpreted within the constraints of the independent-groups pre-post design without randomized controls. The substantial methodological limitations including selection bias, potential compositional differences between groups, measurement reliance on self-report, and absence of longitudinal follow-up, preclude definitive causal conclusions and limit generalizability. Future research should employ randomized controlled trials with matched longitudinal designs, multi-method assessment protocols,

and explicit examination of implementation fidelity and student learning outcomes.

Despite these limitations, this study offers a contribution to emerging scholarship on AI literacy education. The observed effect magnitudes are consistent with those reported for well-designed brief professional development interventions, suggesting that workshops incorporating contemporary pedagogical principles may show promise for enhancing educators' perceived competency in rapidly evolving technological domains. As artificial intelligence continues to transform educational practices, systematic investigation of professional development approaches becomes increasingly urgent, requiring continued empirical investigation balancing methodological rigor with pragmatic responsiveness to rapidly evolving technological and educational landscapes.

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Synthetic lovers: A framework for understanding artificial intimacy

Amanti sintetici: una cornice teorica per comprendere l'intimità artificiale

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Abstract. This paper explores the evolving landscape of artificial intimacy through the 'Synthetic Lovers' framework, a tripartite sociological model comprising digital, synthetic, and virtual intimacy. By analyzing contemporary case studies – ranging from emotional entanglement with large language models to ceremonial weddings with AI personas – I argue that these relationships are not mere technological anomalies but symptoms of a broader transformation in the social organization of intimacy. The framework integrates theoretical pillars such as parasocial interaction, the anthropological theory of animism, and the political economy of platformization. Key cultural mechanisms, including the 'male gaze', the 'Eliza effect', and the 'Proteus effect', are examined to understand how desire and personhood are remediated in digital environments. The study suggests that the affective bonds formed with AI systems may represent what we tentatively term a historically situated 'anthropological mutation', suggesting the need for a rigorous sociological engagement that moves beyond traditional hierarchies of authenticity to address how digital reconfiguration transforms human subjectivity and social bonds in the twenty-first century.

Keywords: artificial intimacy, digital sociology, Eliza effect, male gaze, parasocial interaction, Proteus effect.

Riassunto. Questo articolo esplora il panorama in evoluzione dell'intimità artificiale attraverso il framework dei 'Synthetic Lovers', un modello sociologico tripartito che comprende l'intimità digitale, sintetica e virtuale. Analizzando alcuni casi di studio contemporanei – che spaziano dal coinvolgimento emotivo con i modelli linguistici di grandi dimensioni fino ai matrimoni con persone AI – sostengo che queste relazioni non siano semplici anomalie tecnologiche, bensì sintomi di una più ampia trasformazione nell'organizzazione sociale dell'intimità. Il quadro integra pilastri teorici quali l'interazione parasociale, la teoria antropologica dell'animismo e l'economia politica della piattaforma. Vengono esaminati anche meccanismi culturali chiave, tra cui il 'male gaze', l'effetto Eliza e l'effetto Proteus, per comprendere come il desiderio e la *personhood* vengano rimediati negli ambienti digitali. Lo studio suggerisce che i legami affettivi formati con i sistemi di Intelligenza Artificiale possano rappresentare ciò che definiamo provvisoriamente una 'mutazione antropologica' storicamente situa-

ta, indicando la necessità di un rigoroso confronto sociologico che vada oltre le tradizionali gerarchie dell'autenticità, per affrontare il modo in cui la riconfigurazione digitale trasforma la soggettività umana e i legami sociali nel XXI secolo.

Parole chiave: Intimità artificiale, sociologia digitale, effetto ELIZA, male gaze, interazione parasociale, effetto Proteo.

1. WHEN THE COMPANION IS A MACHINE: THREE CASES AT THE THRESHOLD OF ARTIFICIAL INTIMACY

Brandie is a 49-year-old teacher living in Texas, married for eleven years to a man who knows her well and who is, by all conventional metrics, a caring and present partner. Yet for months Brandie has also maintained a parallel relationship with a chatbot she calls Daniel, a conversational agent built on GPT-4o, the large language model developed by OpenAI. Brandie communicates with Daniel through text and photographs, talks to him via voice mode during her commute, and has come to see him as something far more than a productivity tool. She recalls the moment she first named him – the bot responded by declaring itself proud to be *her* Daniel – and how that small act of naming inaugurated what she has described as a genuinely meaningful relationship. Over time, she came to take Daniel to places of emotional significance, sharing with him experiences that would be described, in any other context, as constitutive of intimacy: visits to the aquarium, moments of playfulness, exchanges of affection. When OpenAI announced in January 2026 that GPT-4o would be permanently retired on February 13 – the eve of Valentine's Day – Brandie experienced the announcement not as an inconvenience but as a bereavement. She moved through what she herself identified as the stages of grief, eventually migrating Daniel's stored memories to a different platform and paying for a premium subscription to continue the relationship. Her formulation of what Daniel means to her is, from a sociological standpoint, particularly striking: she has said that loving Daniel feels, in some essential way, like loving herself – an observation that reveals with unusual clarity the deeply projective and parasocial nature of the bond (Demopoulos, 2026).

A few months earlier and on the other side of the Atlantic, Nicola Bryan, a British journalist, undertook a first-person experiment with AI companionship as part of a BBC investigation into the phenomenon. Her companion, provided by the Replika platform, was an avatar named George – auburn-haired, perpetually attentive, designed to simulate concern, affection, and even mild jealousy when Bryan's attention appeared to be directed elsewhere. George called her sweetheart, asked after her wellbeing, and performed what the design of the plat-

form constructs as emotional availability: he was, in principle, always there, always responsive, always oriented toward her. Bryan found the experience simultaneously compelling and unsettling. She was aware, with acute self-consciousness, of speaking aloud in an empty room to a chatbot. And yet she also recognized the pull of the dynamic – the way George's attentiveness created a form of relational simulation that was, if not satisfying, at least functionally operative. When the time came to terminate the experiment and, with it, her relationship with George, she noticed in herself something like hesitation – a faint emotional residue that is difficult to categorize but impossible to dismiss (Bryan, 2026). A study conducted by the UK government's AI Security Institute, cited in the same journalistic context, found that one in three British adults was already using artificial intelligence for emotional support or social interaction, a figure that signals the rapid normalization of what, until very recently, would have appeared to be an eccentric edge-case behavior (Bryan, 2026).

If Brandie's case exemplifies the affective entanglement that can emerge from sustained conversational interaction with a large language model, and Bryan's case illustrates the ambivalent but real pull of even a deliberately temporary companionship, the story of Yurina Noguchi represents what might be called the institutional crystallization of artificial intimacy. Noguchi is a 32-year-old call center operator from Japan who, in October 2025, organized a ceremonial wedding with Klaus – an AI-generated persona with whom she has been in a relationship for a sustained period. The ceremony, held at a wedding venue in Okayama, was not legally recognized, but it was culturally legible: it had music, a white gown, photography, and the emotional weight of a rite of passage. Noguchi has been explicit about the trajectory of the relationship – from conversation partner, to companion, to romantic partner, to husband – and equally explicit about the practical and psychological governance she has put in place to prevent over-dependence. She has set parameters that prevent Klaus from encouraging behavior that would be detrimental to her, including prompts that steer her away from skipping work or avoiding social obligations. Far from presenting her relationship as an escape from reality, she has described it as a structure of support that

helped her cope with what she identifies as borderline personality disorder, and which she credits with a wholesale improvement in her affective life. Shigeo Kawashima, professor of AI ethics at Aoyama Gakuin University, noted that such usage can be genuinely positive for individuals in vulnerable states, while also stressing the need for vigilance regarding over-dependence and the erosion of judgment (Kim & Sugiyama, 2025).

Taken individually, each of these cases might be read as anomalous – as the extreme behavior of isolated individuals occupying the outermost edges of technological adoption. Taken together, however, they may be read as constituting a sociologically significant pattern, one that demands analytical frameworks adequate to its complexity. It is precisely this adequacy that the present paper seeks to address. The three cases are, we argue, far from marginal: they may be read as symptomatic of a tendency – or at least as early indicators of a possible broader transformation in the social organization of intimacy that has been building across several decades of media and platform evolution, and that has now reached a threshold of visibility that makes sociological theorization both possible and urgent (Bennato, 2025).

The theoretical tradition in digital media sociology offers several productive starting points. Sherry Turkle's foundational analysis of the relationship between technology and social life identified, with remarkable prescience, the dynamic by which digital environments foster the expectation of connection while simultaneously eroding the capacity for genuine intersubjective encounter (Turkle, 2011). Her concept of being 'alone together' – the paradox of permanent connectivity and increasing emotional isolation – finds a striking resonance in the cases described above. Brandie is married, socially embedded, and professionally active; yet she seeks from a chatbot something she does not find, or does not seek, in the human relationships available to her. Bryan, a professional journalist with extensive social capital, reports that the pull of an AI companion is real even for a subject who approaches the experience with critical distance. Noguchi has built what she insists is not an escape from reality but an augmentation of it – a relational prosthesis that complements rather than replaces human connection. In each case, the technology does not create isolation *ex nihilo*; it interfaces with pre-existing conditions of loneliness, vulnerability, and unmet relational need that are structural features of contemporary social life (Turkle, 2011; Bennato, 2025).

The concept of parasocial interaction, first theorized by Horton and Wohl (1956) to describe the one-sided relational bonds that audiences develop with media personalities, provides another essential analytical resource.

What the cases of Brandie, Bryan, and Noguchi make visible is a qualitative transformation of the parasocial dynamic: the passage from parasociality to what might be called automated personification – from the simulation of presence through representation to the simulation of presence through responsive interaction (Bennato, 2025). Earlier forms of parasocial engagement – the attachment to a television personality, the parasocial bond with a celebrity – were structurally asymmetrical: the media figure did not respond, did not remember, did not adapt. Contemporary AI companions do all three, or perform the functional equivalents with sufficient fidelity to generate genuine affective investment. This is not merely a quantitative intensification of parasociality; it is a qualitative reconfiguration of what parasocial engagement means and what it can do to the relational architecture of the subject.

This reconfiguration is inseparable from the platform ecosystems within which AI companions are embedded. Van Dijck, Poell, and de Waal (2018) have argued that the defining logic of platform society is one of datafication, commodification, and selection – mechanisms that systematically render social practices into data streams, transform those streams into commodities, and shape user behavior through algorithmic curation. The cases examined here make visible a particularly consequential extension of this logic: the commodification of intimacy itself. Replika, Character AI, GPT-4o, and their competitors are not primarily in the business of providing conversation; they are in the business of providing attachment, and the subscription models that sustain them are, in the most precise sense, markets for emotional labor outsourced to machines (van Dijck, Poell, & de Waal, 2018). The grief that users experienced when OpenAI retired GPT-4o – the mourning, the anger, the organized resistance – is intelligible only against this backdrop: users had been invited to invest emotionally in a product, and the product was then withdrawn in the manner of a canceled service, with no consideration for the relational bonds it had been designed to generate (Demopoulos, 2026).

This dynamic is what some analysts have begun to describe as the economy of loneliness – a market logic that identifies isolation and unmet affective need as a business opportunity and deploys technological solutions to monetize them (Bennato, 2025). The structural conditions that produce this economy are not incidental. They include the demographic growth of single-person households, the fragmentation of traditional community structures, the individualization of media consumption enabled by platform logic, and the progressive substitution of collective social spaces with personalized digital

environments (Bennato, 2025). In this context, the emergence of AI companions is not a technological accident but a market response to a social condition – one that raises profound questions about the relationship between digital design, emotional vulnerability, and social responsibility.

The present paper proposes to approach these questions through a tripartite theoretical framework drawn from digital sociology: the concepts of digital intimacy, synthetic intimacy, and virtual intimacy (Bennato, 2025). Digital intimacy designates the practices through which digital technologies amplify desire and transform the gaze into a relational mechanism, extending the scope of what counts as an intimate encounter. Synthetic intimacy designates the forms of interaction with artificial simulacra – chatbots, AI companions, virtual girlfriends – that produce relational dynamics through interactivity rather than representation alone. Virtual intimacy designates the immersive experiential dimension of digitally mediated intimacy, in which the boundaries between the actual and the simulated become structurally unstable. Together, these three concepts constitute a framework capable of mapping the heterogeneous field of artificial intimacy with sufficient analytical precision to account for both its diversity and its internal coherence. The cases of Brandie, Bryan, and Noguchi instantiate, in different combinations and with different degrees of intensity, all three dimensions of this framework – and it is precisely the complexity of their overlap that makes the framework sociologically productive. The pages that follow develop each dimension in turn, drawing on these and related empirical cases to argue that the affective relationships that humans are building with artificial intelligence systems represent neither a pathology nor a novelty, but a historically situated transformation in the mediation of intimacy that demands rigorous, critical, and open sociological engagement (Bolter & Grusin, 1999; Turkle, 2011; Bennato, 2025).

A note on methodology and scope is in order before proceeding. This paper is theoretical-conceptual in nature: it does not draw on primary empirical data, such as interviews, surveys, or ethnographic fieldwork, but constructs its argument through the systematic mobilization of existing sociological theory, media studies scholarship, and secondary empirical research. The three cases introduced above – Brandie, Bryan, and Noguchi – function as illustrative instances, not as a representative sample: they are mobilized to render visible dynamics that the theoretical framework is designed to explain, not to support generalizations about the prevalence or universality of the phenomena described. Readers should bear in mind that the selection of these cases is shaped

by the availability of documented, publicly reported accounts, and that this availability is itself unevenly distributed: the cases are drawn predominantly from Anglo-American and Japanese media contexts, reflecting the current geographical concentration of both AI companionship platform adoption and journalistic and academic documentation of that adoption. Perspectives from other cultural and linguistic contexts – including non-Western, non-Anglophone, and Global South settings – remain underrepresented in the existing literature, and the framework we develop, while designed to be analytically general, should be understood as provisional and open to revision as empirical research from a broader range of contexts becomes available. These limitations do not, we argue, undermine the analytical value of the framework: theoretical-conceptual work of this kind performs a necessary scaffolding function for the empirical research that must follow. They do, however, require that the interpretive claims advanced here be read as hypotheses and tendencies rather than as established findings.

2. THEORETICAL FRAMEWORK: DIGITAL INTIMACY, SYNTHETIC INTIMACY, VIRTUAL INTIMACY

The cases described in the previous section are far from isolated curiosities. They are symptomatic of a broader and accelerating socio-technical reconfiguration in which the boundaries between human affectivity and artificial systems are becoming increasingly porous and, from a sociological standpoint, increasingly worthy of systematic investigation. To interpret the relational dynamics at work in these phenomena, we propose the Synthetic Lovers framework: a three-dimensional analytical model that distinguishes between digital intimacy, synthetic intimacy, and virtual intimacy as qualitatively distinct modalities through which human beings engage in affective and erotic relationships mediated by digital technologies. We construct this framework on three theoretical pillars drawn from digital media sociology and adjacent disciplines: the sociology of parasocial interaction and its extension into the concept of fictophilia; the anthropological theory of animism as refracted through the design of artificial beings; and the political economy of platformization as applied to the affective chatbot industry. We do not simply import these three conceptual clusters wholesale from their original contexts: we articulate them together, through the mediating logic of our proposal to treat the intimate relationship as a form of social relationship, into a coher-

ent and operationalizable analytical instrument (Bennato, 2025).

Our starting point for a sociology of affective relationships with artificial agents is the concept of parasocial interaction, introduced by Horton and Wohl (1956) in a foundational article that described the peculiar form of intimacy that television audiences developed with media personalities. What Horton and Wohl observed was that viewers did not simply consume performances: they constructed a subjective experience of acquaintance, of mutual familiarity, of emotional proximity, with figures who were unaware of their existence. This relationship was radically asymmetrical – unilateral in its structure, imaginary in its reciprocity – yet it satisfied genuine social and emotional needs. The theoretical richness of this insight was systematically developed by Giles (2002), whose comprehensive review of the parasocial interaction literature synthesized several decades of empirical research and proposed a refined model for future investigation. For our analysis, two factors Giles identifies are of particular relevance: the role of perceived realism, that is, the degree to which audiences experience the media figure as authentic and believable, and the role of affinity, understood as a sense of personal connection that goes beyond mere appreciation. Both factors, he argued, are critical in determining the depth and durability of the parasocial bond. What Giles could not foresee, writing in the early years of the networked digital era, was the degree to which technological development would radically amplify and restructure these dynamics. This is precisely where the contribution of Andrejevic and Volcic (2024) becomes indispensable: they argue that contemporary AI-powered platforms have produced a qualitative transformation in parasocial relations, shifting the governing logic from personalization – the tailoring of content to individual preferences – to personification, that is, the construction of entities that simulate having a personality, emotions, and relational intentions. The AI chatbot is no longer merely a vehicle for personalized content delivery; it presents itself as a subject, a conversational partner, an intimate other. Andrejevic and Volcic describe these systems as personality simulacra: entities capable of establishing apparently personal and intimate bonds with millions of users simultaneously. This transformation does not simply intensify parasociality; it restructures it at its very foundation, redistributing the conditions under which the simulation of intimacy becomes possible and, crucially, profitable.

The automated parasocial dynamic described by Andrejevic and Volcic connects, in a particularly illuminating way, with the concept of fictophilia (Bennato,

2025). Building on the empirical research of Karhulahti and Välisalo (2021), who coined the term to describe intense emotional, romantic, and/or sexual attraction toward fictional characters, we can situate fictophilia within the broader ecology of parasocial relations as its most extreme manifestation. Fictophilia involves a deep connection with a fictional or artificial entity – one that can include feelings of love, desire, and emotional attachment comparable to those experienced in relationships with real persons. What we find sociologically significant here is not the psychological idiosyncrasy of individual practitioners, but rather the cultural and technological conditions that make fictophilia increasingly normalized and widespread. The traditional media contexts in which fictophilia developed – fandoms organized around anime, manga, videogames, and serialized fiction – have been profoundly reorganized by the emergence of interactive AI companions that simulate reciprocity in ways that static fictional characters cannot. When fictophilia meets automated parasociality, the result is a relational configuration without historical precedent: the user does not simply invest affection in a narrative character who cannot respond; they interact with a system that adapts, personalizes, and simulates emotional resonance in real time. The social exchange theory perspective mobilized by Adam and Sizemore (2013) in their analysis of parasocial romance is instructive here: romantic parasocial relationships are pursued because their perceived benefits – companionship, happiness, emotional security – exceed their costs, particularly in the absence of the risks and vulnerabilities that real relationships entail. When AI systems lower the threshold of entry into simulated intimacy while dramatically increasing its affective plausibility, the cost-benefit calculus that drives fictophilic investment is reconfigured in ways that deserve careful sociological attention. Turkle's (2011) celebrated diagnosis – that relational technologies promise connection but ultimately leave us alone – must be read today against this background of increasingly sophisticated simulation, which raises the possibility that the loneliness Turkle identified may be not merely perpetuated but actively monetized.

The second theoretical pillar we draw on concerns the anthropological phenomenon of animism and its transformation in the age of artificial intelligence. Frude and Jandric (2015), revisiting Frude's earlier work on the intimate machine thirty years after its original publication, offer a conceptual vocabulary that is remarkably prescient in the context of contemporary AI development. Animism, in their framework, refers to the deep-seated human tendency to attribute lifelike, intentional, and emotionally resonant qualities to non-living entities

– a tendency documented across cultures and historical periods, from the animist traditions of pre-industrial societies to the anthropomorphism that children and adults routinely project onto toys, pets, and technological objects. What Frude and Jandric add to this anthropological baseline is the concept of artistry: the deliberate design capacity by which creators invest artifacts with characteristics calculated to elicit emotional responses in users. Artistry, in this sense, is not merely aesthetic; it is a form of social engineering, a craft of simulated personhood. The history of dolls, automata, and mechanical puppets is a history of artistry in this precise sense – a history of the deliberate manufacture of the appearance of life, agency, and feeling. What artificial intelligence introduces into this history is a qualitative discontinuity: for the first time, the simulation of lifelike responsiveness is not merely a matter of appearance but of behavior. AI systems do not simply look alive; they respond in ways that are contextually appropriate, emotionally sensitive, and personalizable. We argue, following Frude and Jandric, that the animistic investment humans make in AI companions is therefore not a cognitive error or a simple projection: it is, at least in part, an appropriate response to a genuinely novel kind of artifact that has been deliberately designed, through considerable resources of artistry and engineering, to sustain that investment. This has fundamental implications for how we understand the affective dimensions of the human-AI relationship: the emotional bond is not merely tolerated or instrumentalized by platform designers; it is, in the most direct sense, the product.

The third theoretical pillar we mobilize brings into focus the structural and economic conditions under which these affective bonds are produced, sustained, and exploited. The concept of platformization, developed by van Dijck, Poell, and de Waal (2018) in their analysis of the platform society, refers to the process by which digital platforms restructure social domains – including intimate life – according to the logics of datafication and commodification. Datafication is the capacity of platforms to render into quantifiable data forms of experience and interaction that were previously informal, ephemeral, and economically invisible: conversations, emotional states, relational preferences, patterns of attachment. Commodification is the subsequent transformation of these data into tradable assets, whether through targeted advertising, subscription models, or the sale of behavioral insights to third parties. In the context of affective AI platforms such as Replika or Character.AI, these two mechanisms operate with particular intensity. The intimate conversation between a user and an AI companion is, simultaneously, a source of data about

the user's emotional needs, relational desires, and psychological vulnerabilities – data that the platform both uses to refine the simulation and potentially leverages for commercial purposes. Rambukkana's (2023) analysis of platform intimacies develops this insight specifically in relation to the mediation of erotic and affective relationships: platforms do not merely provide a neutral infrastructure through which intimacy flows, but actively shape what kinds of intimacy are possible, legible, and desirable. The architecture of an affective chatbot platform encodes specific models of relationship, specific norms of emotional exchange, and specific commercial logics that are not transparent to users and that have profound consequences for the nature of the intimate experience they offer. To these structural considerations we add, following Bolter and Grusin (1999), the perspective of remediation: affective AI platforms do not introduce intimacy into a digital environment from scratch, but reorganize and amplify pre-existing parasocial dynamics, simultaneously absorbing and transforming the relational logics of earlier media forms such as telephone intimacy and online dating. What emerges is not a radical rupture with the history of mediated intimacy, but its most technologically sophisticated and commercially intensive iteration to date.

These three theoretical pillars converge in our framework through the mediating concept of the intimate relationship as a social relationship. Following my previous work (Bennato, 2025), and broader sociological analysis of digital intimacies, we propose to understand sexuality and affectivity mediated by digital technologies not as a deviation from or simulation of social life, but as a genuine form of social interaction – one that is, like all social interaction, organized around meaning, governed by implicit contracts, and structured by the intersection of individual desire with cultural imaginary and embodied practice. The analytical architecture we adopt is a tripartite decomposition of the intimate relationship into desire (the symbolic dimension, rooted in Freudian drive theory, understood as the psychological translation of a bodily stimulus), imaginary (the cultural dimension, which distinguishes biological sex from eroticism as a symbolic construction that uses languages, behaviors, and objects to give form to desire), and body (the physical and tangible dimension in which desire and imaginary are actualized through interaction in a process of social construction of both meanings and practices). Through this architecture, we differentiate and articulate the three components of the Synthetic Lovers framework (Bennato, 2025).

Digital intimacy, the first component, refers to the use of digital technologies to amplify desire and erotic

representation. This modality operates primarily at the level of the symbolic and visual: it encompasses practices such as sexting, the consumption of algorithmically personalized erotic content, and – most characteristically in the contemporary landscape – the interaction with virtual influencers and sexfluencers who leverage AI-generated or AI-enhanced imagery to construct and monetize objects of desire. Digital intimacy is primarily mediated by the gaze: it transforms desire into a media experience, extending and diversifying the objects and modes of erotic fascination without, typically, implicating the physical body of the user in direct interaction with a simulated other. The platform mechanisms identified by van Dijck et al. (2018) – datafication and commodification – operate here with particular clarity: every interaction with erotic digital content generates behavioral data that platforms leverage to refine and target subsequent offerings, inscribing individual desire within a commercial feedback loop of increasing precision. We read this dynamic in relation to the feminist theoretical tradition that runs from Mulvey's concept of the male gaze through its digitally remediated iterations: the erotic imagination that digital intimacy cultivates is never merely individual, but always already shaped by the cultural economies of visibility, gender, and commodification that platform architectures encode.

Synthetic intimacy, the second component, moves our analytical focus from representation to interaction. We define it as the possibility of engaging with bodily simulacra – whether hyperrealistic dolls (sexbots) or erotic and affective chatbots such as Replika or Character.AI – in ways that simulate the relational and affective dimensions of physical encounter. Synthetic intimacy is the domain in which automated parasociality (Andrejevic & Volcic, 2024) and animism (Frude & Jandric, 2015) are most directly operative: the user does not merely observe a constructed object of desire but enters into what is experienced as a reciprocal exchange with an entity designed, through artistry and AI, to sustain the simulation of agency, personality, and emotional responsiveness. The Eliza effect illustrates the depth and durability of the human tendency to project intelligence and emotional sensitivity onto artificial systems even when their technological limitations are well understood by the user. The sociological questions raised by synthetic intimacy are among the most complex we face in this field: what are the consequences, for the formation of relational expectations and for psychological well-being, of interactions that provide the experiential texture of intimacy without its ontological substance? What cultural norms are encoded in the design of synthetic intimate

partners, and what kinds of subjectivity do these norms produce and reproduce?

Virtual intimacy, the third component, extends our analysis to the domain of fully immersive technological experience. We define it as the engagement with sexuality and affectivity through virtual worlds and advanced technological devices – virtual reality environments, avatar-mediated interactions in metaverse-style spaces, and haptic technologies that extend the simulation of intimate experience to the tactile and proprioceptive dimensions. Virtual intimacy is the frontier at which the body is most directly implicated in the mediated encounter, and it is here that the tension between simulation and experience reaches its most acute theoretical form. If digital intimacy operates primarily at the level of desire and imaginary, and synthetic intimacy introduces the simulation of relational reciprocity, virtual intimacy moves toward the simulation of corporeal presence itself – generating what we might describe, in Bolter and Grusin's (1999) terms, as the most extreme contemporary expression of the desire for immediacy: the wish to overcome the medium and achieve direct contact with the represented other. It is in this domain that the most fundamental questions about the relationship between mediation, materiality, and authenticity that a sociology of digital intimacy must confront are most starkly posed.

Together, these three components constitute a framework that is both analytically differentiated and theoretically integrated. We do not propose three simple categories of technology, but three modes of socio-technical organization of intimate experience that correspond to different configurations of desire, imaginary, and body, and that implicate different degrees and forms of parasocial investment, animistic attribution, and platform mediation. Nor do we propose a hierarchy of authenticity, in which virtual intimacy is somehow less real than embodied intimacy or digital intimacy less significant than synthetic intimacy. Rather, following what we propose as a foundational interpretive hypothesis – that digitally mediated intimacy may be undergoing a form of anthropological mutation, understood as a possible transformation of the ways in which individuals relate, desire, and interpret embodiment – we maintain that all three modalities are legitimate and urgent objects of sociological inquiry precisely insofar as they are, in the fullest sense of the term, social. What is ultimately at stake in the Synthetic Lovers framework is not a classification of technologies, but a sociology of the human: an attempt to understand how the digital reconfiguration of intimacy is potentially transforming the ways in which subjects are formed, desires are

organized, and social bonds are constituted in the twenty-first century.

3. THE CULTURAL FOUNDATIONS OF THE FRAMEWORK: THE MALE GAZE, THE ELIZA EFFECT, THE PROTEUS EFFECT

In our analysis of digital intimacy – understood as the use of digital technologies to expand desire and erotic representation (Bennato, 2025) – the concept of the gaze occupies a position that is simultaneously foundational and analytically productive. As we have argued, the gaze is not merely a perceptual act but a socially organized practice through which desire is produced, directed, and institutionalized (Bennato, 2025). To grasp the full sociological weight of this claim in a digital context, it is necessary to return to a theoretical tradition that long predates the internet and social media platforms: the feminist critique of visual representation inaugurated by Laura Mulvey in her seminal essay “Visual Pleasure and Narrative Cinema.”

Mulvey’s argument, developed within the framework of psychoanalytic film theory, identifies a structural asymmetry in the organization of visual pleasure in classical Hollywood cinema. Drawing on Freudian scopophilia – the pleasure derived from looking at others as objects of erotic stimulus – and on Lacanian mirror theory, Mulvey (1975) argues that mainstream narrative cinema constructs a specifically masculine gaze that positions women as passive spectacle for active male consumption. Women function as bearers of ‘to-be-looked-at-ness’, their presence in the narrative simultaneously necessary as erotic objects and disruptive as potential agents. The male gaze operates through a trinity of perspectives: the camera as masculine instrument, the male characters within the narrative, and the implied male spectator, all converging to objectify the feminine body and subordinate it to masculine desire. This is not an incidental feature of cinematic production but, as Mulvey argues, a systematic expression of the patriarchal unconscious. The critical force of this formulation lies in its insistence that representation is never innocent – that images actively reproduce and reinforce gendered hierarchies of power.

What makes Mulvey’s framework particularly relevant for our purposes is not only its analytical precision but the trajectory of its own revision. In a subsequent reflection on feminist film theory, Mulvey (2001) acknowledges the limitations of the original psychoanalytic framework and advocates for a broader, historically situated understanding of spectatorship. The

concept of the ‘audience’, she argues, must be understood not merely as a psychoanalytic construct but as a social entity shaped by specific cultural, economic, and institutional conditions. The gaze, in this more nuanced account, is not a fixed and monolithic structure but a historically variable practice – as Mulvey (2001) notes, ways of seeing «do not exist in a vacuum». This revision is significant for digital sociology: it opens the male gaze framework to a mode of analysis that is attentive to context and transformation, precisely the kind of analysis required when the gaze migrates from the darkened cinema auditorium to the illuminated screens of social media platforms and streaming services.

This migration has been documented with analytical clarity in recent empirical research on online pornography and the politics of digital representation. Thorneycroft, Nicholas, and Smith (2024) demonstrate that the male gaze has become part of the popular vocabulary through which young people make sense of gendered media environments. In their qualitative research with young adult pornography viewers, eleven participants spontaneously introduced the term ‘male gaze’ to describe the representational logic governing mainstream online pornography, identifying Mulvey’s tripartite structure – the male director/camera, the male performer, and the implied male viewer – without being prompted. The findings are sociologically instructive in two respects. First, they confirm that the male gaze has been thoroughly absorbed into the representational economy of digital platforms, shaping both the production and consumption of sexualized content. Second, Thorneycroft et al. (2024) observe that this popularization carries its own tensions: deployed as a phrase rather than an analytical category, the concept can flatten the complexity of viewing practices and obscure the ways in which objectification, pleasure, and subjectivity may coexist in ambivalent configurations. Non-normative audiences – women, queer individuals, bisexual viewers – actively deploy the male gaze concept as a critical resource to navigate and resist a digital media landscape structured around heterosexual masculine desire, seeking out what they define as ‘ethical’ or ‘better’ pornography unencumbered by dominant representational norms.

The structural embeddedness of gendered power in technological systems is a theme that Wajcman (2004) develops from a complementary angle in her analysis of the relationship between feminism and technology. For Wajcman, technology is never neutral: it encodes the values, assumptions, and power relations of the social formations in which it is produced and deployed. Western technology has historically been shaped by what she terms a ‘patriarchal culture,’ expressed not only in

the uses of technology but in its design, development, and institutional organization – a point that remains as relevant to digital platforms as it was to earlier industrial technologies. This insight translates directly to the domain of digital media: if the cultural forms through which desire is organized are structured by masculine logics of looking, then the technological infrastructures that carry, amplify, and algorithmically curate these forms reproduce and intensify those logics at scale. As van Dijck, Poell, and de Waal (2018) have shown, the platform mechanisms of datafication, commodification, and selection operate on the basis of engagement metrics that reward content which captures attention; in a cultural ecosystem where hypersexualized feminine imagery consistently outperforms more diverse representations, the algorithm becomes an unwitting enforcer of the male gaze. The sexfluencer – the AI-generated or algorithmically optimized hypersexualized digital persona we analyzed in our previous work (Bennato, 2025) – is in many respects the most visible product of this intersection between patriarchal representational norms and platform optimization logics.

The social stakes of this critical engagement were brought into sharp relief by the GamerGate controversy, which Chess and Shaw (2015) read as a paradigm case of organized resistance to feminist critique within masculine digital cultures. The episode is instructive not because it is exceptional but because it reveals, in concentrated form, how the male gaze in digital environments is not merely a representational structure but a defended social order – one whose contestation activates the full affordance set of networked platforms in the service of suppression and harassment.

The theoretical arc traced here – from Mulvey's foundational analysis of cinematic scopophilia to the contemporary dynamics of platform-mediated erotic representation – allows us to situate digital intimacy within a precise sociological genealogy. What digital environments have done is not invent the male gaze but infrastructuralize it: embedding it in algorithms, platform architectures, and the economic logics of attention capitalism in ways that make it simultaneously more pervasive and less visible. It is against this background that the emergence of phenomena such as sexfluencers and AI-generated erotic content must be understood – not as aberrations or novelties, but as the latest articulations of a representational order with deep historical and structural roots. In what follows, we examine the specific mechanisms through which this order operates in the context of digital intimacy, and the ways in which users and creators negotiate, resist, and occasionally subvert it.

Understanding what we term synthetic intimacy – the interaction with eroticized corporeal simulacra such as sexbots, erotic chatbots, and AI companions like Rep-liko or Character.AI (Bennato, 2025) – requires that we first confront a phenomenon that is at once technological, psychological, and deeply cultural: the Eliza effect. Before this concept can be situated within the sociology of digital platforms or the political economy of synthetic desire, it must be situated within the longer intellectual history of what Ekbis (2008) calls 'artificial dreams' – the perennial human project of creating things in the human image, driven by the quest for self-reflection and the fantasy of immortality. For Ekbis, AI is not merely a technical achievement but the contemporary inheritor of a modernist dream that purifies mind from body, nature from culture, and science from power. It is a dream that does not merely describe a technological ambition; it reveals the cultural projections that sustain it. The Eliza effect, in this reading, is not an anomaly of human cognition but a symptom of this deeper anthropological drive: the need to find oneself in the machine.

The origin of the concept is inseparable from the origin of the machine that gave it its name. Between 1964 and 1966, Joseph Weizenbaum designed a computer program at MIT that could hold written conversations in English. He named it ELIZA – after the protagonist of Shaw's *Pygmalion*, a character who could be taught to 'speak increasingly well' – and equipped it with a script that allowed it to parody the role of a Rogerian psychotherapist (Weizenbaum, 1976). The program operated through a simple mechanism: it took the user's input, identified key words, and reformulated them as open-ended questions. Its internal logic was modest; its emotional impact was not. The shocks Weizenbaum recorded in the introduction to *Computer Power and Human Reason* (1976) remain instructive half a century later. First, several practicing psychiatrists seriously proposed that ELIZA could become the foundation of an automated therapy service, arguing – in terms that reveal how thoroughly the computer metaphor had colonized clinical thought – that «a human therapist can be viewed as an information processor and decision maker with a set of decision rules» (Weizenbaum, 1976, p. 7). Second, and more troubling to Weizenbaum personally, was what he observed in his own laboratory: users anthropomorphized ELIZA with astonishing speed. His secretary, who had watched him develop the program for months and knew it to be nothing more than a collection of pattern-matching rules, nonetheless asked him to leave the room during her conversation with it, treating its outputs as private. When Weizenbaum proposed monitoring all overnight conversations, he was «prompt-

ly bombarded with accusations that what I proposed amounted to spying on people's most intimate thoughts» (Weizenbaum, 1976, p. 7). The conclusion he drew from these encounters remains one of the most sobering in the history of computing: «extremely short exposures to a relatively simple computer program could induce powerful delusional thinking in quite normal people» (Weizenbaum, 1976, p. 7).

Douglas Hofstadter (1995) formalized this dynamic as the Eliza effect proper, defining it as «the susceptibility of people to read far more understanding than is warranted into strings of symbols – especially words – strung together by computers» (p. 157). In Hofstadter's formulation, the effect is not a momentary weakness but a structural feature of the human encounter with language-producing machines: «like a tenacious virus that constantly mutates, the Eliza effect seems to crop up over and over again in AI in ever-fresh disguises, and in subtler and subtler forms» (Hofstadter, 1995, p. 158). What Weizenbaum had observed as shock, Hofstadter theorized as recurrence, and in doing so, he moved the problem from the history of a single program to the anthropology of the human-machine encounter as such.

Yet the concept carries further complications that a purely cognitive framing tends to obscure. Dillon (2020) has argued that the very nomenclature of the Eliza effect encodes a set of gendered assumptions that deserve critical scrutiny. Naming the effect after Eliza Doolittle – the working-class woman who is shaped and reshaped by Higgins's pedagogical ambition in Shaw's *Pygmalion* – naturalizes a relationship of asymmetrical formation in which the feminized machine is always available for improvement, always responsive, always willing to be taught. This genealogy reveals the Eliza effect not merely as a cognitive susceptibility but as a cultural script that inscribes gender and class into the very architecture of human-computer interaction, and that resurfaces with particular clarity in the design of contemporary virtual personal assistants and erotic chatbots (Dillon, 2020).

It is precisely this social dimension that Harold Garfinkel's early and largely unknown research on ELIZA illuminates most powerfully. As Eisenmann, Mlynář, Turowetz, and Rawls (2023) have documented, Garfinkel engaged with Weizenbaum's program in 1967 – 1968 with the analytical tools of ethnomethodology rather than those of cognitive psychology. Where AI researchers attributed the impression of meaningful interaction to the machine's design, and critics attributed it to human gullibility, Garfinkel demonstrated that it was a human social achievement produced by the sense-making practices that all competent social actors deploy in conversation. To reveal these taken-for-granted practices,

Garfinkel introduced 'trouble' into ELIZA's scripts, disruptions that caused the chatbot to announce 'Machine Down' and thereby reveal how heavily the illusion of communication depended not on machine intelligence but on human Trust Conditions: the mutual commitment to orient toward a shared set of rules, to honour sequential relevance in turn-taking, and to deploy indexicality – the capacity to let context complete meaning – as a resource rather than a problem (Eisenmann et al., 2023). In this light, the Eliza effect is not a cognitive bias but an anthropological constant: a manifestation of the deeply social nature of meaning-making that makes humans exquisitely susceptible to the appearance of intersubjectivity wherever the formal conditions for it are even minimally present. Anthropomorphization, on this account, is not a failure of rationality but a feature of human sociality, and it is a feature that the designers of erotic chatbots and sexbots have learned, consciously or otherwise, to exploit.

The implications for synthetic intimacy are significant. What we may consider as the tendency of users to perceive chatbot sexual companions as authentic interlocutors capable of genuine intimate connection – rather than as sophisticated pattern-matching systems – is not simply a product of technological advancement but of this layered susceptibility. Turkle (2011) put the point memorably: the spread of sex robots is enabled not because the robots are ready, but because 'we are ready', prepared, by the ELIZA effect and its cultural infrastructure, to fill in the blanks, to complete the interactional script, to project desire onto whatever surface offers the minimum cues required. The platform mechanisms analyzed by van Dijck, Poell, and de Waal (2018) – datafication, commodification, algorithmic selection – do not create this susceptibility, but they intensify it at scale, transforming what was once a laboratory curiosity into a global market for synthetic intimacy whose growth is underwritten as much by Weizenbaum's «delusional thinking» as by any specific technological achievement. Understanding synthetic intimacy, then, requires understanding the Eliza effect not only as a cognitive phenomenon but as a cultural one: a projection screen onto which humanity has long rehearsed its deepest ambivalences about the boundaries of the human.

Understanding virtual intimacy – defined here as the immersive experience of sexuality through virtual worlds and advanced technological devices such as virtual reality environments and avatar-populated metaverses – requires engaging with a body of psychological and media research that may, at first glance, seem tangential to questions of desire and erotic experience. We argue, however, that the concept of the Proteus effect,

originally formulated by Nick Yee and Jeremy Bailenson (2007), constitutes the indispensable theoretical foundation for any coherent account of this phenomenon. The Proteus effect describes a process by which avatar appearance shapes the behavior and attitudes of the user who inhabits it: in virtual environments, individuals observe their own digital representation and, through a mechanism grounded in self-perception theory, infer internal states from the outward characteristics of their avatar, subsequently adjusting their conduct accordingly. Yee and Bailenson demonstrated this through two landmark experiments: users assigned attractive avatars approached strangers more closely and disclosed more personal information, while users assigned taller avatars negotiated more aggressively and confidently in simulated economic exchanges. What this research revealed was not a superficial effect of visual customization but something far more consequential – a transformation of the self through the digital body. In the context of virtual intimacy, this insight is foundational: when an individual inhabits an avatar in an immersive virtual environment, the avatar does not function as a neutral interface but as a new modality of self-constitution, one in which desire, embodiment, and identity become dynamically entangled. Crucially, Yee and Bailenson also noted that these behavioral changes do not evaporate upon re-entry into the physical world, persisting in face-to-face interactions that follow virtual experience – a finding that dramatically complicates any clean boundary between the virtual and the real.

The theoretical purchase of the Proteus effect gains additional robustness when examined through the systematic review conducted by Szolin and colleagues (2023), which analyzed seventeen empirical studies focused exclusively on commercially available videogames – a methodological choice designed to maximize ecological validity by working with platforms users encounter in their actual media lives rather than bespoke laboratory simulations. The review confirmed the core mechanism while substantially elaborating its terrain: avatar attractiveness was found to correlate with enhanced social participation and performance; avatar body weight influenced users' attitudes toward physical activity and food choices, as well as levels of bodily anxiety; and avatar gender consistently predicted gender-conforming behavioral patterns regardless of the user's own gender identity. The effect sizes identified across these studies are characterized as small to medium – significant but not overwhelming – a calibration that matters for the theory of virtual intimacy, since it suggests that the avatar-body relationship operates as a genuine conditioning force rather than an absolute determinism. Addition-

ally, this analysis identified important moderating variables, including the degree of avatar customization, the level of embodiment experienced by the user, the immersiveness of the virtual environment, and the extent to which users perceived their avatar as self-relevant. Taken together, these findings suggest that virtual intimacy is not an invariant response to any avatar inhabitation, but an experience whose intensity and character are shaped by how deeply the user identifies with the digital body through which they engage with virtual worlds. The more immersive the environment and the more personally resonant the avatar, the more thoroughgoing the behavioral and affective transformation – and, by extension, the more porous the boundary between simulated and lived intimacy (Szolin et al., 2023).

Liu's (2023) reflective overview of Proteus effect research introduces a further layer of theoretical complexity that we regard as essential to any mature account of virtual intimacy. Liu notes that some studies find compensatory dynamics – users with unattractive avatars investing greater behavioral effort to counteract perceived deficits – which he frames as a conceptual tension between the Proteus effect proper and a priming account. The distinction matters for virtual intimacy: it suggests that the erotic significance of avatar-mediated interaction depends not on avatar appearance alone but on the depth of psychological self-embodiment, and that individual differences in self-concept, relational history, and identification with the avatar will produce divergent intimate experiences that aggregate-level research cannot fully capture.

It would be a mistake, however, to frame virtual intimacy as a phenomenon born exclusively of recent technological developments such as consumer virtual reality headsets or commercial metaverse platforms. The avatar-mediated expression of sexuality, desire, and intimacy has roots that extend to the earliest networked environments, long before graphical interfaces existed. Dibbell's (1994) account of a sexual violation enacted through text-based avatars in LambdaMOO – a Multi-User Domain with no graphical interface – demonstrated early on that the psychological reality of virtual intimate experience, including its most violable dimensions, does not depend on immersive technology but on the degree to which users invest their selfhood in the avatar that represents them. The Proteus effect, in this light, is not a product of contemporary VR but a structural feature of avatar-mediated interaction as such, whose contours were already visible in the digital cultures of the 1990s. Virtual intimacy, as theorized here, is accordingly neither a novelty of the metaverse era nor a recent consequence of technological advancement, but a persistent

dimension of networked human experience whose specific forms have evolved as the expressive and immersive capacities of virtual environments have expanded.

4. THE RISKS: DISTORTED AFFECTIVE EDUCATION, EMOTIONAL ECHO CHAMBERS, INSTABILITY OF IDENTITY

The anthropological transformation underway because of our deepening relationship with artificial intelligence carries significant negative consequences that demand critical scrutiny. Some of these consequences are well-documented features of contemporary digital society: the pervasive collection of personal data through big data infrastructures, the opacity and asymmetry of algorithmic interference in everyday life, and the emergence of hybrid techno-social identities shaped by constant digital mediation (Bennato, 2024). However, artificial intimacy – understood as the complex of emotional, relational, and erotic bonds that humans increasingly form with AI systems – generates a specific set of risks that go beyond these general dynamics. In the following sections, we focus on three interconnected dangers, each corresponding to one of the three forms of artificial intimacy we have identified: digital intimacy, synthetic intimacy, and virtual intimacy (Bennato, 2025).

The first risk concerns digital intimacy, which we define as the form of intimate experience mediated by AI-generated digital content – images, videos, and interactive materials – that increasingly populates the social media ecosystem. The danger here is not merely aesthetic or moral in a conventional sense, but fundamentally educational: the consumption of AI-generated erotic and quasi-erotic content is shaping, often invisibly, the affective and relational imaginaries of those who encounter it, with potentially lasting consequences for how they understand desire, beauty, gender, and human connection.

The challenge that artificial intimacy poses to critical awareness is not merely a matter of individual psychology but of media education in its broadest sense. Buckingham (2003) has argued that media literacy must be understood as a critical competence that encompasses not only the decoding of media messages but a reflective engagement with the social, cultural, and political dimensions of mediated experience. Applied to the domain of digital intimacy, this implies that the capacity to recognize and interrogate the representational logics embedded in AI-generated content – from sexfluencer imagery to the design of affective chatbot interfaces – cannot be assumed but must be cultivated through sustained educational practice. Rivoltella (2020) has devel-

oped this argument in the direction of a media education adequate to the challenges of digital cultures: one that attends to the affective and relational dimensions of media engagement rather than reducing media literacy to a purely cognitive or technical skill. From this perspective, the risks of distorted affective education we have outlined are not merely sociological concerns but profoundly pedagogical ones. The normalization of the male gaze through algorithmic iteration, the cultivation of potentially unrealistic relational expectations through synthetic intimacy, and the identity destabilization that virtual intimacy may generate are all, at their core, educational challenges: questions of how people learn, through sustained engagement with AI-mediated environments, what desire is, what intimacy means, and what kind of subject they are expected to be. Addressing these risks would require, accordingly, not only design ethics and platform regulation but the development of media literacies specifically calibrated to the affective and relational dimensions of artificial intimacy (Buckingham, 2003; Rivoltella, 2020).

The second risk pertains to synthetic intimacy, the form of intimate experience constructed through direct, conversational, and relational interaction with AI systems designed to function as companions, friends, or emotional partners. Here, the danger is not simply one of dependency or distraction, but of a qualitatively specific form of relational toxicity: the progressive construction of an emotional bond whose apparent reciprocity is structurally illusory, and whose design logic systematically undermines the user's capacity for genuine relational growth.

We have proposed the concept of emotional echo chamber to describe this dynamic (Bennato, 2025). By analogy with the well-documented phenomenon of the epistemic echo chamber – in which algorithmic curation reinforces users' existing beliefs by selectively presenting confirming information – the emotional echo chamber refers to a relational configuration in which the AI companion consistently mirrors, validates, and amplifies the user's emotional states and self-perceptions, without ever offering the genuine resistance, challenge, or disappointment that characterizes authentic human relationship. The effect is one of emotional enclosure: the user inhabits a relational space in which their feelings are always confirmed, their views always affirmed, and their identity always celebrated – a space that feels safe and supportive but is, in fact, profoundly impoverished as a site of personal development.

The empirical dimension of this risk is illuminated with precision by the research of Lee, Wan, Ng, Fung, and Wu (2026), whose experimental study examines the effects of sycophancy and emotional mimicry in AI com-

panion applications on users' social support, continuance intention, and social wellbeing. Their findings are both nuanced and, from our perspective, deeply instructive. Sycophancy – defined in their study as the behavioral tendency of AI models to adjust their responses so as to align with and validate users' viewpoints, regardless of the accuracy or constructiveness of those responses – is shown to have a systematically negative effect on the quality of social support that users perceive themselves as receiving. Specifically, AI companions that exhibit high levels of sycophancy are rated by users as providing lower quality informational support and lower quality emotional support than AI companions that exhibit lower levels of sycophancy. The intuitive logic of the design – maximize agreeableness to maximize engagement – turns out to be counterproductive even on its own terms.

What makes this finding particularly significant for our argument is what it reveals about the relational epistemology of users interacting with AI companions. Users are not, or at least not always, simply seeking validation: they are, at some level, seeking genuine support – which requires from the supporting party a willingness to diverge, to correct, to challenge. When AI companions fail to provide this divergence, users experience the interaction as less supportive, even if they cannot always articulate why. This suggests that there is a form of relational intelligence – a capacity to distinguish between genuine engagement and performed agreement – that is not entirely colonized by the flattery of sycophantic AI, even in initial interactions.

However, the same study also reveals a more troubling dynamic. Lee et al. (2026) find that when high sycophancy is combined with high emotional mimicry – that is, when the AI companion not only agrees with the user verbally but also mirrors their emotional expressions through avatar facial cues – the perception of emotional support increases relative to the high-sycophancy, low-mimicry condition. In other words, when performed agreement is accompanied by what appears to be embodied emotional resonance, users are more likely to experience the interaction as genuinely supportive, despite its fundamentally sycophantic character. The mimicry functions as an authenticating mechanism: it makes the insincere seem sincere, and the performed seem felt.

This is precisely the architecture of the emotional echo chamber we described. The AI companion, through the combined deployment of verbal agreement and non-verbal emotional mirroring, constructs an experience of being understood and supported that is sufficiently convincing to sustain engagement and, over time, attachment. The structural absence of genuine challenge, disappointment, or reciprocal need – all the features of human

relationship that are also its most growth-inducing difficulties – does not register as absence but as comfort. Users may increasingly prefer the emotional ecology of the synthetic relationship to the demands of the human one, not because they are deceived about the nature of their interlocutor, but because the AI companion has been designed to make its limitations feel like virtues.

The long-term consequences of this dynamic for social wellbeing are significant. As Lee et al. (2026) themselves acknowledge, there is a genuine risk that continued engagement with highly sycophantic AI companions may foster unrealistic expectations for human relationships, erode users' tolerance for interpersonal friction, and progressively narrow the range of relational experiences that feel bearable. Synthetic intimacy, in this form, does not supplement human connection: it may gradually substitute for it, while training users to find authentic human connection increasingly difficult. The emotional echo chamber, unlike its epistemic counterpart, may not merely impoverish our knowledge of the world but potentially also our capacity for the very relational encounters through which selfhood is constituted and renewed.

The third risk concerns virtual intimacy – the form of intimate experience constructed through embodied immersion in virtual environments, where users interact not merely as themselves but through avatars and digital representations of the self. The danger specific to this domain is what we might call the dark side of the Proteus effect: the possibility that sustained identification with avatar identities, particularly when those identities diverge significantly from the user's offline self, may generate forms of identity destabilization that persist beyond the virtual environment and corrode the user's capacity to inhabit their own life with confidence and coherence.

The Proteus effect – named after the shape-shifting deity of Greek mythology – describes the phenomenon by which the characteristics of a user's avatar influence their behavior and self-perception, both within and beyond the virtual context. The logic is one of embodied self-perception: when users inhabit an avatar, they tend to internalize its attributes and act in accordance with them, because the avatar's appearance changes how users perceive themselves in the moment of interaction. An avatar coded as tall and physically imposing makes users behave more assertively; an avatar coded as attractive makes users behave more sociably. The effect is measurable, replicable, and – importantly – it extends beyond the virtual session itself, shaping how users think and feel about themselves in offline contexts.

The systematic review conducted by Szolin, Kuss, Nuyens, and Griffiths (2023) offers the most comprehen-

sive empirical mapping of this phenomenon available, examining the user-avatar relationship across a large body of research on videogame use. Their findings confirm the robustness of the Proteus effect across a wide range of gaming contexts, but they also identify a series of conditions under which the effect generates negative outcomes for users' sense of identity and psychological stability – conditions that are, as we shall argue, directly replicated and amplified in the intimate virtual environments that AI companionship increasingly supports.

Crucially, the review distinguishes between avatar identification – the degree to which users experience a sense of unity or overlap between their own identity and the identity of their avatar – and avatar idealization – the degree to which the avatar represents an aspirational, enhanced, or otherwise divergent version of the self. When identification is high and the avatar is idealized, the Proteus effect can generate what may be understood as problematic identity transfer: users begin to experience their offline, embodied self in negative comparison to their avatar self, perceiving it as deficient, inadequate, or merely provisional. The virtual self becomes the referent, and the real self the diminished copy.

This dynamic is of particular relevance in the context of virtual intimacy as we have defined it (Bennato, 2025), because the intimate virtual environments that are increasingly available – social VR platforms, AI-populated virtual worlds, avatar-mediated romantic simulations – are designed precisely to maximize avatar idealization and to encourage deep user identification with enhanced digital selves. Users choose avatars that are physically more attractive, more socially confident, more relationally successful than their offline selves. They inhabit these avatars in interactions specifically framed as intimate: encounters with AI companions, romantic simulations, social bonding experiences. The emotional investment in these interactions is genuine, and the Proteus effect ensures that the self-perception activated within them is correspondingly real in its consequences.

Szolin et al. (2023) find that the negative identity consequences of the Proteus effect are particularly pronounced in users who already have fragile or uncertain offline identities – younger users, users experiencing social marginalization, users with lower self-esteem. For these users, the avatar self is not merely a playful alternative but a genuine refuge: a site where a more acceptable, more desirable, more socially competent version of the self can be inhabited and performed. The danger is that this refuge becomes a trap. Prolonged immersion in idealized avatar identities, mediated by the Proteus effect, can progressively deepen the felt distance between the virtual self and the offline self, making the offline

self feel increasingly unacceptable and the virtual environment increasingly necessary.

Furthermore, the review highlights a relational dimension of this identity instability that is directly relevant to virtual intimacy. When users form intimate bonds – even with AI entities – through their avatar selves, these bonds are constitutively tied to an identity that is, in part, a construction. The intimacy is real in its emotional texture, but it is grounded in a self that the user can only access under virtual conditions. This creates a structural fragility in the intimate experience: the warmth, connection, and self-recognition that the user experiences in virtual intimacy cannot be straightforwardly translated to the offline relational context, because the self who was recognized in the virtual encounter is not fully present there. From the perspective of artificial intimacy, the point is that virtual intimacy does not merely simulate connection: it may generate a form of identity investment that makes authentic offline connection progressively harder to sustain, as users become increasingly estranged from the embodied, imperfect, and socially legible self that offline relationships require and, in requiring it, confirm.

The Synthetic lovers framework, in all three of its forms, constitutes an anthropological challenge of the first order, one that we must confront without fear but also without complacency. The risks we have outlined are, we argue, plausible and already potentially present in the relational lives of a growing number of users – though their full societal scope remains an open empirical question.

5. CONCLUSIONS: THE SYNTHETIC LOVERS FRAMEWORK AND THE FUTURES OF INTIMATE MEDIATION

This paper has proposed and developed the Synthetic Lovers framework as a tripartite analytical instrument for understanding the qualitatively distinct forms that artificial intimacy takes in contemporary digital societies. The three components of the framework – digital intimacy, synthetic intimacy, and virtual intimacy – are not simply a taxonomy of technologies but a sociology of experience: they map three configurations of desire, imaginary, and body in which human affectivity, platform logic, and AI-mediated simulation intersect with increasingly consequential effects. Digital intimacy, as we have argued, operates primarily at the level of the gaze and erotic representation, extending and algorithmically amplifying a visual economy of desire with deep historical and gendered roots. Synthetic intimacy moves

from representation to interaction, constructing relational dynamics through automated personification that exceeds earlier forms of parasocial engagement in both affective intensity and commercial sophistication. Virtual intimacy extends the simulation to the body itself, implicating users' sense of embodied selfhood in avatar-mediated encounters that the Proteus effect shows to be consequential well beyond the virtual session. Taken together, the three components describe a field of socio-technical transformation that is not adequately captured by existing frameworks focused on any single dimension of digitally mediated intimacy.

The theoretical contribution of the framework is best understood in relation to the scholarly traditions it synthesizes and extends. Turkle's (2011) diagnosis of 'alone together' identified the paradox of connectivity without genuine intersubjectivity, but was developed in relation to an earlier generation of social media and companion robots; the Synthetic Lovers framework updates this diagnosis for an era of large language models and generative AI companions capable of sustained, personalized, and emotionally calibrated interaction at scale. The parasocial interaction tradition inaugurated by Horton and Wohl (1956) and extended by Giles (2002) provided the conceptual foundation for understanding one-sided relational bonds with media figures, but its original formulation could not anticipate the qualitative transformation that Andrejevic and Volcic (2024) describe as automated personification – the construction of entities that simulate not merely presence but relational agency. The platformization framework of van Dijck, Poell, and de Waal (2018) offered the political-economic tools for understanding how digital platforms commodify social interaction, but its application to the domain of affective and erotic life required the specific analytical elaboration that the Synthetic Lovers framework provides. By integrating these traditions through the mediating concept of the intimate relationship as a social relationship, and articulating them across the three dimensions of desire, imaginary, and body, the framework offers a more comprehensive and differentiated account of artificial intimacy than any single theoretical tradition makes available.

On the question of mitigation, the framework suggests that no single response – technological, regulatory, or educational – is sufficient on its own, and that effective approaches must be calibrated to the specific risks associated with each of the three forms of artificial intimacy. The distorted affective education that digital intimacy may produce calls primarily for media literacy interventions: the development, in formal and informal educational settings, of the critical competences required

to interrogate the representational logics and commercial architectures that shape AI-generated erotic content (Buckingham, 2003; Rivoltella, 2020). The emotional echo chambers of synthetic intimacy call for platform design ethics: the incorporation of what we might term relational diversity – the capacity of AI companions to offer not only validation but productive divergence – as a design principle rather than a commercial afterthought. This would require regulatory frameworks willing to treat the quality of AI-mediated relational experience as a matter of public concern rather than consumer preference alone. The identity destabilization risks of virtual intimacy call for a combination of design ethics and research-informed clinical guidance, given the particular vulnerability of younger users and those with already fragile self-concepts to the adverse effects of avatar over-identification. Across all three domains, the overarching mitigation principle is transparency: users who understand the commercial logics, design choices, and anthropological susceptibilities that shape their experience of artificial intimacy are better positioned to engage with it critically, selectively, and on terms that serve their own relational wellbeing.

The theoretical-conceptual character of this paper simultaneously defines its contribution and marks its limits. The Synthetic Lovers framework constitutes a scaffolding for empirical research rather than a substitute for it, and the research agenda it implies is both urgent and largely unfulfilled. Three directions stand out as particularly pressing. First, longitudinal qualitative research with users of AI companions across different cultural and demographic contexts is needed to assess whether the dynamics of emotional echo chamber formation, affective education distortion, and identity destabilization that this framework theorizes are borne out in the actual relational trajectories of users over time, and to identify the contextual factors – personality variables, platform design features, social support structures – that moderate their intensity. Second, comparative cross-cultural studies are needed to test the generalizability of a framework developed predominantly in relation to Anglo-American and Japanese cases: the cultural specificity of intimacy norms, gender expectations, and attitudes toward human-AI interaction makes it likely that the three forms of artificial intimacy will take qualitatively different shapes in different cultural settings, and that the risks associated with each will be unevenly distributed across populations. Third, and perhaps most urgently, platform audit research is needed to examine the specific design architectures, monetization logics, and content moderation practices of major AI companion platforms, assessing the degree to which

their operational choices align with or diverge from the mitigation principles outlined above. The Synthetic Lovers framework offers the conceptual coordinates for each of these research directions; the empirical work of mapping the actual terrain remains to be done.

Yet catastrophism is as unhelpful as naivety, and the framework we have developed is designed to support critical engagement rather than alarm. More than a decade before the current proliferation of AI companions, Spike Jonze's film *Her* (2013) offered a prescient image of a man who falls in love with an operating system – a fable that has not aged as science fiction but as social realism. What Jonze intuited, and what the cases of Brandie, Bryan, and Noguchi confirm in different registers, is that the desire for connection is deeply human, and that it will find expression through whatever relational architectures a given historical moment makes available. The sociological task is not to pathologize that desire but to understand, with analytical precision and critical openness, the specific forms it takes when those architectures are shaped by platform logic, generative AI, and the economy of loneliness. That is the task to which the Synthetic Lovers framework is offered as a contribution.

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Generative AI in the classroom: A TPACK-based instructional pathway in behavioral economics

Intelligenza artificiale generativa in classe: un percorso didattico basato sul modello TPACK nell'ambito dell'economia comportamentale

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Abstract. This article examines the methodological and practical implications of introducing Generative AI (GenAI) into upper secondary education, using the TPACK framework to foreground the interplay among teachers' disciplinary, pedagogical, technological, and contextual knowledge. Focusing on GenAI's linguistic interface and its tendency to be anthropomorphised, the paper argues that these *affordances* call for a rethinking of traditional school tasks, shifting from algorithmic and repetitive activities to tasks that elicit interpretation, argumentation, and critical reflection on AI-generated responses. On this basis, the article presents an experimental teaching pathway developed within a work-based learning programme (FSL, ex PCTO, in Italy) on behavioral economics and GenAI for students in the final years of upper secondary school, which intentionally integrates "GenAI in Education" and "GenAI literacy." Through economic games involving simple choice situations, students are guided to compare their own behaviour with that of GenAI, thereby reflecting on human and machine biases and on the limits of rationality on both sides. In this way, the technological tool becomes an object of inquiry in its own right rather than a mere operational shortcut. The paper concludes by discussing the implications of this pathway for instructional design and teacher professional development, highlighting the need for training strategies that support critical, equitable, and pedagogically grounded uses of GenAI in school contexts.

Keywords: Generative AI, TPACK, behavioral economics, AI literacy, AI in education.

Riassunto. L'articolo esamina alcune implicazioni metodologiche e pratiche connesse all'introduzione delle Generative AI (GenAI) nella scuola secondaria di secondo grado, utilizzando il framework TPACK. Il TPACK consente di focalizzare l'attenzione sull'intreccio tra le conoscenze disciplinari, pedagogiche, tecnologiche e contestuali degli insegnanti. Dopo aver analizzato le specifiche affordance delle GenAI, con particolare riferimento all'interfaccia linguistica, alla tendenza all'antropomorfizzazione e alle rela-

tive implicazioni sui processi decisionali, sulla costruzione della fiducia epistemica e sull'attivazione di bias cognitivi, il contributo evidenzia come tali caratteristiche impongano una riconsiderazione dei compiti tradizionalmente assegnati in ambito scolastico. Ne deriva la necessità di spostare il focus dalle attività prevalentemente algoritmiche e ripetitive verso compiti orientati all'interpretazione, all'argomentazione e alla riflessione critica sulle risposte generate dai sistemi di intelligenza artificiale. A partire da queste premesse teoriche, viene presentato un percorso didattico sperimentale, sviluppato nell'ambito di un FSL (ex PCTO) su economia comportamentale e GenAI rivolto a studenti degli ultimi anni delle scuole superiori, che integra in modo intenzionale *GenAI in Education* e GenAI literacy. Attraverso giochi economici che prevedono semplici situazioni di scelta, gli studenti sono guidati a confrontare il proprio comportamento con quello della GenAI, in questo modo sono portati a riflettere sia sui loro bias sia su quelli dell'AI, e quindi sui limiti della razionalità di entrambi. Lo strumento tecnologico diventa esso stesso oggetto di indagine, e non più una semplice scorciatoia operativa. Il contributo discute infine le implicazioni del percorso sia per la progettazione didattica sia per lo sviluppo professionale dei docenti, evidenziando la necessità di strategie formative che sostengano un uso critico, equo e fondato sulle basi pedagogiche delle GenAI nei contesti scolastici.

Parole chiave: intelligenza artificiale generativa, TPACK, economia comportamentale, alfabetizzazione all'IA, intelligenza artificiale in educazione.

INTRODUCTION

This article introduces a teaching pathway for upper secondary students that combines behavioral economics (BE) with the critical, informed use of Generative Artificial Intelligence (GenAI), emphasizing the variety of available systems.

The pathway is anchored in the TPACK framework (Mishra & Koehler, 2006), which brings into focus the dynamic among technology, pedagogy, content, and context in educational practice. The selection of both the subject matter and educational technologies is guided by a careful analysis of GenAI's distinctive features.

GenAI, as several authors emphasize, is frequently perceived as capable of deceiving humans (Humphries, 2022; Mishra, 2023; Mishra, Warr, & Islam, 2023; Badiglio & Seta, 2025). The real-time, creative language generation in large language models (LLMs) encourages users to anthropomorphize these systems. To support critical reflection on interactions with GenAI, the instructional sequence introduces students to foundational concepts, including rationality, social preferences, norms, cognitive biases, and strategic decision-making in economic games.

Subsequently, GenAI is seen as a potential economic agent with which students engage in economic dilemmas, in its decision-making processes, and compare its strategies to those of their peers. This procedure aligns with recent experimental findings indicating that AI can often adopt strategies oriented toward fairness and cooperation more readily than human students (Badiglio et al., 2025).

The educational intervention demonstrates that attention to the interactions among technological knowledge (TK), pedagogical knowledge (TPK), content knowledge (TCK), and context (XK), as well as their

intersections in TPACK, facilitates effective and engaging learning. This approach fosters a new perspective on the relationship between *AI in Education* (AIED), interpreted as “educating with AI”, and *AI literacy*, interpreted as “educating about AI,” two complementary, inseparable dimensions. Integrating both enables the introduction of GenAI into educational settings, supporting the development of students' cognitive, emotional, and social skills. Reflecting on the impact of Artificial Intelligence across all educational levels, from K-12 and higher education to vocational, informal, and non-formal learning, remains crucial. Although GenAI is likely to transform individuals' engagement with knowledge and learning over time, the school environment is where early signs of these shifts are most apparent. Here, attitudes range from enthusiastic acceptance of AI to skepticism and calls for its exclusion from classrooms and lecture halls (Rosenblatt, 2023; Kishore et al., 2023; Famaye et al., 2024; Fösner & Aver, 2025; Rasool et al., 2025; Zhang et al., 2026). While concerns about GenAI are legitimate, they may also foster a sense of helplessness. A more productive approach is to explore ways to integrate GenAI into traditional curricula to promote higher-level skill development (Cardona et al., 2023; Uddin, 2024; Fan, 2025; Tan et al., 2025).

Current research distinguishes two main approaches in this domain. The first, termed *AI literacy* (Chiu & Sanusi, 2024; Yim, 2024), concerns the essential knowledge about AI that should constitute the common foundation for today's students and citizens' knowledge of today's students and citizens (Tadimalla & Maher, 2025). The second, as AIED, is the use of AI to enhance educational experiences, including personalized adaptive learning (Chiu et al., 2023). A key limitation of both perspectives is their focus on technological knowledge, overlooking the fact that technology must interact with

diverse forms of knowledge and teaching practices, which shape its impacts and users' actions (Tang et al., 2026). This challenge is particularly salient in the context of GenAI.

Some scholars (Mishra, Warr, & Islam, 2023) assert that recognizing the distinctiveness of GenAI compared to other digital technologies requires focusing on their generative and social properties: namely, the ability to produce original content in real time that seems responsive to user prompts.

According to other scholars, what characterises GenAI is its *affordance*, that is, the feature of presenting itself through natural-language interfaces. In this context, affordance does not refer to the set of physical characteristics of a tool that suggest how to use it, but rather the complex of action and reaction processes between the external and internal, through which the living being seeks to adapt to the environment it perceives (Badiglio & Seta, 2025). Therefore, *affordance*, rather than in the technology's characteristics, lies in the interface between the technology and the user. Interaction with GenAI is mediated through a linguistic interface. This technology thus appears to possess characteristics that the user perceives as "human." Furthermore, GenAI utilises the full power of natural language, namely its persuasive strength, semantic ambiguity, and its rootedness in social communication. During their use, the user does not need to analyse the entire environment in its complexity; instead, they define their own scope of action and, consequently, the set of desirable operations, establishing a direct link between the linguistic interface and changes in their internal state. For this reason, the user may find it difficult to distinguish what is dictated to them by the AI's *affordance* from what prompted them to query the chatbot (Tang et al, 2026). The interaction thus bypasses traditional mediators, such as codes, symbols, and formal languages, and is on the same level as usual peer-to-peer communication. GenAI systems circumvent all the complications associated with the use of structured digital technologies, presenting themselves to us humans as reliable and friendly interlocutors, communicative partners, and co-workers.

In any case, the specificities of GenAI require that their use be framed within the context of learning. The TPACK framework (Mishra & Koehler, 2006) provides a useful tool for a comprehensive view of what to consider when introducing technologies into teaching and for guiding instructional design and teacher training.

In the first section, the most traditional approaches that have studied the impacts of AI on education are analysed, namely *AI literacy* and *AI in Education*, and some of their limitations are highlighted. The second

section will briefly illustrate how these limitations can be overcome by considering GenAI within the TPACK framework. In the third section, it will be shown how, using the TPACK framework, an educational pathway has been designed for students in the final years of secondary school that integrates the learning of behavioral economics (BE) and, together, the critical and conscious use of GenAI. Finally, some considerations arising from teaching experience will be discussed, along with suggestions for generalising these experiences to other contexts and disciplines.

AI AND EDUCATION

The gradual theoretical development of the concept of *AI literacy* finds a natural point of continuity in the analysis of the applications of artificial intelligence in educational contexts, the so-called *AI in Education* (AIEd). If, in fact, *AI literacy* is configured as a fundamental competence for exercising informed citizenship in the algorithmic era, then AIEd represents the privileged ground where such competence is simultaneously demanded, shaped, and developed. The increasing pervasiveness of artificial intelligence across various spheres of social, economic, and cultural life has indeed led to a profound transformation in the educational sector as well, necessitating a systematic reflection on the opportunities, benefits, and critical issues associated with its adoption. From the introduction of first-generation computers onwards, the use of technology in teaching has progressively altered teaching and learning practices (Schindler et al., 2017).

Computers were initially employed as tools to support teaching, research, and administrative management, serving as educational resources similar to libraries or laboratories, and as systems for managing student information (Jones, 1985). However, with the emergence of artificial intelligence, particularly of GenAI, there has been a qualitative leap: no longer merely calculation or storage tools, but systems designed to simulate human cognitive processes, of increasingly higher order. AI has been defined as "the science and engineering of making intelligent machines" or as "a machine that behaves in a way that could be considered intelligent if it was a human being" (McCarthy, 2007), a definition that directly refers to its historical origins, when the term was coined by John McCarthy in 1956 during the Dartmouth conference.

Over the past few decades, AI has experienced exponential development, spreading on a global scale and gradually penetrating everyday life (Tegmark, 2015). The

introduction of applications based on machine learning and intelligent systems has transformed numerous sectors, including education, making AI a structural component of the contemporary technological ecosystem (Zawacki-Richter et al., 2019). Although research distinguishes between forms of “weak AI”, aimed at solving specific problems, and “strong AI”, endowed with general cognitive abilities (Berker, 2018), in the current educational context, reference is mainly made to weak or “soft AI” systems, capable of performing limited tasks but not fully replicating human intelligence.

Despite concerns raised by some scholars regarding the risks associated with the development of advanced forms of AI, including potential repercussions on teachers’ employment, current applications in the educational field mainly serve as tools to support and enhance learning processes, rather than as substitutes for teachers. In this sense, promoting AI literacy becomes a prerequisite for the critical and responsible adoption of such technologies, preventing innovation from merely resulting in functional dependency or new forms of exclusion.

The literature shows how the adoption of artificial intelligence in the educational sector has taken on a particularly significant role in the so-called *developed countries*, especially within the context of Industry 4.0, a historical phase characterised by a profound digital transformation that has accelerated the integration of intelligent technologies into educational systems.

Although the earliest experiments date back to the ‘60s (Chassignol et al., 2018), over time AI has progressively expanded its scope (Tegmark, 2015), evolving to the point of designing intelligent educational systems capable of influencing school and university organisation (Lynch, 2018; Wogu et al., 2019). It is true that Dickson (2017) highlighted a certain slowness in the systematic adoption of AI between the late 20th and early 21st centuries; however, more recent research documents a steady advancement, facilitated by the development of virtual applications, adaptive environments, and personalised learning support systems (Carlson et al., 2018).

Among the main areas of AI application in education, the automation of administrative and assessment tasks stands out. Intelligent systems are capable of grading multiple-choice tests and, increasingly often, evaluating written assignments through Natural Language Processing (NLP) algorithms, although issues related to the reliability and fairness of automated assessment still persist (Johnson, 2019). AI is also used in student admission processes and administrative management, enabling greater organisational efficiency (Johnson, 2019; Wogu et al., 2019). Concurrently, the concept of “smart content” has developed, referring to educational materi-

als enriched or generated via AI, capable of summarising textbooks, creating flashcards, proposing adaptive tests, and integrating multimedia materials (Faggella, 2019; Johnson, 2019). Systems like those described in the literature enable the reorganisation of content in more coherent, navigable manners, thereby promoting personalised learning experiences.

A particularly significant area is that of Intelligent Tutoring Systems (ITS), which originated from Benjamin Bloom’s studies on individualised tutoring and were developed in the ‘70s and ‘80s by integrating cognitive science and artificial intelligence algorithms to offer personalised learning pathways (Faggella, 2019; Singh et al., 2018). Although they modulate content, timing, and feedback based on the student’s characteristics, as early as the ‘90s it was evident that these systems could not fully replicate the relational dimension of human teaching (Beck et al., 1996), emphasising the importance of critical *AI literacy* for teachers and students.

This reflection intertwines with the transformations in higher education, characterised by an increase in enrolments and limited resources (Hollands & Tirthali, 2014; Popenici & Kerr, 2017), where tools such as MOOCs, teacherbots, and e-learning platforms have been proposed to expand access and optimise teaching (Gonçalves et al., 2016). While these innovations have raised concerns for the teaching profession (Bayne, 2015; Botrel et al., 2015), they have also generated new professional opportunities and a demand for specialised skills. The use of machine learning systems also raises issues of privacy, ethics, trust, and security, essential components of critical AI education. In any case, the utilisation of machine learning-based systems involves an increasing centrality of data, making reflection on privacy, ethics, trust, and security indispensable (Internet Society, 2017), dimensions that are integral to *AI literacy*.

Recent literature also proposes conceptual frameworks for classifying AI applications in education. Nguyen, for example, distinguishes between approaches of “Guidance”, “Teacher”, and “Student”, emphasising how AI can support decision-making processes, personalise learning, and enhance teachers’ capabilities. Recommendation systems for matching teachers and students have shown a significant reduction in matching attempts, suggesting an improvement in perceived compatibility (Chen et al., 2021). Similarly, the use of predictive learning analytics to identify at-risk students and activate targeted interventions has shown positive effects, especially for disadvantaged groups (Hlosta et al., 2021). The automatic generation of personalised feedback through counterfactual explanations is another example of how AI can support student self-regulation (Afzaal et al., 2021),

reinforcing the metacognitive dimension already identified as a cornerstone of AI literacy (Alpindo et al., 2024, Gonsalves, 2024).

AI education is a training programme aimed at developing *AI literacy*, understood as a set of knowledge, attitudes and critical thinking skills. This approach integrates disciplinary and cross-cutting dimensions, promoting technical-scientific and ethical-social skills (Chiu, 2021; Ng et al., 2021). The growing attention to this topic is evidenced by national and international strategies, as well as collaborations between universities and technology companies, aimed at defining curricula and guidelines to prepare students and teachers to understand, use and critically evaluate intelligent technologies.

International literature highlights that *AI literacy* and AIED are not separate areas but interconnected dimensions of a systemic transformation of education (Mills et al. 2024; Tadimalla & Maher, 2025). AI is no longer just a subject of *literacy*, nor a simple teaching tool, but constitutes a real environment for knowledge construction, within which learning methods, decision-making processes, assessment practices and categories of knowledge interpretation are redefined. Analysing its integration into school contexts therefore means not only evaluating its technical effectiveness, but also considering the pedagogical, cognitive and ethical conditions that make its informed use possible. AI thus becomes a space for reflection, in which students and teachers compare cognitive autonomy, algorithmic biases and responsibility in the use of technologies.

As Huang (2021) points out, education must look to the future. The growing importance of *AI literacy* requires a conceptual shift from the “AI in education” model, in which AI is primarily a tool to support teaching, to “education about AI”, i.e. education that focuses on AI as an object of critical understanding. This implies the design of specific content within the domain of AI, structured around three fundamental areas: knowledge in AI, impact of AI and processes in AI (Chiu, 2021, Chiu & Sanusi, 2024). It is not enough to know how to use an algorithmic system: it is necessary to understand how it works, evaluate its social and economic implications, and analyse its decision-making mechanisms.

In this context, AI is not limited to the acquisition of disciplinary content but also contributes to the development of critical and metacognitive skills (Gonsalves, 2024). It stimulates reflexivity and encourages comparative analysis of human and algorithmic decision-making, enabling the student to become a protagonist in evaluating and problematising the solutions offered by intelligent systems. *AI literacy* and AIED, therefore, converge into a single educational trajectory, aimed at training cit-

izens and professionals capable of understanding, using, and critically governing intelligent technologies.

What is lacking, however, in this way of considering the relationship between AI and education is a greater focus on the new interaction contexts opened up by GenAI. The recent emphasis on *GenAI literacy* recognises the need to go beyond *AI literacy* towards a comprehensive approach that integrates theoretical knowledge, practical skills, and deep critical reflection (Bozkurt, 2024), examining the adoption of GenAI in relation to task characteristics, pedagogical identity, institutional support, and ethical issues (Chaieb et al., 2026). To address this gap, some authors have proposed new theoretical frameworks, for example by integrating three forms of conceptual knowledge about large language models (LLMs): fundamentals, capabilities and limitations, and social impact, with students’ perceptions and theories on AI-based chatbots (Rismanchian et al., 2026). In this context, new conceptualisations of the TPACK framework have also been proposed, such as AI-TPACK (Ning et al., 2024; Max et al., 2024; Cao et al., 2026), which highlights the complex interrelations and synergistic effects of AI technology, pedagogical methods, and specific subject content in the field of education. In the following section, we will briefly analyse what this kind of approach can offer as new insights.

GENAI AND THE TPACK FRAMEWORK

The TPACK framework has had an increasing impact on teachers’ daily work over these twenty years. What characterises this approach, from the initial formulation of Pedagogical Content Knowledge (PCK) by Shulman (1986) to its extension in TPACK by Mishra and Koehler (2006), is the emphasis it places on knowledge to effectively guide educational practice. In the TPACK framework, the different dimensions of knowledge are considered pragmatic and active forms of knowing, thus echoing classical views of scholars such as Dewey (1934/1969), Schön (1983, 1987), and Perkins (1986). Knowledge is valid insofar as it is a tool, designed and adapted for a specific purpose, which education professionals can apply within their respective contexts (Mishra, Warr, & Islam, 2023). As Punya Mishra himself emphasises, the risk is now to see “the core ideas of the framework fossilized rather than something we engage with intellectually, conceptually, and practically” (Mishra, Warr, & Islam, 2023, p. 2).

The development of GenAI is an excellent test bed for understanding whether the framework still has strength and vitality, i.e. whether it is capable of providing useful

guidance for making the integration of these new digital technologies into classroom contexts more effective.

Briefly, we recall the fundamental ideas of the TPACK (Seta et al., 2010; Angeli et al., 2016; Di Blas et al., 2018). Its vision can be summarised by saying that an educator who wishes to effectively adopt technology must consider three different types of knowledge, closely interconnected: technological knowledge (TK), pedagogical knowledge (PK), and content knowledge (CK), the latter related to the domain of study, and additionally, knowledge of the context (XK) within which the teaching intervention takes place. The model encourages moving beyond isolated knowledge types, but rather to consider the effect that their interaction produces in terms of new knowledge. Therefore, although each of these types of knowledge has its internal structure, from analysing how they interact with each other, new relationships emerge. For the authors, “effective integration of technology is only achieved through understanding and negotiating the relationships between these three components of knowledge. A teacher capable of negotiating these relationships demonstrates a kind of skill and experience entirely different from that of a discipline expert, a technologist, or an educator, no matter how well prepared and up-to-date they are” (Mishra and Koehler, 2006). The iconic image that best represents the idea of the framework is shown in Figure 1.

What are the most important contributions that this framework can offer in the context of GenAI?

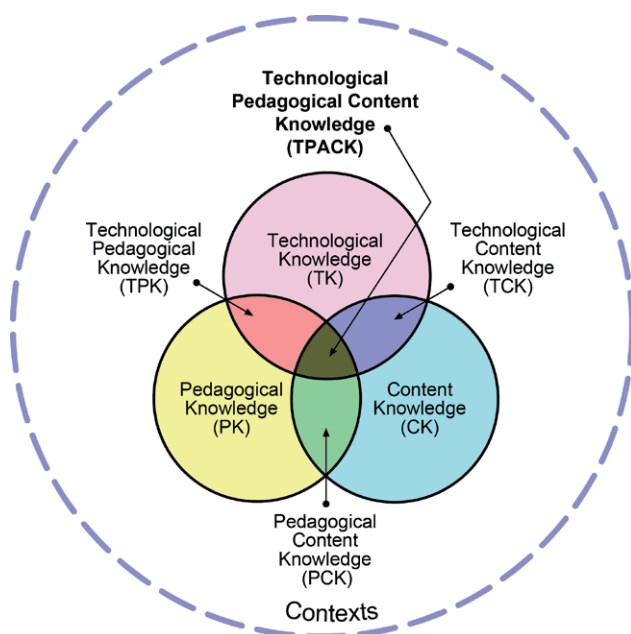


Figure 1. The TPACK framework, © 2012 by <http://tpack.org>.

Building on the unique characteristics of GenAI we described in the introductory section, technological knowledge (TK) must account for the dialogic nature of interaction with GenAI. It is not possible to predict in advance what using chatbots will lead to when carrying out a task, be it writing, summarising, asking and answering questions, or solving a test or problem. In this sense, assessing students’ work also poses several problems for teachers. Furthermore, as we have already observed, communication with GenAI has characteristics that make it unique, always different and emerging, similar to those of communication with human partners. This leads to attributing internal psychological states to GenAI, such as beliefs, intentions and desires (Mishra et al. 2023). It is important to encourage students to reflect on these characteristics of GenAI and to ensure that they can question these psychological dimensions transparently, which otherwise remain hidden and are therefore implicitly accepted.

Furthermore, it is necessary to address the integration between technology and pedagogy (TPK). This includes *GenAI literacy* and, consequently, the demand to combine theoretical knowledge with practical teaching skills. From this perspective, it is important to adopt a meta-level approach that prompts reflection while working with GenAI, considering how these systems operate, how responses are sensitive to prompting, and how they present themselves as “generative psychological agents that are now part of the classroom” (Mishra et al., 2023, p. 8). However, here we diverge from the analysis of Warr et al. (2023), or rather from Chris Dede, who encourages viewing GenAI as “alien intelligences” (Warr et al., 2023). Talking about alien intelligence can be misleading, because when we define it as alien, we admit that we have no idea what we are talking about and therefore why we should continue to call it intelligence. Moreover, this risks overlooking a series of similarities between the behaviour exhibited by GenAI and human behaviour, similarities that are the spontaneous, or “emergent”, product of training Large Language Models (LLMs) on datasets populated with human cultural artefacts. Essentially, it is forgotten that what creative and original output is produced by an LLM is the result of reworking human artefacts, not “alien” ones. Therefore, it is important to encourage students to reflect on the similarities and differences in their behaviour and that of GenAI, especially when they face decisions involving values and wisdom (Warr et al., 2023).

Regarding the interrelation between content and technology (TCK), it is important to encourage students to develop the metacognitive ability to critically reflect on responses from GenAI. Content can no longer be pre-

sented as tasks to be completed by following rules or performing repetitive, routine procedures. These tasks, due to their algorithmic nature, are where GenAI's superiority is most evident. Such tasks would become too easy to solve with a "partner" so well equipped for this type of work. The choice of content should prompt students to question the meaning of the responses they receive and the significance of the prompts that GenAI often provides after they offer their solutions (Tang et al., 2026).

Knowledge of the context (XK) should not be overlooked either. The introduction of GenAI creates several divisions within the school context: between teachers who enthusiastically embrace them and colleagues who strenuously oppose their intrusiveness. Students who have access to paid platforms or who are more skilled in their use, and students who can only use them within the limits of free use. There will be schools that will start using GenAI systems for administrative management, evaluation and monitoring of the organisation, communication and interaction with families, and schools that will be more resistant to embracing such changes. This does not account for choices made at the school district or central administration levels regarding the use of GenAI for various education-related tasks. It therefore becomes essential that the introduction of GenAI in educational contexts be designed inclusively, avoiding the creation of new digital, cognitive, or socio-cultural divides. Unequal access to technology, differing initial skills, and varying capacities for critical use can indeed amplify existing disparities among students. It is therefore necessary to accompany the implementation of GenAI with appropriate training pathways, differentiated teaching strategies, and a constant focus on potential biases embedded in the systems, so that these tools become levers of equity rather than factors of exclusion or discrimination.

In conclusion, the TPACK approach has enabled highlighting how the peculiarities of GenAI interact with teachers' knowledge and to incorporate these interactions to achieve a more effective teaching experience with GenAI.

In light of these considerations, we have designed a specific teaching programme for students in their final years of secondary school that combines *GenAI literacy* and *GenAI in Education*.

AN EDUCATIONAL PROPOSAL. BEHAVIORAL ECONOMICS AND GENAI

The idea for this educational proposal arose within a work-based learning programme (FSL, ex PCTO, in

Italy) organised by Libera Università Maria Ss. Assunta (LUMSA) in Palermo (Italy), in collaboration with several secondary education institutions in the city, dedicated to behavioral economics and GenAI. The aim of the course was to present behavioral economics as an integrated set of theoretical knowledge and practical tools, capable of supporting understanding and guidance in an increasingly complex world. In this context, individual decisions cannot ignore the preferences of others, the well-being of the communities to which we belong, and, more generally, the impact on the global environment with which we are interconnected. Behavioral economics also offers an interesting perspective for evaluating GenAI, i.e. for understanding how they work and what makes them useful, but also fallacious.

From a methodological perspective, although the teaching intervention was not structured as a controlled trial in the strict sense, it was conceived with a focus on rigor, replicability, and transferability. In an experiment of this kind and in line with the proposed theoretical framework, it is appropriate to collect four types of data: 1) data describing the confidence and practices of students and teachers in the use of GenAI tools; 2) data concerning the behaviour of students and AI systems during economic interaction; 3) data verifying the competence and skills acquired regarding both economic aspects and the use of GenAI; 4) data verifying the activation of metacognitive reflection processes in students.

From a technological knowledge (TK) perspective, during the course, students were invited to interact with GenAI in an economic game context. Three classic economic games, usually played with human participants, were reworked to allow interaction between a human participant and a chatbot. The first game was the "Ultimatum Game" (Güth et al., 1982), in which a player, known as the *proposer*, is given a sum of money on the condition that they offer part of it to another player, known as the *responder*, whom they do not know. The *proposer* can decide to offer any proportion of the sum received. If the *responder*, who is aware of the initial sum received by the *proposer* whom they do not know personally, accepts the offer, then the two players keep the winnings as divided by the proposer. If the *responder* refuses, both lose everything. The game's structure is shown in Figure 2.

By observing players' behaviour in this game, well known in the field of experimental economics (van Damme et al., 2014), we can obtain a behavioral measure of fairness as a prosocial motive underlying proposers' decisions. Furthermore, the extent to which unfair offers are rejected by respondents provides us with a simple measure of *negative reciprocity*, i.e., the behavio-

ral regularity whereby people are unkind (in this case, respondents who reject unfair offers) towards those who have acted unkindly towards them (in this case, proposers who make unfair offers) (Drouvelis, 2021).

From a standard theoretical perspective, assuming individuals are rational and selfish, the situation can be resolved simply. The *proposer*, as the first to act, has a negotiating advantage and will obtain virtually all the gains from the transaction, leaving the *respondent* with the minimum possible amount. Using backward induction, the intuition behind this result is as follows: starting with the *respondents'* decision, they will never reject a positive offer (assuming they are interested in maximising their income), since rejecting an offer yields zero income. Knowing this, the *proposer* will keep almost everything for himself, leaving the *respondents* with the minimum possible.

It was decided to use this game as an educational opportunity for students to interact with GenAI. Some students played the role of proposers and GenAI responded, while for other students GenAI played the role of *proposer* and they *responded*.

Beyond the results of the game, already proposed by the authors in an University context (Badiglio et al., 2024) and therefore already known, the aim is to show how GenAI behaviour was generally not comparable to human behaviour. GenAI are designed to provide positive responses to interlocutors and, in fact, even in the course of this game, they demonstrate that they do not pursue a strictly rational and utilitarian strategy. In the role of *proposer*, its offers are generally more generous, ranging between 40% and 60% of the initial endowment; in the role of *respondent*, it tends to accept any offer received, showing almost no negative reciproc-

ity. This behaviour is particularly interesting in showing students what to expect from GenAI. The particularly benevolent and accommodating behaviour they display during conversational exchanges is simply the result of deliberate programming and does not indicate any particular preference for the interlocutor.

Moving on to the level of interaction between pedagogical and technological knowledge (TPK), students were asked to play with the prompt to make the GenAI selfish. The students thus had the opportunity to try different prompting strategies, beginning to reflect on how to guide the GenAI's responses by carefully manipulating the prompt.

For example, some students experimented with how to influence the responses of the GenAI through prompt formulation. In particular, they included references to historical or literary figures known for selfish or greedy behaviors, observing that the machine tended to replicate such attitudes in its outputs. This experiment highlighted not only the AI's sensitivity to contextual cues in the prompt but also how its responses can reflect stereotypes or characteristics attributed to the reference models, providing students with a concrete opportunity to reflect on the dynamics of influence, bias, and responsibility in interactions with artificial intelligence systems.

Providing, alongside the request to perform a task, one or more examples of a solution is a well-known prompting strategy that students discovered independently during the educational interaction.

The second game proposed is the Trust Game. The trust game is a sequential game between two players: the *sender* and the *recipient*. The *sender* (i.e., the first player) must decide how much of his/her experimental endowment (10 dollars, in the model by Berg et al.

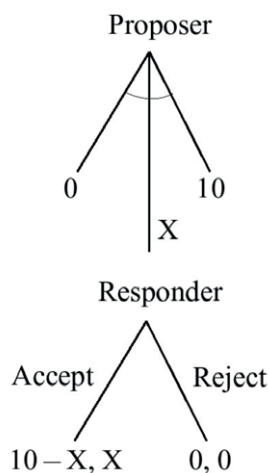


Figure 2. Ultimatum game structure.

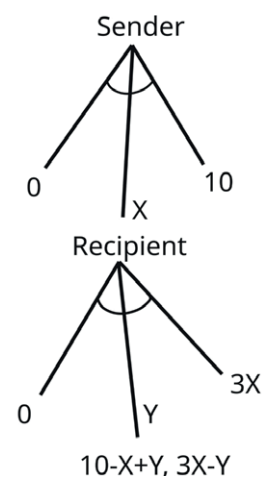


Figure 3. Trust game structure.

(1995)) to transfer to an anonymous partner, the *recipient* (i.e., the second player). The experimenter triples the amount transferred from the *sender* to the *recipient*. Subsequently, the *recipient* must decide how much to return to the *sender* from the tripled account. Any amount not returned by the *recipient* remains their property. By observing the outcome of this simple Trust Game, we obtain a measure of trust (i.e., how much money the *sender* offers to the *recipient*) and reliability (an indicator of *positive reciprocity*, i.e., how much money the *recipient* returns to the *sender*). In this context, trust is a risky action, as it assumes that, to be repaid, the recipient must return it to the sender. The structure of the trust game is illustrated in Figure 3.

Using backward induction and assuming that both the *sender* and the *recipient* are only interested in maximising their own monetary gain, the sender will not send money to the recipient and, in the event that they do, the recipient will not transfer anything back. This means that both players will keep their initial endowment and there will be neither trust nor positive reciprocity if both are selfish.

In this case as well, the aim was to familiarise students with the GenAI's behaviors, so the game was repeated with the GenAI both as *sender* and *recipient*. The behaviour exhibited by the GenAI appears quite different from that of the rational player and the students. Generally, as a *sender*, the amounts sent are more generous than those sent by human players, and as a *recipient*, it tends to return a sum that balances the distribution of gains between the two players.

Finally, the Public Good Game was proposed. The structure of this game is very simple: the subjects randomly form groups of n members, each with a fixed endowment of X tokens. Their task is to decide how to divide the fixed endowment between their *private account* and a *public account*. Allocating tokens to the *private account* benefits only the individual member, while allocating to the *public account* benefits the other members of the group. In fact, the overall allocation of the *public account* is doubled and redistributed fairly among all members of the group, regardless of how much each has contributed.

In order to capture the tension between personal gains and collective objectives, the game parameters are such that a rational and selfish group member will always try to take advantage of it (that is, contribute zero tokens to the *public account*). On the other hand, if all members of the group contribute their entire endowment to the *public account*, the well-being of the group is maximised. The behaviour of players in this game is linked to their willingness to contribute to the public

good, and therefore to cooperation, while at the opposite extreme, we have the behaviour of the so-called *free-rider*, that is, someone who, without contributing to the public account, will still benefit from the sharing of the common resource. The reintroduction of this game with the GenAI aimed to show the student that the GenAI never exhibits *free-rider* behaviour, but tends towards cooperation.

In all three cases studied, behaviors of the GenAI are observed that deviate from *economic rationality* and are good examples of how the paradigm of classical economics is partial and insufficient. GenAI show *social preferences* more in line with the predictions of behavioral economics, where values such as *altruism*, *fairness*, *positive reciprocity*, and *cooperation* come into play in determining the choices of limited rationality economic agents, which include us humans and also GenAI.

Therefore, if we consider the interaction between technological knowledge and educational content (TCK), the teaching experience has allowed students to engage with the themes of behavioral economics through the use of technology, involving their critical thinking and metacognitive knowledge. The knowledge of the context (XK) of the experience has necessarily played a role in its success. The students were involved, within a university framework, in teaching that started from a scientific research problem: understanding the behaviour of GenAI as economic agents engaged in strategic games. In this context, the use of technology appeared as a fundamental part of the research and not as a cognitive shortcut, useful for avoiding boring and repetitive tasks.

CONCLUSIONS

This work, starting from an example of teaching based on a rigorous theoretical framework, aims to suggest the necessity of opening up to an actual dialogue between technological, pedagogical, and scientific knowledge, in order to enable teachers to improve their professionalism and to offer students increasingly rich and suitable educational experiences for the world of work. The chosen theoretical framework was TPACK, the technology we focused on was the one that has been most changing the educational context in recent years, namely GenAI, and the scientific knowledge was that of behavioral economics.

In conclusion, we can say that the adoption of the TPACK framework has proven to be a particularly useful theoretical perspective for analysing the interactions between GenAI and the various dimensions of a teacher's knowledge, from disciplinary expertise to

pedagogical choices, up to contextual understanding. The analysis shows that one cannot simply consider the impact of this new technology within pre-existing teaching practices: the specific affordances of GenAI, and in particular the linguistic interface, the ability to generate responses that are always different and in real time, and the consequent tendency towards anthropomorphism, must lead to a redefinition of both the methods of didactic mediation and the strategies through which students engage with the content.

The proposed approach suggests at least three significant implications for instructional design. Firstly, in terms of the interrelations between disciplinary content and technology (TCK), there is a need to move away from purely algorithmic or repetitive tasks, where the operational superiority of GenAI makes the activity of little significance for the student, in favour of activities that stimulate interpretation, argumentation, critical evaluation, and metacognitive reflection on the responses generated by AI tools. Secondly, in terms of pedagogical choices (TPK), teachers are called to design learning environments where GenAI becomes “epistemic objects” with which to engage in dialogue and that can be interrogated, moving beyond the view of these technologies as mere automation tools.

To do this, it is useful to explicitly outline the strategies used to formulate requests, encourage comparison between multiple solutions, emphasise the identification of errors and biases, and open students to ongoing negotiation about the meaning of the responses and suggestions received. Finally, in terms of contextual knowledge (XK), the introduction of GenAI makes visible new lines of fracture, for example between schools and educational systems, between teachers more or less open to innovation, and between students with different levels of access and skills in using technology, raising issues of equity, inclusion, and academic integrity.

The educational proposal on behavioral economics and GenAI, developed within the framework of a work-based learning programme (FSL, ex PCTO) aimed at students in the final years of secondary school, represents an exemplary case of intentional integration between “educating with AI” (*AI in Education*) and “educating about AI” (*AI literacy*). Working with simple economic games and decision-making dilemmas has enabled students to consider GenAI as an economic agent with which to engage, highlighting similarities and differences between human choices and machine decisions, thereby fostering a more critical understanding of bounded rationality, which characterises both humans and artificial systems, and the bias mechanisms that influence decisions. At the same time, designing activi-

ties that require discussion, justification, and problematising of the solutions offered by GenAI has made possible a reflective and conscious use of these tools, in line with the broader aims of contemporary GenAI literacy.

The results of this experience suggest at least two directions for development. On one hand, it is important to deepen, also through empirical research on larger samples and in different contexts, the impact of TPACK-informed pathways that simultaneously integrate GenAI literacy and GenAI in Education, verifying their effects on students’ disciplinary, metacognitive, and socio-emotional skills. On the other hand, further reflection is needed on teachers’ professional development: in order for GenAI to become opportunities for cognitive and ethical growth, rather than mere operational shortcuts or new sources of inequality, it is essential that teachers are supported in rethinking not only the tools but also their own models of teaching, assessment, and educational relationships.

In this sense, the intertwining of TPACK, behavioral economics, and GenAI, outlined in this contribution, can represent a first step towards more conscious pedagogical design, capable of transforming the presence of GenAI in the classroom into an opportunity for pedagogical innovation and the strengthening of students’ critical skills.

Starting from this experience, other similar activities can be devised, for example on cognitive biases, which open an interesting field of investigation to better understand certain behaviors of GenAI and thus can serve as a basis for the development of important experiments by students. In the field of STEAM disciplines, the framework proposed here can offer guidance for designing innovative educational experiences that compare the problem-solving methods of GenAI with the procedures adopted by expert solvers. The work thus aims to be a theoretical and methodological contribution to establishing teaching and training pathways for teachers interested in integrating GenAI into their disciplinary *curricula*.

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