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Film and Audiovisual Education in the Artificial Intelligence Era: Approaches and Challenges

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Abstract

The integration of AI into audiovisual culture heralds a profound shift in creation, interpretation, and cultural legacy, extending human capacities in interacting with the world. This prompts a necessary reevaluation of human cultural and artistic legacies, demanding a mindful approach in Media and Audiovisual Education to address AI mechanisms, biases, and dataset selection processes. Given AI's creative potential, not only within the audiovisual and ICT industries but also for Web 2.0 users at large, several pressing questions emerge for media and audiovisual educators and scholars. Challenges regarding integrating AI technologies, the need to reevaluate traditional educational approaches, and considerations for new methodological implementations warrant attention. This paper proposes a new model for integrating AI into media and audiovisual education: the AI Audiovisual Literacy (AIAL) framework. Through this framework, we seek to bridge our current understanding of AI with traditional educational approaches, offering a structured method for addressing the challenges and opportunities presented by AI in the realm of audiovisual media culture.

Keywords: Artificial Intelligence; Film Industry; Media Education; Audiovisual Education; Film Studies.

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1 Introduction: AI and Media Audiovisual Education

In recent years, the discourse on the emerging challenges posed by Artificial Intelligence in Education (AIED) has been significantly enriched by contributions from scholars (Panciroli, Rivoltella 2023; Soriani, Bonafede 2024; Garavaglia, Petti 2024; Messina et al. 2024) and international organizations such as the European Commission and the Council of Europe (Holmes, Persson, Chounta, Wasson, Dimitrova 2022). Despite these advancements, practitioners still face considerable uncertainty. How should media educators navigate these developments? While, scholars are working to extend established critical frameworks and teaching methods to include AI within the school curriculum (Baldino, D'Asaro, Pedrazzoli 2024; Panciroli et al. 2023), teachers and educators are testing ways to incorporate it within their everyday lesson plans.

However, when addressing audiovisual education with a focus on film and television, the relationship between AI and cinema can be analyzed through two distinct frameworks (Panciroli, Rivoltella 2023; Farinacci 2024). The first, a textual perspective, examines the depiction of AI in cinema, exploring how films have represented AI over time and its impact on individuals and society (e.g., Fritz Lang's *Metropolis* (1927), Robert Wise's *The Day the Earth Stood Still* (1951), Michael Crichton's *Westworld* (1973)). The second framework focuses on the potential applications of AI in film production.

This paper will attempt to delineate both approaches, setting the stage for a more comprehensive analysis of how AI's integration into film and screen education can be effectively managed and leveraged. Specifically, it will explore how contemporary didactic approaches should address a broader range of questions related to AI's political economy, including issues of power imbalance, cultural bias, job regulation, as well as enduring concerns about representation, creativity, aesthetics, fairness, and reliability (Buckingham, 2023). The paper will begin with an exploration of AI's integration within the Hollywood film industry and will then discuss how to incorporate these advancements into existing frameworks for audiovisual education.

2 Evolving Dynamics: AI's and the Film Industry

During the spring of 2023 Hollywood was shaken by one of the longest strikes that the film industry has faced in the last sixty years. On May 2nd, The Writers Guild of America (WGA), the Screen Actors Guild (SAG-AFTRA) have united in opposition against the Alliance of Motion Picture and Television Producers (AMPTP),[1] joined to voice their concerns about working conditions, equitable compensation, and the growing encroachment of artificial intelligence (AI) within their respective trades[2] (Pfefferkorn 2023). Screenwriters and actors have expressed apprehension regarding the potential for Generative Artificial Intelligence (GAI) to supplant human professionals (Child 2023). Noteworthy examples of AI applications, such as ChatGPT for scriptwriting and editing, as well as "performance cloning", have become emblematic illustrations. In both instances, the unions' worry has revolved around copyright issues. After 150 days of strike, a new Minimum Basic Agreement (MBA) was stipulated between the trade associations which regulates the use of artificial intelligence on MBA-covered projects.[3]

Despite recent attention, AI's involvement in filmmaking traces back to earlier endeavors such as Cyrus Idle, a system designed back in 1997 for film critique (Ascione 2001) or the software MASSIVE, developed for the *The Lord of the Rings* trilogy, which enabled lifelike simulations of large-scale scenes (Thompson 2006; Panciroli,

1. The AMPTP is a trade association that today represents over 350 American Television and film production companies including studios and streaming platforms like Netflix and Disney+.

2. The solidarity movement #ScreenwritersEverywhere picketed and organized other actions in more than 20 countries, including: "Netflix offices in Buenos Aires, Argentina; the European Parliament in Brussels; the offices of Apple and Amazon in Toronto, Canada; FoxTelecolombia in Colombia; the Eiffel Tower in Paris, France; the Tel Aviv Central Library in Israel; Estudios Churubusco in Mexico; Netflix offices in Seoul, South Korea; Filmoteca de Catalunya and Valenciana in Spain; the Riksdag in Sweden; and Leicester Square in London, U.K." (Keskassy et al. 2023).

3. The agreement stipulates that (1) AI-produced written content does not fall under the categories of literary material, source material, or assigned material; (2) AI is not recognized as a writer; (3) writers have the option to utilize AI tools in their writing tasks with the consent of the company, and as long as they adhere to relevant company policies. However, companies cannot mandate writers to use AI software (such as ChatGPT) for their writing duties; (4) the company is obligated to inform the writer if any materials provided to them have been generated by AI or include AI-generated content.

Rivoltella 2023). Today, AI plays a multifaceted role in film creation, from generating storylines and preliminary scripts, and assisting in other pre-production tasks like set and costume design, as well as casting. It has been employed in streamlining post-production processes such editing, special effects, color correction, optimal shots suggestions, film restoration, etc., (Arush 2022; Chow 2020; Datta, Goswami 2020; Li 2022; Mutlu 2020). Furthermore, AI driven software such as *Cynelitic*[4] contribute to audience engagement and commercial strategies, offering insights into viewer preferences and optimizing marketing efforts (Caranicas 2018; Kay 2019; Vincent 2018).

In addition to providing recommendations and facilitating automatic editing and box office predictions, AI is now extensively utilized to generate novel synthetic creations, spanning artworks, music, designs, and texts. It can also produce complementary material such as movie posters, alternative trailers, or extra scenes, aligning seamlessly with the thematic and stylistic components of the film (Goode 2018; Heathman 2016; Mumfold 2023;). Recently, for instance, generative AI has been adopted also by filmmakers to create videos and trailers: "A new TikTok video from AI Insight delivers a trailer for *The Lord of the Rings* as if directed by Wes Anderson, and it is a delight. Cast by ChatGPT, the AI film stars, Timothee Chalamet and Tom Holland as Frodo and Samwise, the trailer puts a whimsical, pastel touch on the classic LOTR franchise, with each character centered up in symmetrical, Anderson-esque frames" (Thiessen 2023). Created by Curious Refuge[5] using text-to-image AI software Midjourney, the 1:48 long trailer[6] *The Whimsical Fellowship: A Lord of the Rings* Story" features an AI-generated art that plays underneath a mild, British voiceover as it sets up the group's quest to defeat a rather elegant Sauron. The "AI prompt seems simple enough; Wes Anderson has a particular aesthetic that some feel can be distilled into a few buzzwords, like 'whimsical' and 'midcentury modern' " (O'Connell 2023). The video, in fact, draws heavily from the Anderson playbook, featuring elements such as symmetry, voice-over narration, the Futura typeface, and the presence of Owen Wilson. It showcases meticulously crafted shots of food and objects, intricate architecture, and an overarching sense of awe and fascination (Ibid.).

More controversial discourse on AI advancements includes contentious discussions regarding the application of AI technology to recreate the voices of notable figures posthumously (Smith 2023). This has been exemplified by recent instances where AI was employed to re-create the voices of acclaimed personalities such as late celebrity chef Anthony Bourdain (White 2021) for the documentary *Roadrunner: A Film About Anthony Bourdain* (Morgan Neville, 2021) and artist Andy Warhol for *The Andy Warhol Diaries* (Andrew Rossi, 2022). Additionally, notable actor James Earl Jones has authorized the utilization of early Darth Vader recordings by AI for the emulation of his voice in upcoming *Star Wars* series (Travis 2022).

Be it audio or visual media, machine learning is used both to extract patterns from data and to generate patterns after training with said data. The term refers to expert systems, which are based on algorithms and are characterized by their ability to learn from the data provided to them. The objective of these systems is to profile their target to predict their decision-making behaviors more accurately (Panciroli, Rivoltella 2023). In other words, neural networks have been progressively employed to assign semantic labels (meanings) and automatically extract aesthetically relevant features (e.g., Wes Anderson's aesthetic signature features) through the analysis of extensive databases of favored images, which can be then used to create (Manovich, Arielli 2021).

Given the creative and generative potential that AI software currently offers, not only to the audiovisual and ICT industries but also to the broader community of Web 2.0 users, we pose the following questions: What challenges do media and audiovisual educators and scholars face with the integration of AI technologies? Do traditional approaches to media and audiovisual education require reevaluation? If new methodological approaches to research and teaching are deemed necessary, what specific implementations should be considered? While some of the answers to these questions will necessitate more extensive investigations, this paper endeavors to propose a model for integrating our current understanding of AI with the traditional approaches adopted in media and audiovisual education.

4. Warner Bros movie division has entered a partnership with Cynelitic in 2020 leveraging "the system's comprehensive data and predictive analytics to guide decision-making at the greenlight stage [...] The integrated online platform can assess the value of a star in any territory and how much a film is expected to make in theaters and on other ancillary streams" (Siegel 2020).

5. https://curiousrefuge.com/ (last access 08-04-24).

6. https://www.youtube.com/watch?v=KrjL_TSOFrI (last access 08-04-24).

3 AI and Audiovisual Education: Provisional Considerations

Analyzing the current discourse surrounding AI and the filmmaking industry reveals a predominant focus on aspects such as enhanced product quality, streamlined production processes through automation, cost reduction strategies, and the pursuit of a formula for box office success. While economic advantages of AI remain central in these discussions, it is crucial to recognize that the filmmaking industry does not merely produce commodities but also cultural products that shape our perceptions and understanding of the world (Cucco 2020; Weakland 2003). The creation of audiovisual representations holds paramount significance as it directly influences societal constructs and contributes to shaping identities and policies (Brako, Mensah 2023).

Far from intending to reconstruct the entire history of the relationship between audiovisual media and education (for which we refer to Marangi, 2004, and Carenzio & Farinacci, 2023), examining some of the theories from recent years reveals a common struggle to develop an approach that combines traditional textual interpretation with a learning-by-doing method. Even prior to the onset of the digital turn (Carpo 2017), which upended the norms that had previously characterized the media ecosystem, one of Italy's most prominent Media Education scholar, Pier Cesare Rivoltella, identified three levels of text analysis applicable within educational settings: asystematic, systematic, and processual as approaches for engaging in the analysis of an audiovisual text (Rivoltella 1998). The asystematic level encompassed educational interventions exclusively focused on spontaneous discussions of films or television programs or image reading activities unrelated to media studies. This level relied on viewing audiovisual products to facilitate brainstorming sessions and debates in informal educational settings. The systematic level transcended naive pre-textual readings by employing a methodological framework to explicate the geography of the text, emphasizing textual coherence and systems of signification (Eco 1990). This type of analysis is recommended for institutional educational contexts and expert training. The processual level involved a group perspective where reading is contextualized and organized around common interests, requiring a facilitator with specific skills in the audiovisual field and socio-cultural context. This level emphasized social interpretation resulting from cooperative meaning-making among individuals. Rivoltella's analysis articulated a spectrum of approaches conducive to exploring the textual dimension of audiovisual products, demonstrating a persistent influence of semiological inquiry, and briefly acknowledging, at the conclusion, the escalating significance of consumption-related aspects of media products.

These facets, now inseparable from textual approaches, were recognized and revisited a decade later in the volume edited by Malavasi, Polenghi, and Rivoltella: *Cinema, Training Practices, Education* (2009). Here, the authors advocate for the formulation of a theory of engagement with audiovisual products that encompasses historical-educational, technological-didactic, and theoretical-pedagogical orientations. In the case of the theoretical-pedagogical dimension, emphasis is placed on the need to not overlook the contribution of cinematic representations as catalysts for engaging with life experiences (Ibid.). This perspective acknowledges cinema's interconnectedness with the audience's engagement with filmic products, linking them, at an educational level, to four fundamental values, fostering individuals capable of organizing knowledge; imparting understanding of the human condition; learning to navigate life's challenges; constructing a culture and fostering civic awareness (Ibid.). This perspective acknowledged that an effective educational approach must probe beyond the formal and stylistic aspects of audiovisual products, delving into a standpoint where any audiovisual product must be understood within the social, political, economic, and productive imperatives that shape its creation. Additionally, educational institutions can serve as hubs for testing and researching the reception of these images among students, gauging how, and to what extent, younger generations identify with the representations of the world disseminated through various media products.

Far from being an exhaustive reconstruction of all the theories surrounding the teaching of audiovisuals in educational contexts, it could be suggested that in the last twenty years audiovisual literacy has been grounded in a three-tiered Media Education model: (1) educating through media, (2) educating about media, and (3) educating within/for the media (Marangi 2004). This approach envisions a bridging of the gap between using audiovisuals as icebreakers to open the discussion on specific topics (or in the worst-case scenario to fill downtime during school hours) and doing a cinephile analysis of the audiovisual language and film history. In other words, it is necessary, following the thinking of Rivoltella (2020), to implement an education *with* media through an education *about* media, paying attention to developing critical thinking about the content con-

sumed on media and created for media, working on languages and media forms to reason collectively about the correct uses of media. To these two dimensions we must also add an education *for* media by adopting a didactics that promotes a transversal presence of media within the school curriculum to create generative connections between different disciplines, between frontal teaching and practice, between the school environment and territorial and global dynamics; and finally, to lead students to develop media writing skills, educate expressiveness, create conditions for a linguistically correct use of media which coincides with the practice of educating for media (Ibid.).

In recent works (Carenzio, Farinacci 2023; Farinacci 2024), we have tried to complexify this model through the incorporation of three additional levels which focus on the: *aesthetic*, *ethics*, and *critique* dimensions connected to audiovisual media. These three areas operate within a circular system that combine textual analysis related to media semiotics, understanding of cultural forms within sociocultural contexts, awareness of the *ethic* dimension of media production and consumption, and comprehension of the power-politics governing the media ecosystem (Rivoltella 2020; Valgolio 2021; Carenzio, Farinacci 2023). The nuanced understanding of audiovisual media that this approach has provided in recent years must now confront the challenges posed by the introduction of GAI. The *aesthetic* dimension pertains to creativity: it involves fostering an appreciation for beauty, not merely as a source of pleasure or validation but as a matter of ethical responsibility. This dimension operates within both the realms of critical examination and creative expression (Rivoltella 2020). As shown through the cases of *The Whimsical Fellowship* trailer, the intersection of AI and aesthetics holds significant importance as aesthetics has traditionally been viewed as a distinctly human realm. As Manovich and Arielli explain (2021), the intricate and complex nature of aesthetics has often been seen as resistant to simplification through algorithms. For many, art, aesthetics, and creativity epitomize human excellence and serve as a last line of defense against the relentless progress of AI. In essence, this intricate domain becomes the quintessential arena for testing both the potential and boundaries of AI.

Advancements in technology, particularly in computation, data analysis, machine learning, and AI, have increasingly influenced aesthetics. Let us think about platforms such as Spotify, Apple, Pandora or Instagram's Explore tab that employ increasingly sophisticated methodologies to anticipate individuals' preferences, utilize direct observation of individuals' aesthetic selections to discern principles of aesthetic quality (Ibid.) to then curate personalized content. AI systems now can predict and generate aesthetic artifacts, such as artworks and music compositions, often emulating the styles of renowned artists like Rembrandt and Bach (Manovich, Arielli 2021). In 2016, in fact, a deep-learning algorithm underwent training to assimilate Rembrandt's stylistic attributes by scrutinizing his known corpus of 346 paintings. Following this, the algorithm was tasked with producing a wholly original portrait, the resultant image bearing an uncanny resemblance to an authentic Rembrandt work (Manovich, Arielli 2021).

Current debates among scholars and artists alike, however, center around whether these advancements simply replicate existing styles without demonstrating genuine creativity. In such cases, computers are given pre-existing examples and generate variations based on their patterns, although efforts are made to introduce some degree of diversity. While these outputs may occasionally closely resemble authentic artworks, they can also display subtle discrepancies noticeable to a discerning eye, lacking the intricate final touches that would make them convincingly human. Such algorithms do not create entirely new styles of music or painting; rather, they exemplify what could be termed "computational mannerism" (Ibid.: 7).

The dimension of *critique* stimulates the cultivation of an analytical viewpoint that extends beyond mere consideration of the formal attributes of media and its content. It encourages scrutiny of the potential impacts that representations and technological affordances may exert upon the broader mediascape. This dimension aims to deepen the students' comprehension of the diverse cultural expressions present within digital environments. In essence, it recognizes the opacity inherent in media, the deliberate construction of media messages, and advocates for the advancement of critical thinking as the paramount objective of media educational endeavors (Rivoltella 2020).

Regarding AI, the opacity may take at least two forms: on the one hand, there is a lack of transparency with the type of data that is fed into AI; let us think for example at how the data used to train ChatGPT can be influenced by the interests of OpenAI which was cofounded by Elon Musk, who currently also owns SpaceX, Neuralink and xAI. On the other hand, with the use of machine learning, there is a limitation or absence of direct oversight

or management over the outcomes or results it produces. In other words, while machine learning algorithms can generate predictions, classifications, or other outputs based on the data they are trained on, there may be uncertainties or unpredictability in the specific results they generate, and sometimes it might not be entirely clear why certain results are produced. A telling example can be found in the use of AI in the generation of screenplays. AI tools, such as Natural Language Processing (NLP) technologies can craft authentic scripts with minimal cues. Nonetheless, this immediacy confronts underlying biases within the data, particularly concerning gender and ethnicity, which have emerged as pivotal considerations in discussions surrounding the equity and ethical implications of AI (O'Neill 2016). At the core of numerous AI applications, particularly in machine learning, lies the process of training models on vast datasets. Despite their expansiveness, these datasets inherently carry imperfections, mirroring the complexities of our society and encapsulating centuries of historical biases and inequalities. Consequently, when AI models are trained on such datasets, they inevitably internalize and, at times, exacerbate these biases (Noble 2018).

Finally, the *ethics* dimension pertains to matters of responsibility and sociocultural impact of media production and consumption. Rooted in the cultural studies perspective, the primary objective of an ethical interpretative lens recognizes media as products of our social world and contribute to the construction of its systems of meaning and values. Media become battlefields where various social groups negotiate their access to the public sphere and the way that they are represented through the media. Analyzing media through the lens of Cultural Studies means acknowledging the different power relations that exists among the world's population and, more importantly, among media production and distribution companies. It involves integrating a study of the formal characteristics of audiovisual texts (semiotic studies and textual close reading) with a focus on their production contexts including their embedded values and underlying ideological frameworks (production studies). This approach emphasizes a newfound centrality of the spectator as an active agent, whose consumption habits and spontaneous interpretations of texts are analyzed. Through this analysis, an Audiovisual Media Education aims to reconstruct the value systems adopted by prosumers to promote an active and informed digital citizenship.

When dealing with the ethical dimension of AI, special attention was given by the Beijing Consensus, stemming from the 2019 International Conference on AI and Education to access issues so that AI can provide equal opportunities for all, with particular care paid to fairness and inclusivity especially towards gender identity. Furthermore, another commendable interpretation is offered by the *White Paper* published by the Stanford Institute for Human-Centered Artificial Intelligence in January 2023.[7] Edited by Michele Elam and Rob Reich, the White Paper attempts to define the "Charter of Rights" of AI. The interesting part for our discussion is dedicated to enhancing citizen education in relation to AI and its impacts (Panciroli, Rivoltella 2023). It is not enough to know how to read media; it is necessary to experience them responsibly and in a creative and thoughtful manner. Being "digitally wise" (Prensky 2010) means behaving with consideration of these three dimensions comprehensively, reflecting critically on content and languages, ethical implications, and the possibility of expressing oneself in manners that are respectful of an aesthetic that does not repeat stereotyped expressive forms but elicits creative and innovative thinking.

In sum, when considering the plethora of AI software available to the public, it becomes evident that a redefinition of traditional approaches to Media and Audiovisual Education is necessary. AI impacts the textual or *aesthetic* dimension of media by reshaping our understanding of the world through Generative AI's contributions (text-to-image or image-to-image). Moreover, AI remixes existing content rather than creating from a human perspective, potentially perpetuating stereotypes, and stifling creativity in favor of formulaic approaches predicted to yield box office success. Thus, to navigate, research, and teach media in the contemporary landscape, a model comparing and integrating traditional approaches to Audiovisual Literacy with an AI mindful that we attempt to propose. The AI Audiovisual Literacy (AIAL) framework seeks to capture the complexity of media and audiovisual education in the face of AI's systemic innovation (Farinacci, 2024). Following David Buckingham's intuitions (2019), this framework encourages *critical* thinking in pushing researchers, instructors, and students to recognizes the power dynamics that tech companies (GAFAM's) have on content creation. Furthermore, it emphasizes the impact of "digital capitalism" on contemporary culture raising the *ethical* issues connected to AI's sociocultural impact on media consumption and production. We

7. https://hai.stanford.edu/sites/default/files/2022-01/Stanford%20HAI%20Artificial%20Intelligence%20Bill%20of%20Rights_0.pdf (Last accessed 10-04-24).

believe that the innovative aspect of the AIAL model lays in combining the six categories that have thus far been implemented within Media and Audiovisual studies with a series of new parameters that central to the analysis of AI generated content.

Table 1. The AI Audiovisual Literacy (AIAL) framework[8]

Theory	Approach 1.0	Approach 2.0	AIAL Framework
Semiotic Textual analysis	Educating "about" media	Aesthetic dimension	Are AI-generated films/audiovisuals considered creative? Do they primarily consist of remixes of existing material, or do they demonstrate innovation?
		Critique dimension	Do the filmic/audiovisual representations generated by AI adequately reflect diversity and show sensitivity to cultural distinctions?
		Ethics dimension	Are the representations produced by AI mindful of cultural difference or biased?
Cultural Studies	Educating "with" media	Aesthetic dimension	Is AI changing the languages and techniques used in film representations? Are AI productions homologizing creativity?
		Critique dimension	Who programs the AI algorithms and for which company/production studios? What are their motivations?
		Ethics dimension	To what degree can AI be trained to prevent or identify bias and stereotypes in creative processes (scriptwriting, image generating, etc.)?
Production Studies	Educating "for" media	Aesthetic dimension	Do AI-generated audiovisuals display homogeneity or stereotypes? Can identifiable trends be observed between representations and the diverse composition of the professionals involved in the production teams?
		Critique dimension	What is the relationship between the stories being told and their success at the box office? Are AI-driven prediction software changing the types of films that are being produced?
		Ethics dimension	Can AI software encourage a more gender and ethnic balance workplace in the film industry?

3.1 Educating "about" audiovisuals

When combining an education *about* audiovisuals with the *aesthetic* perspective, the approach to audiovisual products will focus on the acquisition of basic knowledge of the audiovisual language, and the way they follow or innovate consolidated canons and authorial styles. The aim is to train students to identify how the concept of "beauty" and "quality" have changed through time. The AIAL approach will emphasize an understanding of the ways in which AI text-to-image software like *Midjourney,* understands, reproduces, or innovates canons and styles with respect to the established use of the audiovisual language. When discussing the *aesthetic* dimension, special consideration must be given to the utilization of machine learning. Because this technology is employed to both discern patterns from data and produce patterns subsequent to training with said data, "developments in these technologies not only allow us to describe artifacts and predict people's behavior, but they can also be implemented to generate artifacts and simulate people's behavior" (Manovich, Arielli 2021:12) requiring reflections on the possible effects that these might have on determining spectators' aesthetic preferences.

A *critical* approach to an education *about* audiovisuals must raise awareness of how the formal and stylistic aspects of audiovisual texts are connected to specific sociocultural contexts. Audiovisual productions from

8. An earlier version of this table has been published in Farinacci 2024.

different nations foster a variety of visual styles that should be understood within each context. From this standpoint, AIAL must uncover how the dataset used to train AI software is currently mostly western-centric and controlled by big tech companies (whose owners are mostly middle-aged Caucasian males) thus requiring a careful analysis against the grain of the dominant American and European visual and sociocultural points of view and power structures.

Lastly, when combining an education *about* audiovisuals with the *ethics* dimension, the didactic action must shift its attention towards the ways in which media represents people, groups, minorities, professions, dialogues, self-representations of characters. If we think about the criticism raised by *Stable Diffusion* concerning gender and racial bias in AI generated images (Nicoletti, Bass 2023), the approach that should be implemented in educational environments must focus on the ways in which AI generates new content, identify possible perpetrations of inequality and social exclusion through its representations. The question that should guide this reflection is: Are the representations produced by AI fair and mindful of cultural difference?

3.2 Educating "with" audiovisuals

When combining an education *with* audiovisuals approach with the *aesthetic*, *critique*, and *ethics* dimensions, the model prioritizes a cultural studies-oriented point of view. From an *aesthetic* perspective, didactic actions should focus on the recognition that the formal properties of audiovisual products are the results of various schools of thought and professional training traditions developed through history within different cultural contexts. This standpoint requires, for example, to become aware of how the history of film was greatly influenced by processes of hybridizations and competition between different industries and national policies (Cucco, Richeri 2022; Cucco, Manzoli 2017). When inserting AI into the picture, the attention should be paid to the capabilities of AI to keep track of the evolution of styles and trends of audiovisual representations around the world, and in turn, to trace the level of innovation and creativity that its representations bring to current productions (computational mannerism). As Manovich and Arielli demonstrate, AI may mimic and reproduce the styles of artists that present a homogeneous style (such as in the above-mentioned example of Rembrandt), however it still shows limitations: "It would [...] be very difficult to reproduce something like a Duchamp-style body of work, since the AI would have to start with the very heterogeneous dataset of this artist's oeuvre, encompassing *Fountain*, *Bottle Rack*, the *Large Glass*, the late *Étant donnés*, and so on" (Manovich, Arielli 2021: 8). The questions to be addressed both from a didactic and a scholarly perspective are: Is AI changing the languages and techniques used in media representations? Are AI productions homologizing creativity?

The *critical* approach within an Audiovisual, and more broadly Media, Education framework is deeply concerned with unraveling the intricate power dynamics inherent in the distribution strategies employed by media conglomerates across various platforms, including OTT services, broadcast television, and traditional movie theaters. This analytical lens delves into how the dissemination of representations intersects with power relations, probing questions such as: Who controls the narrative and decides which stories are told? Whose voices are amplified in the narrative, and whose perspectives remain marginalized or silenced? What underlying power structures shape the storytelling process, and why? Examining these aspects sheds light on the societal viewpoints embedded within the text and highlights the ways in which distribution practices reflect and perpetuate existing power imbalances.

The role of artificial intelligence (AI) in audiovisual production cannot be divorced from the influence of big corporations, global power dynamics, and national governmental policies. AI technologies are not neutral; rather, they are shaped by the interests and agendas of those who train and feed data to the AI models. This raises critical questions: Who programs the AI algorithms, and what are their motivations? What objectives do these companies aim to achieve using AI in audiovisual production? Additionally, it is essential to explore the alliances and conflicts between these corporate entities, as these dynamics can significantly impact the development and utilization of AI systems in media creation.

From an *ethics* point of view teachers and educators should promote an analysis of the ways in which certain representations impact society and the need to seek accountability and responsibility towards fairness (e.g. #MeToo, #RepresentatinsMatter, etc.). The challenge is to investigate and raise awareness as to what degree AI-generated content keeps track of sociopolitical issues and people's changing sensitives. To what

degree can AI be trained to prevent or identify bias and stereotypes in creative processes such as screenplay creation? Using software like ChatGPT can lead towards the production of content that is more inclusive and aware of social change?

3.3 Educating "for" audiovisuals

The final domain of interest within the AIAL framework merges an educational approach to audiovisuals with the *aesthetic*, *critical*, and *ethical* aspects by adopting a production studies perspective. Within this framework, educators and students are tasked with recognizing that the *aesthetic* dimension of an audiovisual product is intricately linked to various factors, including the diversity of the professionals working in the production teams and media companies, budget constraints, stylistic choices of production studios, target demographics of the media content, distribution channels, format specifications, utilization of CGI, special effects, etc.

A primary focus here involves discerning the extent to which representations are grounded in the professional world and exploring the collaborative dynamic between human creativity and generative AI in shaping audiovisual representations and their aesthetics (Barotsi et al. 2023a, 2023b)

Although progress is gradually being made towards achieving a more balanced representation among protagonists on digital platforms, there remains a notable underrepresentation of non-Caucasian, male, heterosexual industry professionals (Hollywood Diversity Report, 2022[9]). The limited diversity in audiovisual representations is frequently attributed to the lack of diversity among above-the-line professionals. In essence, those responsible for writing and casting actors for roles often risk succumbing to biases stemming from their own sociocultural backgrounds. In response to these challenges, the audiovisual industry, particularly Over The Top (OTT) platforms like Netflix, is exploring the potential of Artificial Intelligence (AI) in both writing and casting processes (Koo 2023). Delving deeper into AI's impact onto these categories, attention is drawn to identifying cultural and racial biases throughout the entire production chain, spanning from the composition of production teams to scriptwriting, casting decisions, and beyond. Against this backdrop, researchers and instructors must acknowledge the production contexts (as well as national contexts) in which audiovisual media are crafted; such exploration might involve the utilization of various software tools, such as the *Geena Davis Inclusion Quotient* (which provides data on gender representation), *Scriptbook* (offering insights into screenwriting), and *Affectiva* (providing information on emotions, behaviors, and human interactions), among others (Luukka 2019). Thus, from and *ethics* point of view, there is an imperative to train AI models to recognize and rectify inequalities and biases ingrained within both their algorithms and the human thought processes involved in media creation, thereby fostering a more equitable media landscape.

Furthermore, from a *critique* standpoint, it is essential to discern the power structures and relationships that govern the broader media ecosystem, prompting a reflection on the influence wielded by major media conglomerates in shaping content creation, story selection, and narrative perspectives. Additionally, there is a need to probe the extent to which cinematic studios and production companies rely on AI-driven software to predict the success of a film before the greenlight stage. The objective of this aspect of the framework is to assess the degree to which media productions are influenced by formulaic methods geared towards achieving commercial success at the box office, as opposed to being guided by the artistic sensibilities of the creative team or a sincere intent to convey profound narratives. This entails scrutinizing whether media content demonstrates uniformity, discerning emerging patterns, and evaluating the relationship between narrative decisions and commercial feasibility.

4 Conclusions

The integration of AI into the realm of audiovisual culture entails a partial shift in our understanding of creation, interpretation, and cultural legacy. If we consider traditional media as extensions of human senses, then AI represents a further extension of human capacities in facilitating interactions between ourselves and the world. Our interaction with technology continually broadens and alters our approaches to creation, thereby influencing our cultural trajectory. This prompts the question of whether such advancements have the potential to

9. https://socialsciences.ucla.edu/initiatives/hollywood-diversity-report/ (last accessed 07-11-2024).

redefine our understanding of human cultural and artistic legacies and how a mindful and current Media and Audiovisual Education should respond to these transformations. Such inquiries necessitate a comprehensive understanding of AI mechanisms, including algorithmic biases and dataset selection processes. Moreover, the incorporation of AI into audiovisual education demands a reevaluation of traditional approaches, emphasizing experimentation, interpretation, and proficiency in navigating AI tools. The existing approaches adopted by scholars and school instructors may be inadequate to embrace the incorporation of AI into audiovisual education. AI's integration introduces a paradigm shift in the laboratory and experimental aspects, highlighting the importance of proficiency in devising effective prompts and programming, rather than solely relying on creative authorship. The emphasis now shifts from generating original content to manipulating existing images and innovatively remixing them. Consequently, there arises a pressing need to reassess not only creative processes but also the educational framework, prioritizing experimentation and interpretation while acknowledging the potential ambiguities introduced by AI.

In essence, scholars and educators aiming to explore the relationship between artificial intelligence and audiovisual culture, and to establish a comprehensive approach, such as the Artificial Intelligence Audiovisual Literacy (AIAL) framework presented here, must consider the following aspects: (1) The impact of AI on the relationship between audiovisual representations and reality (McIntyre 2018). Key questions to ponder include: What types of images regarding the world and society can AI generate? Are these images deemed reliable and credible? Is reliability a prerequisite? What are the limits of creative expression? (2) The way AI transforms the process of creating media content (Manovich 2020). Pertinent inquiries involve: How can we effectively collaborate with AI software? What tasks can we delegate to AI and which ones should remain under human control? How can we enhance AI's effectiveness through training? What skills are necessary for improved communication with AI? (3) The mechanisms underlying AI-generated outcomes (Gunning 2017). To become informed consumers of AI-generated products, it is imperative to scrutinize the methods by which AI generates its results. Questions to explore include: What type of data informs the AI model? Who determines the selection of datasets? What underlying motivations guide dataset selection?

Thus, the aim is not simply to provide students with the ability to interpret audiovisual texts or enable them to create them; rather, it seeks to lead them in a systematic reflection on their own process of reading and constructing meaning. This process allows instructors and students alike to decode acquired information, analyze it separately, and elaborate on it before combining it in innovative ways and meaningful forms. Ultimately, the convergence of AI and audiovisual culture underscores the need for continual reflection and adaptation in our engagement with technology and its implications for human creativity and expression.

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