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# Rooting the Algorithm: Cultural Heritage, AI Video Pipeline Methodology, and the Localisation of Generative AI in Communication Design Education

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**Abstract.** Generative AI tools have arrived in design education faster than most curricula can account for. This paper reports on a workshop conducted during an ERASMUS+ Teachers Exchange, in which Communication Design students produced original short animated films using a five-phase AI video pipeline built entirely from freely accessible tools. A structured lesson on Italian graphic history, placed upstream of AI engagement, produced a clear divergence in creative outcomes: students who drew on that cultural grounding produced work assessed as consistently more original and visually coherent than those who did not. The paper proposes a counter-strategy termed "rooting the algorithm" — the deliberate placement of culturally situated instruction as a precondition for AI engagement, so that a specific cultural anchor precedes rather than follows the machine's statistical defaults. Three contributions follow: a replicable AI video pipeline for design education; qualitative evidence that cultural grounding functions as a meaningful upstream differentiator in AI-assisted creative work; and a theoretical argument for understanding AI localisation as an ethical and pedagogical responsibility, not merely an aesthetic preference.

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**Keywords:** Generative AI, design education, cultural localisation, prompt literacy, AI ethics.

## 1 Introduction

Animated filmmaking has historically been expensive, technically demanding, and largely out of reach for students without specialist training or institutional resources. The arrival of free generative AI tools has changed that. Orak and Turan [1], reviewing AI integration into digital video production across 21 international studies, find that these tools are already embedded in diverse creative and educational workflows, and that adoption is moving faster than pedagogy. Epstein et al. [2] make the stronger claim: generative AI is not simply a faster version of existing production methods but a new creative medium, one that alters how ideas are formulated before they are executed.

There is, however, a structural problem with these tools that tends to get less attention than the access argument. Generative AI models trained on internet-scale datasets reproduce the visual conventions most heavily encoded in that data — in practice, the commercial illustration styles of Anglophone and East Asian media industries. Karpouzis [3] frames this not as a neutral technical property but as a form of cultural bias, one that amplifies already-dominant visual traditions and marginalises those underrepresented in training data. For a Communication Design student working anywhere outside those dominant traditions, the consequence is tangible: the cultural vocabulary of their own heritage has to be carried deliberately into the process. Students carry what they have been taught.

The workshop this paper reports on was designed around both of these realities. Conducted in Milan, as part of an ERASMUS+ Teachers Exchange, it introduced Communication Design students to a five-phase AI video pipeline for producing original short animated films using freely accessible tools. Before any AI tool was opened, students attended a lesson on Italian graphic history applied specifically to character design, to activate a cultural vocabulary and place something locally rooted upstream of the pipeline.

Not all students drew on that lesson. Those who did produced different work. One student designed a mermaid character with explicit reference to Italian and Mediterranean iconographic traditions: the decorative lineage of Italian illustration inspired by Lora Lamm, the visual storytelling of Italian comics, the mythological imagery of the Mediterranean coast. Against peers who had not engaged the heritage lesson, her film was assessed as more original, more visually coherent, and more culturally resonant. The mermaid runs through this paper as the primary case study.

This paper makes three contributions. It presents the five-phase AI Video Pipeline as a pedagogically tested and replicable model for Communication Design education. It provides qualitative evidence that cultural heritage instruction functions as a meaningful upstream differentiator in AI-assisted creative work, with students who engaged Italian graphic history producing work assessed as distinctly stronger than those who did not. And it proposes a theoretical argument for the deliberate localisation of AI creative tools as an ethical and pedagogical responsibility — what this paper calls "rooting the algorithm."

## 2 Theoretical Framework

### 2.1 Democratisation of creative practice through generative AI

The argument for AI as a democratising force in creative production is well documented. Zheng et al. [4], in introducing Open-Sora, an open-source video generation model, frame the project explicitly as an effort to make advanced video synthesis accessible to the broadest possible range of creators, not only those with access to commercial infrastructure. Free and open-source generative AI tools have lowered the cost of entry to video production in ways that were structurally impossible five years ago. A student with a laptop, free tools, and methodological knowledge can now move from script to animated film without a studio, a large team, or a professional software budget. The question is not whether students should have access to these tools, but what they need to know in order to use them well.

### 2.2 AI in design education: opportunities, tensions, and creative agency

Generative AI tools bring real pedagogical opportunities. Rasheed et al. [5], in a systematic review synthesising 137 studies, identify prompt literacy and distributed agency as two central constructs emerging from research on generative AI and creativity in education. They find that generative AI transforms rather than simply augments creative practice, redistributing agency between human and machine in ways that require conscious management. The risk most discussed in the literature is overreliance. When students engage AI tools without methodological scaffolding, they tend to accept outputs rather than interrogate them. Celik et al. [6] note that this pattern erodes the critical engagement that higher education is meant to develop. In design education specifically, the stakes are higher because overreliance is not merely cognitive but aesthetic: tools left to their defaults produce work that converges toward the statistical centre of the training data. Students who lack the cultural vocabulary to push back will produce work that looks like everyone else's [3].

### 2.3 The homogenisation problem: globalised AI aesthetics and visual cultural identity

Generative AI models produce outputs weighted toward the most statistically prevalent conventions in their training data. In practice, this produces a recognisable family of visual outputs — specific lighting treatments, proportional conventions, colour handling — that has come to be identified as an "AI aesthetic." Epstein et al. [2] note that even when users prompt AI tools with stylistically specific terms such as "watercolour" or "anime," outputs converge toward dominant commercial iterations of those styles rather than their genuine historical or regional variants. A prompt requesting a character in the style of Italian comics will not, by default, produce anything resembling the actual graphic tradition of Pratt or Toppi. It produces what the training data associates most strongly with the prompt words used.

Visual culture is not mere decoration. It is a medium through which communities transmit identity, memory, and meaning across time. UNESCO's Recommendation on the Ethics of Artificial Intelligence [7] addresses this directly, stating that AI technologies can lead to increased concentration of cultural content, with negative implications for the diversity and pluralism of cultural expressions. UNESCO extended this concern to the film and creative sectors in 2023, arguing that generative AI models should be corrected to prevent culturally homogeneous content [8]. The history of Italian graphic design is particularly relevant here: its tradition includes Bruno Munari, Lora Lamm, Albe Steiner, Bob Noorda, Massimo Vignelli, and Enzo Mari, and the internationally recognised comics tradition of Pratt, Battaglia, and Toppi. A culturally adequate Communication Design education, in Italy as elsewhere, cannot treat knowledge of this disciplinary history as optional.

The concept of glocalisation offers a productive theoretical frame. Roudometof [9] argues that the 21st-century ICT revolution does not simply produce cultural homogenisation: it creates conditions in which local constituencies can actively use global tools to reconstruct and reinforce local identities, but only when they bring cultural agency to the interaction. Passive use of globally trained AI tools tends toward homogenisation; active, culturally grounded use can tend in the opposite direction.

### 2.4 Cultural heritage as creative methodology: Italian graphic history and character design

The workshop's preparatory lesson drew on Italian graphic and visual history specifically as a resource for character design. The Liberty movement brought to Italian illustration a flat, decorative line quality and an ornamental approach to the human figure with no direct equivalent in the dominant training-data aesthetic. The Milanese graphic design movement of the 1960s through 1980s was profoundly shaped by the Swiss graphic tradition, whose rigorous grid systems and typographic precision were critically reinterpreted within the Italian cultural context by designers such as Max Huber, Bruno Munari, Bob Noorda, Massimo Vignelli, Lora Lamm, A.G. Fronzoni, and Enzo Mari. The comics tradition, running from the Risorgimento period through the iconic characters of Diabolik, Tex Willer, and Corto Maltese, developed a storytelling visual grammar entirely distinct from the manga and superhero aesthetics that dominate AI outputs when users prompt for "graphic novel style."

The mermaid figure sits at a particularly rich intersection of these layers. The siren carries centuries of visual history in Italian and Mediterranean culture, from the Homeric sirens of classical antiquity through Renaissance and Baroque decorative arts, to their treatment in the Liberty movement's illustration. A student who brings this tradition into dialogue with a free AI tool is introducing a visual vocabulary so specific and underrepresented in training data that the tool cannot absorb it into its defaults.

### 2.5 Prompt literacy, pipeline thinking, and methodological scaffolding

The ability to translate creative intent into effective AI instructions — what Lo [10] describes as a new form of literacy combining artificial intelligence, linguistics, and

user experience design — is not equally distributed among students encountering these tools for the first time. Without explicit instruction, students tend to write vague, generic prompts that produce vague, generic outputs. The pipeline structure addresses this by breaking the production process into discrete phases, making creative decisions explicit and discussable at each stage. Cultural heritage grounding functions as a Phase 0 of the pipeline: the layer that precedes all five technical phases and sets the aesthetic and narrative direction before any AI tool is engaged.

## 3 The Workshop: Context, Design, and Methodology

### 3.1 Context: ERASMUS+ teachers exchange

The workshop was conducted in Milan, as part of an ERASMUS+ Staff Mobility for Teaching exchange. Under this programme, academic staff deliver content at a partner institution with the explicit expectation of knowledge exchange across institutional cultures [11]. Dincrer et al. [12], drawing on qualitative interviews with 55 educators, find that this kind of mobility tends to produce a renewed pedagogical identity: visiting academics reshape their methods not despite the unfamiliar context but because of it. That was the condition here. The visiting academic brought a structured AI production methodology developed outside Italy; the host institution brought a student cohort shaped by a national tradition of fine arts education. What the ERASMUS context created was productive friction: a pipeline methodology arriving from outside, meeting students who carried a visual inheritance they had not yet been invited to examine as a deliberate creative resource.

### 3.2 Preparatory lesson: Italian graphic heritage and character design

The session preceding the pipeline workshop was structured as an activation rather than an instruction. The goal was not to give students a repertoire of forms to copy but to make a tradition they largely carried implicitly into something they could use consciously. Traditions introduced included the flat, ornamental human figure treatment of the Italian Liberty movement; the compositional dynamism and chromatic boldness of Futurist graphic design; the Milanese tradition of Swiss-minimal graphic design, illustrated with reference to Lora Lamm's work; and the classical Mediterranean iconographic tradition — sirens, nymphs, marine deities — that recurs across centuries of Italian decorative and narrative art. Students were not required to draw on any of this material. Some did; others did not. That differential uptake was not designed as a methodological variable at the outset. It became one, and it is the basis for the comparative analysis in Section 4.




1959, Manifesti per Pirelli

"Estate e mare. La Rinascente". Manifesto del museo.

**Fig. 1.** Lora Lamm's work.



**Fig. 2.** Student's Illustration.

### 3.3 The five-phase AI video pipeline

The pipeline has an implicit Phase 0 — the cultural and narrative grounding described above — that precedes all five technical phases. Phase 1 (Narrative Engineering) used freely accessible large language models to develop narrative concept and script, fixing human creative intent before any visual decision. Phase 2 (Visual Prototyping) defined the film's visual identity using free image generation tools, with consistency maintained through reference anchoring and iterative prompt refinement. Phase 3 (AI-Driven Animation) introduced image-to-video generation, with students working on temporal stability and virtual cinematography. Phase 4 (Audio Synthesis) constructed a complete audio layer using free voice synthesis, music generation, and sound effect generators.

Phase 5 (Final Montage) assembled films in free video editing software, with attention to pacing, transition, and colour grading as the tools for binding visually heterogeneous AI-generated assets into a coherent whole.

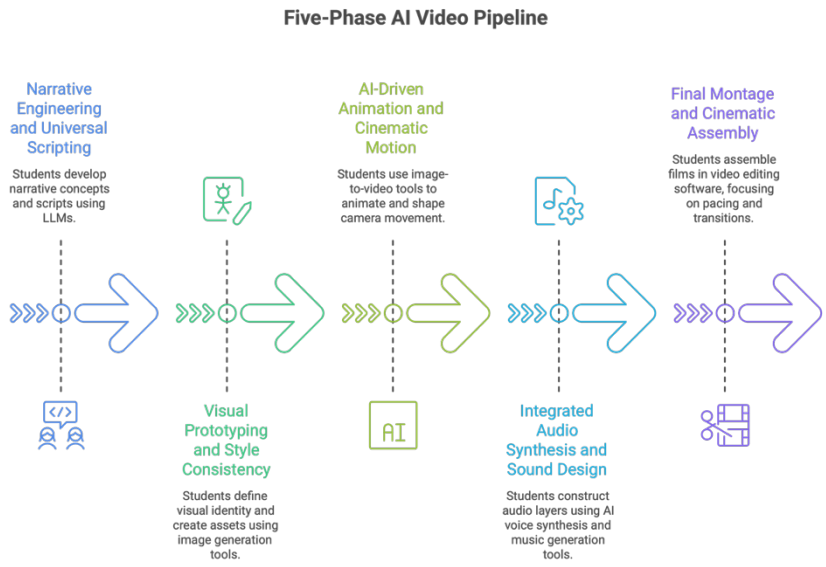


**Fig. 3.** Five-phase AI Video Pipeline. Source: Author

### 3.4 Student task and research methodology

Students were asked to design an original character and use it to produce a short animated narrative film in the style of their choosing, using only freely accessible tools. The research methodology is practice-led and qualitative. Barrett and Bolt [13] argue that in creative arts research, the artefact produced is a form of knowledge and the process of making it is a legitimate mode of enquiry. That position is adopted here: student films are the evidence of what the pipeline produces.

Assessment was conducted by the workshop facilitator against a six-dimension rubric covering narrative coherence, visual consistency, pipeline fidelity, creative originality, cultural rootedness, and aesthetic distinctiveness. Each dimension was rated on a three-point qualitative scale — developing, achieved, distinctive — generating a descriptive profile rather than a numerical score. Given the small cohort and the interpretive nature of the study, no claim of inter-rater reliability is made; the rubric functions as an analytical lens rather than a summative grading instrument. Its primary role was to make the basis of comparative judgements explicit and to ensure that the differences observed between the two groups of students were assessed against consistent criteria rather than impressionistic response.

The mermaid character developed by one student functions as an instrumental case study in Stake's [14] sense, selected because it makes a broader argument visible. The study's limitations are worth stating plainly: the cohort was small, the workshop was short, and the analysis is interpretive. Statistical generalisation is not possible. What is possible is theoretical generalisation in the sense that Lincoln and Guba [15] describe: a grounded analytic proposition significant enough to warrant testing in larger and more varied contexts.

# 4 Analysis: Conceptualisation, Production, and Post-Production

## 4.1 Conceptualisation phase: cultural grounding, narrative agency, and prompt literacy

The difference between the two groups of students was visible early. Those who had engaged with the Italian graphic heritage lesson arrived at the character design stage with something specific to work with — a visual vocabulary that existed independently of the AI tools they were about to use. Those who had not approached character design more openly, which sounds like an advantage but functioned, in practice, as an invitation for the tools' defaults to fill the gap. The second group produced character designs that were technically competent but visually unremarkable, converging toward the conventions that dominate AI image generation outputs. Oppenlaender [16], in his ethnographic study of text-to-image communities, identifies style modifiers as the primary mechanism through which practitioners steer AI outputs away from defaults. But style modifiers only work if the user has a precise enough visual vocabulary to deploy them, and precision was exactly what the heritage lesson had provided to those who engaged with it.

The mermaid character illustrates this concretely. The student worked from Italian and Mediterranean iconographic source material: the morphological conventions of the siren in Italian Renaissance and Baroque decorative arts, where the siren is typically more angular and architecturally composed than her Northern European equivalents; the flat, ornamental line quality of Liberty illustration applied to the figure's hair and tail; a chromatic restraint drawn from fresco tradition rather than the saturated palette AI tools default to. These were specific, nameable visual decisions that translated into equally specific prompt vocabulary. Rasheed et al. [5] identify prompt literacy as one of the defining variables in the quality of AI-assisted creative outcomes. What this workshop made visible is that cultural grounding is a primary source from which that precision can be drawn — and that without it, the specificity required to direct rather than merely use an AI tool is difficult to locate anywhere else.

### 4.2 Production phase: motion, temporality, authorship, and cultural continuity

The move from static character design to animated motion introduced a challenge that cut across both groups: image-to-video models have a strong tendency to normalise visual style over time. Xing et al. [17], in their survey of video diffusion models, identify this as a structural property of current architectures: temporal consistency mechanisms, designed to prevent visual instability between frames, can inadvertently smooth out the stylistic specificity present in the reference image. The result is aesthetic drift — the character becomes more generic as the video progresses. Students who had engaged with the heritage lesson were more likely to notice this and develop active strategies to resist it: shorter generated clips, more frequent re-injection of the reference image, tighter prompt control. The mermaid student generated clips of four to six seconds rather than the ten to fifteen that some peers attempted, reassembling narrative continuity in the editing phase rather than trusting the generation model to maintain it. This is what Izani et al. [18] describe as the optimal human-AI relationship in creative film production: the human directing at the granular level rather than delegating continuity to the machine. Maresova et al. [19], drawing on a Q methodology study of art students' relationships to generative AI, find that students with a strong sense of cultural identity are more likely to position themselves as directors of AI rather than recipients of its outputs. The production phase made this dynamic tangible: cultural grounding, established before the pipeline began, gave students something concrete to protect through it. Those without that grounding had less to defend against the model's normalising tendencies, and their work showed it.

### 4.3 Post-production phase: assembly, cultural identity, and cinematic unity

Assembly was where individual choices either cohered or fell apart. Students who had maintained cultural distinctiveness through the earlier phases made editorial decisions that reinforced it: pacing that favoured held shots over rapid cutting, colour grading that preserved the restrained palette established at the character design stage. The audio dimension is worth noting separately. The mermaid student prompted for something closer to Italian folk music — specifically the modal melodic structure and sparse instrumentation of the Mediterranean coastal tradition — and iterated through several generations before finding something that felt continuous with the visual world of the film. Cultural specificity, applied consistently across the pipeline, produced a film with an auditory as well as a visual identity.

Students who had not engaged the heritage lesson produced final films that were technically functional but difficult to describe in terms of a distinct creative identity. Koenitz [20] argues that the primary risk of AI in creative production is not that it replaces human work but that it displaces human intention: that creators begin to follow where tools lead rather than directing them toward where they already intend to go. The workshop's findings support this and add a cultural dimension: the displacement of intention is most damaging when it also displaces cultural identity. What Phase 0 provided, for those who used it, was a fixed point of reference stable enough to resist

that displacement across all five subsequent phases. The three phases of analysis together trace a single mechanism — cultural grounding functioning as an upstream anchor — from the first character sketch through to the final cut.

# 5 Student Reflections: Evaluating the Pipeline and Its Pedagogical Effects

## 5.1 Overview of student feedback

Student reflections were collected verbatim to preserve the authenticity of their experiences. These accounts showed a wide range of responses: enthusiasm for faster creative workflows sat alongside concerns about loss of control and authorship. Several students described the process as "intuitively generative" and "unexpectedly collaborative." Others articulated moments of uncertainty, particularly when outputs diverged from initial intentions.

## 5.2 Creative empowerment and creative anxiety

Verbatim student feedback illustrates the tension clearly. On challenges: "AI often generates things that weren't there before. Sometimes the prompt needs to be rewritten several times to achieve the desired result." And: "Maintaining the visual consistency of the character across different scenes." On solutions: "By rewriting the prompts in detail and recalculating the image generation several times it is possible to ensure that the AI follows my vision and produces exactly what I want, whilst avoiding undesirable outcomes." Overall process evaluations were broadly positive: "I'd never used it in this way before, not even to create images, and now I have the knowledge needed to create a video from scratch." This tension between empowerment and anxiety is itself an important pedagogical outcome: it suggests the workshop cultivated critical AI literacy, not merely technical facility.

## 5.3 Pipeline effectiveness: which phases were most challenging

Phase 0 — character design grounded in cultural reference — proved fundamental in establishing the narrative and aesthetic direction of the project. Students who drew on the Italian graphic tradition defined their protagonist in a way that shaped every subsequent decision in the pipeline. Phase 1 (scripting), initially underestimated, was retrospectively identified as the essential structural anchor. Phase 3 (motion and animation) emerged as the most technically demanding, requiring iterative problem-solving. Phase 5 (assembly) was consistently described as the most creatively rewarding, enabling synthesis and expressive control. These findings support a pedagogical reading of the pipeline: its phases are not equivalent, and their sequential organisation critically influences both learning outcomes and creative agency.

### 5.4 Reflections on cultural heritage: the Italian graphic history lesson in retrospect

Students who engaged with the Italian graphic heritage lesson expressed, in retrospect, surprise at how much the cultural grounding had affected their final output. Several described a sense of creative security that came from having a specific visual vocabulary to draw on — a stable reference point against which the AI's tendency to normalise could be consciously resisted. The heritage lesson had made Italian graphic history newly visible as a practical creative resource, in a way that abstract study had not; confronting it in that mode changed its status. Students who had not engaged with it showed some retrospective awareness of what the grounding provided, with several expressing in end-of-workshop discussion that they would approach the lesson differently if they could repeat the process.

### 5.5 Ethical awareness: authorship, transparency, and cultural responsibility

Student reflections provide substantive evidence of emerging ethical awareness. Many participants explicitly questioned the coherence of AI-generated visual styles with their initial character design, demonstrating a growing sensitivity to the role of the visual designer as a conscious pilot who writes and rewrites the prompt to achieve specifically the style they have defined. This concern led to broader discussions about intellectual ownership and the legitimacy of stylistic appropriation in AI-assisted production. Students reflected on the necessity of disclosing AI involvement in their work, with many acknowledging that the opacity of generative processes risks obscuring the boundaries between human and machine authorship. These reflections map directly onto the core principles for ethical AI guidelines in art education: transparency, creative contribution, and attribution.

### 5.6 The pipeline as a pedagogical framework

Synthesising student evaluations, the pipeline functions not merely as a technical workflow but as a thinking tool — a scaffold that externalises the phases of the creative process and makes them visible, discussable, and teachable. The sequential structure forces students to confront decisions that unstructured AI engagement would bypass: what story do I want to tell? What visual tradition does my character come from? How do I maintain that character's identity through motion? Each question becomes answerable in a specific phase, with the constraints of each phase preventing later phases from drifting without direction.

What the student reflections add to the analytical picture developed in Section 4 is a confirmation from the inside. The differences in creative outcome between the two groups were not merely observable from the facilitator's position; they were felt by the students themselves. Those who had cultural grounding knew what they were protecting and could describe what it meant to protect it. Those who had not felt the absence of that anchor most acutely at the moments when AI outputs diverged from their intentions — which is precisely when having a named tradition to return to would

have mattered most. Cultural grounding, positioned as Phase 0, is what ensures that the answers students give to those questions are genuinely their own rather than the AI's statistical defaults.

# 6 Discussion: Localisation, Freedom, Ethics, and the Future of AI in Design Education

## 6.1 Democratisation with cultural responsibility

The argument for AI tools as democratic instruments in creative education is solid, and the workshop's outcomes support it. Students with no prior experience of animated film production completed original short films in a brief intensive programme using only freely accessible tools. But the workshop also revealed something the democratisation argument tends to gloss over: access to tools and the ability to use them well are not the same thing. Students who worked without the Italian graphic heritage lesson produced work that was technically functional but difficult to describe in terms of a creative identity. Their films looked like AI-assisted student films, which is not a negligible achievement, but it is not the same as producing work that is distinctively theirs. Democratisation of access does not automatically democratise creative identity. That requires treating cultural heritage instruction not as optional enrichment but as a methodological precondition.

## 6.2 “Rooting the algorithm”: localisation as pedagogical and ethical practice

The concept of "rooting the algorithm" — placing culturally situated creative instruction upstream of AI engagement — is the paper's central theoretical proposal. It does not assert that AI tools are inherently hostile to local visual culture. It asserts that they are indifferent to it, which in practice produces the same result unless the user brings sufficient cultural specificity to override the defaults. Karpouzis [3] frames this as a bias problem rooted in training data distributions; Roudometof [9] offers a more productive frame through glocalisation, describing not the defeat of the local by the global but the active reconstruction of local identity through engagement with global infrastructure, provided local cultural agency is brought to the interaction.

It is worth being direct about the relationship between the concept and the practice it describes. Working with cultural references so that students make more conscious visual choices is not, in itself, a novel pedagogy: it is a foundational principle of any serious design education. What "rooting the algorithm" designates is the deliberate repositioning of that practice as an upstream precondition specifically for AI engagement, rather than as a parallel or subsequent activity. The shift matters because the tool this practice now precedes has a structurally different relationship to cultural references than a student's sketchbook or a studio critique does. A generative AI image model is not neutral toward the visual vocabulary a student brings: it has strong statistical tendencies that will absorb generic references into its defaults and resist

specific ones with varying degrees of accommodation. Cultural grounding, placed upstream, is what ensures that a student's vocabulary is specific enough to function as a steering mechanism rather than a suggestion.

It would also be misleading to present this as a frictionless operation. The specificity that makes a visual tradition valuable as an upstream anchor is often precisely what makes it difficult to translate into generative systems trained on different data distributions. A student working from the decorative lineage of the Liberty movement, or the compositional grammar of the Italian comics tradition, cannot assume that those references will be recognised, reproduced, or even approximated by a model whose training data privileges other conventions. What cultural grounding provides in this situation is not AI compliance but student resistance: a vocabulary precise enough to identify when the tool's output diverges from the intended direction, and a reference base stable enough to support iterative correction. The friction is productive, but it is real friction, and it places a genuine cognitive demand on students that generic prompt use does not.

The argument generalises. The same pipeline methodology, preceded by a lesson activating Portuguese visual culture, Flemish graphic history, or West African textile iconography, would in principle produce the same differentiating effect, because the mechanism is not Italian-specific. It is the mechanism of cultural grounding as an upstream creative anchor, regardless of which tradition provides it. The EIMAD theme of freedom, ethics, and AI in research sits directly inside this argument. Freedom here is the freedom of design students to produce work reflecting their own cultural inheritance rather than the aesthetic defaults of systems trained predominantly on other people's visual cultures. The ethical obligation on design educators follows: passively adopting AI tools without attending to their homogenising tendencies is a choice to allow those tendencies to operate unchecked.

### 6.3 The ERASMUS frame: transnational exchange as a site of cultural dialogue

The ERASMUS context produced something that neither the visiting academic nor a locally delivered version of the same course could have produced alone. The pipeline methodology arrived from outside; the cultural content arrived from within. Roudometof [9] argues that the ICT revolution creates glocal spaces in which global infrastructure and local agency interact to produce new cultural forms, but only when local constituencies actively bring their cultural context to the engagement. The ERASMUS exchange model, at its best, creates exactly these conditions. Its replication across other partnerships — with different cultural contexts supplying the heritage layer and the same pipeline providing the methodological structure — would build a comparative evidence base that a single study cannot provide.

### 6.4 AI use in the creative process: generative use and coherence to personal reference

A culturally grounded use of AI in the creative process requires a clear distinction between authorship and generation. While AI systems excel in producing formal variations and dynamic transformations of visual elements, their outputs risk becoming stylistically incoherent or culturally flattened when not anchored in a well-defined set of original references. The responsibility of the designer lies in constructing a coherent corpus of personal and culturally situated references prior to engaging generative tools. Cultural heritage — whether typographic traditions, vernacular artefacts, or local iconographies — functions as a critical framework through which designers encode meaning and identity into their work. Within this structured framework, AI can be deployed as a generative agent whose role is not to originate concepts but to expand upon them: exploring formal variations, simulating movement, and iterating compositional possibilities at a scale unattainable by manual means. This approach reaffirms the role of the designer as a cultural mediator, ensuring that technological innovation extends rather than displaces the continuity of localised creative identities. The implications for EU cultural policy are direct: the AI Continent Action Plan [21] explicitly names the protection of cultural diversity as a priority in AI development, yet offers little guidance on pedagogical implementation. The European Parliament's Committee on Culture and Education has separately called for AI systems to be regulated to prevent discrimination against cultural and linguistic minorities [22].

### 6.5 Authorship, ethics, and the limits of AI authorship in culturally specific work

The authorship question runs through the workshop's analysis: who made the creative decisions when a student directs an AI tool to produce a character, a movement, a composition? Fritz [23], reviewing EU case law on authorship in AI-assisted works, argues that the human authorship threshold in European copyright doctrine turns on the degree to which the human creator's personal intellectual contribution is reflected in the final work. Where AI generation is directed by prompts expressing specific, nameable creative decisions traceable to a particular cultural tradition, the case for recognising human authorship is considerably stronger than where prompts are generic. The mermaid student's film is visually attributable to her not because she drew every frame but because every phase of the production bears the marks of deliberate creative decisions that preceded the AI's contribution. The AI executed; she directed. Mazzi [24] argues that originality in prompt authorship can constitute a creative contribution sufficient to ground copyright claims, provided the prompts reflect genuine aesthetic intention. Cultural grounding is precisely what creates the conditions for genuine aesthetic intention.

## 7 Conclusions and Future Directions

This paper set out to examine whether a structured AI video production pipeline, preceded by instruction in locally specific visual heritage, produces qualitatively

different creative outcomes than the same pipeline without that grounding. The answer, from this single workshop, is yes, and the mechanism is visible enough to warrant a theoretical claim and a direction for further research.

Three contributions are offered. First, the five-phase AI Video Pipeline is presented as a pedagogically tested and replicable model for Communication Design education, built entirely from freely accessible tools and designed to be adapted across institutional contexts. Second, qualitative evidence from student outputs and reflective accounts shows that cultural heritage instruction functions as a meaningful upstream differentiator: students who engaged with Italian graphic history produced work assessed as more original, more visually coherent, and more culturally resonant than those who did not — illustrated most concretely by the mermaid case study, whose character design drew on Italian Liberty illustration, Mediterranean iconography, and the visual grammar of Italian comics and remained traceable to those sources at every phase of the pipeline. Third, the theoretical argument for "rooting the algorithm" is proposed as an ethical and pedagogical imperative for design education in the age of globally trained generative AI: the deliberate placement of culturally situated instruction upstream of AI engagement, so that a specific cultural anchor precedes rather than follows the machine's statistical defaults.

The study's limitations should be stated plainly. The cohort was small, the workshop took place over a short and intensive timeframe, and assessment was conducted by the workshop facilitator against a structured rubric without a second assessor. Statistical generalisation is not the claim being made; the patterns observed are clear enough to ground a theoretical proposition, but that proposition requires testing in larger cohorts, across different national and institutional contexts, and with assessments involving multiple evaluators. Future research directions include comparative studies across different cultural contexts using the same pipeline with locally specific heritage instruction; development of a Cultural Grounding Index as an evaluative dimension in AI-assisted design assessment rubrics; longitudinal study of whether cultural grounding produces lasting effects on students' design identity and practice; and investigation of whether heritage grounding can be systematised at the prompt engineering level through culturally specific style libraries or fine-tuning on heritage datasets, and what the ethical implications of doing so would be [25].

The most pressing question in AI and design education is not how to use the tools. Students will learn that with or without us. It is how to ensure that what they make with those tools is recognisably, irreducibly theirs: culturally rooted, personally authored, and genuinely free.

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