

Stimulate, Don't Replace: How AI Design Shapes Human Creative Effort

Evidence for the AI strategy for the cultural and creative sectors, with a case from France

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EUROPE'S CREATIVE RECORD

Films from European countries, Europe being defined here as the 27 Member States of the European Union together with their predecessor states, have won 52 of the 79 awards recorded in the by-country tally for Best International Feature Film (Italy 14 and France 12) and 213 of the 359 nominations. A Member State is credited as a production country on 54 of the 102 films that have taken the Palme d'Or, and France alone on 29. The festivals of Venice (founded 1932), Cannes (first held 1946) and Berlin (1951) are European. In 2025 some 8.9 million people worked in culture in the European Union – 4.3% of all jobs and among them 1.8 million artists and writers (Eurostat 2026). The cultural and creative industries account for about 3.95% of EU value added (European Commission DG GROW). Of the world's hundred largest luxury-goods companies, 23 are Italian, and seven French houses between them take nearly a third of the group's US\$347 billion in sales (Deloitte 2023). All of this is made in 24 official languages, from traditions that share little beyond a continent.

Generative AI now touches every one of these fields – film first. The research of the last three years (most of it published in 2024 and 2025) shows that its effect on a culture depends on how the tool is built rather than on the model inside it. Built to make the work it makes each user more productive and everyone's work more alike – and it pulls writers from every culture toward the style of its training data. Built to question the maker about the maker's own work the same model raises quality with no measured loss of diversity, and its users keep ownership of the result. The first design erodes what makes European creativity unique. The second compounds it.

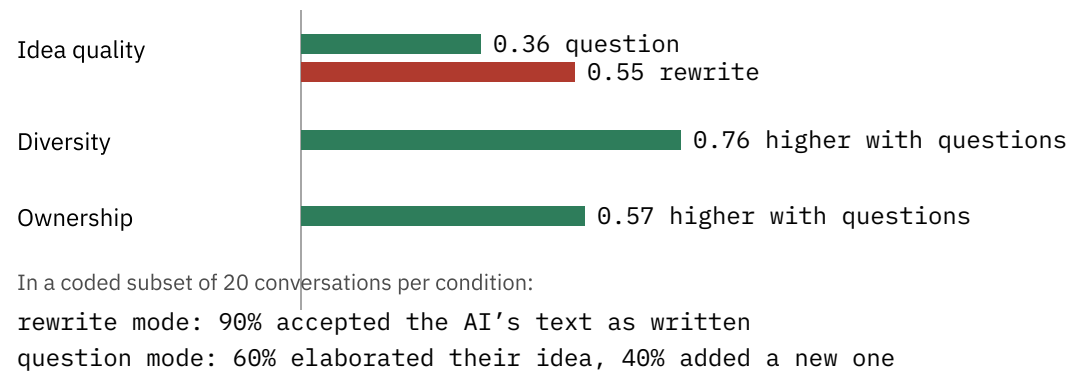
In the Commission's own survey (Special Eurobarometer 562 with fieldwork in February and March 2025) 81% preferred human-made cultural content to AI-generated content (the report's narrative figure; its annex table gives 77%) and 73% were concerned about the effect of generative AI on artists' employment or earnings. The question for the strategy is which AI to build, buy and teach.

THE EVIDENCE

AI raises individual output and lowers collective diversity. Across 28 studies and 8,214 participants people working with generative AI produced ideas rated better than people working alone ($g = 0.27$) while the diversity of ideas across people fell sharply ($g = -0.86$) (Holzner, Maier and Feuerriegel, 2025 – a preprint, and the largest synthesis to date). A second meta-analysis (19 studies and 61 effect sizes) puts the homogenisation effect at $d = 0.33$ and finds that it survives sensitivity tests (de Rooij and Biskjaer 2026). Across more than four million artworks by 50,000 users the adopters of image generators raised their output by 25% and the value of their work by 50% measured as favourites per view, while the average novelty of their artworks fell relative to non-adopters and their subjects and styles grew steadily more alike (Zhou and Lee 2024). The effect is cultural as well as aesthetic – in a controlled comparison of 118 writers from India and the United States the suggestions of an AI assistant moved the Indian writers toward Western style while the American writers gained more from the tool (Agarwal, Naaman and Vashistha 2025).

The interface decides which effect you get. Maier, Schneider and Feuerriegel (2025, a pre-registered experiment with 486 participants) gave one group an AI that asked questions about the person's own idea and another group

an AI that rewrote the idea for them. The questioning AI raised idea quality ($d = 0.36$ against a no-AI control) and left idea diversity no lower than a plain AI assistant ($d = 0.003$, not significant), while its users reported higher ownership than those given either the rewriting AI ($d = 0.57$) or a plain assistant ($d = 0.60$). The rewriting AI also raised quality against the control ($d = 0.55$), but produced a less diverse idea pool than the questioning AI ($d = 0.76$). Nine in ten of its users accepted the rewrite without touching it. Six in ten of the questioning group substantially developed their own idea.



Effect sizes (Cohen's d) from Maier, Schneider and Feuerriegel (2025, Study 1, $N = 486$). In question mode the AI asks the person about their idea. In rewrite mode it improves the idea itself. Diversity in question mode did not differ from a plain AI assistant ($d = 0.003$), and no test against unaided work was run. The elaboration figures come from the authors' coded subset of 20 conversations per condition.

The same pattern appears in classrooms. In a field experiment with close to 1,000 secondary-school students (Turkey in the autumn of 2023) an unrestricted GPT tutor raised practice scores by 48% and lowered the later unassisted exam by 17%. A tutor limited to hints raised practice scores by 127% and left the exam unchanged (Bastani et al. 2025). Across 435 studies of feedback in education the effect of high-information feedback is $d = 0.99$ against 0.46 for corrective feedback and 0.24 for praise or punishment (Wisniewski, Zierer and Hattie 2020). An older synthesis of 607 effects found that more than a third of feedback interventions made performance worse – mostly when the feedback pointed at the person rather than at the task (Kluger and DeNisi 1996). What helps an artist is specific information about the work – acted on by the artist. What harms is a verdict or a finished product handed over.

Expertise still sets the ceiling. Images generated from professional artists' prompts were rated more creative than images from a chatbot's prompts, which in turn beat those from novices (Seli et al. 2025, 299 raters). In design work, generative AI helped everyone at the ideation stage and gave experts nothing at implementation while costing them 57% more time (Hou et al. 2025). The window in which AI augments a trained artist is ideation and critique – and it narrows as the artist matures.

IMPLICATIONS FOR THE THREE PILLARS

PILLAR	IMPLICATION	INSTRUMENT
1 · Innovation and competitiveness	European developers can compete on the augmenting design. General-purpose generators are built to produce output. A coach that withholds output is a different product, and	Score "the human generates, the AI questions" in Creative Europe, Horizon Europe and Digital Europe calls for artist-facing AI in education and training, and require every

	the evidence favours it for learning and for diversity.	funded system to state which design it implements.
2 · Fair models, ethics, diversity	Diversity of output across a cohort of users can be measured (semantic distance between submissions is one method). It can therefore be required, reported and compared.	Adopt output diversity as a mandatory outcome measure for publicly funded creative AI, next to adoption and productivity.
3 · Skills and the AI transition	AI literacy for artists must teach the difference between a tool that generates and a tool that coaches, and why the second protects their voice.	Fund artist-facing AI in schools and studios under the institutions' own control, with plain disclosure of what the tool will and will not do for the artist.

CINECOACH

CineCoach encodes the teaching method of Paco Wiser (a cinematographer trained at INSAS in Brussels with 45 years in cinema and now on the faculty of EICAR in Paris) as an AI coach for screenwriting. Its design is consistent with the evidence above (the system was built before we reviewed that evidence), and the rules are written into the system prompts rather than left to the model. The student must write before any feedback exists (a scene of at least 50 characters or an exercise of at least 20). The system prompt tells the model it is "Socratic, not didactic" and that it must "never write their script or story for them". Suggestions are withheld from strong work ("a strong submission needs no hand-holding"). Feedback comes per dimension and in words and ends with the student's next step. The system runs in fifteen languages, eleven of them official EU languages (the other four are Russian, Turkish, Latin-American Spanish and Brazilian Portuguese). Each carries its own national-cinema curation of 24 films (360 in all) analysed natively rather than translated – so a Hungarian student meets Hungarian cinema in Hungarian. In September 2026 the staff who coordinate student film productions at EICAR (a school of about 1,500 students) received accounts and asked to test the system.

Paco Wiser writes: "What I wanted to avoid was telling users how they must write or write in their place. On CineCoach.paris, they will find no dogmatic manuals or ready-made formulas meant to smooth over the rough edges of their stories. My goal is neither to standardize creativity nor to confine users' imagination within rigid rules that might discourage them. CineCoach.paris offers a rigorous yet supportive framework designed to fuel users' creative fire, help them push past their doubts, and encourage them to bring powerful, unique, and deeply vibrant worlds to the screen, rooted in their own experience, creativity, and imagination."

What we do not claim. The product runs on a United States foundation model (with a second US model as fallback). The European layer is the expertise, the languages, the curations and the governance. The model is replaceable. We take that to be the practical meaning of European digital cultural sovereignty: European foundation models exist (Mistral AI in Paris among them) and we intend to test them, but a model-residency rule imposed today would exclude many working European tools, including ours, while sovereignty over the curation, the pedagogy, the languages and the governance of data is achievable now and is not substitutable. Our usage data are far too small to support outcome claims – a few dozen real users at the time of writing. No published study (ours included) has yet tested a questioning AI on a creative task with a delayed and unaided outcome. The one direct test of a strategy-giving AI coach found that it left users worse off on later unaided divergent thinking than no AI at all (Kumar et al. 2024) – whether questions anchored in the person's own work avoid that loss is untested, and it is the hypothesis such a study would test. A study with informed consent is being designed with EICAR to produce that evidence, and the product needs a research-consent flow before it can run. The working paper lists the gaps.

CONCLUSION

AI is a tool and a powerful one. Used wrongly it will reduce human creativity – the evidence for that is already in (in meta-analysis, in field data from four million artworks and in examination rooms). Used rightly it will augment and accelerate it – and that evidence is in too. Films from Europe have won most of the Academy Awards for international features and most of the Palmes d'Or – what Europe needs from AI is the making of filmmakers, and composers, and designers, in all 24 of its languages. CineCoach is one European example, built in France from a French master's teaching. There should be many. We urge the Commission to score the augmenting design in its support for artist-facing tools, and to require every funded system to say which design it is – so that the next generation of European artists use AI the way they use a camera or a piano, as an instrument of their own voice.

THREE RECOMMENDATIONS

1. **Fund the design, not the technology.** Score "augments the artist's own generation rather than producing the artefact" in calls for artist-facing AI in education and training, and require every funded creative-AI system to state which design it implements. Our own system would score well on this, and the reader should weigh the recommendation with that interest in mind.
2. **Measure diversity as an outcome.** Require publicly funded creative AI to report the diversity of outputs across users and languages, and publish the results.
3. **Put the tools under the schools.** Fund artist-facing AI in film schools and conservatoires through the institutions, with faculty control of the pedagogy, rather than through licences to general-purpose products.

Where the European AI Act already helps. Article 50 has required since 2 August 2026 that a person be told they are dealing with an AI system. The disclosure should say which of the two designs the system is, because that is what decides whether the artist keeps ownership of the result. Point 3(b) of Annex III already treats a system that evaluates learning outcomes in a school as high-risk, with obligations deferred to 2 December 2027 by Regulation (EU) 2026/1744, and Article 4 has placed an AI literacy duty on schools as deployers since 2 February 2025. The strategy can build on all three rather than start from nothing.

Sources. Agarwal, Naaman and Vashistha 2025, CHI, doi 10.1145/3706598.3713564 · Bastani et al. 2025, PNAS, doi 10.1073/pnas.2422633122 · de Rooij and Biskjaer 2026, OSF preprint, doi 10.31234/osf.io/rz5s4_v1 · Holzner, Maier and Feuerriegel 2025, arXiv 2505.17241 · Hou et al. 2025, Information Systems Research, doi 10.1287/isre.2024.0937 · Kluger and DeNisi 1996, Psychological Bulletin, doi 10.1037/0033-2909.119.2.254 · Kumar, Vincentius, Jordan and Anderson 2024, arXiv 2410.03703 · Maier, Schneider and Feuerriegel 2025, arXiv 2510.23324 · Seli et al. 2025, Psychology of Aesthetics, Creativity, and the Arts, doi 10.1037/aca0000743 · Wisniewski, Zierer and Hattie 2020, Frontiers in Psychology, doi 10.3389/fpsyg.2019.03087 · Zhou and Lee 2024, PNAS Nexus, doi 10.1093/pnasnexus/pgae052. European facts: Academy Awards and Palme d'Or counts summed from the by-country tallies as compiled in Wikipedia, accessed 28 August 2026 (the Academy tally counts country credits, so 79 credits correspond to 78 awards given; the European subset is the 27 present Member States with their predecessor states in the tables, namely West Germany, East Germany and Czechoslovakia; the primary records are the Academy's awards database and the Festival de Cannes archive, which the compilations cite) · Eurostat, Culture statistics: cultural employment, data extracted June 2026 · European Commission DG GROW, Cultural and creative industries · Deloitte, Global Powers of Luxury Goods 2023 · European Union, Languages · Special Eurobarometer 562 (2025), doi 10.2766/4514147 · European AI Act, Regulation (EU) 2024/1689, eur-lex.europa.eu/eli/reg/2024/1689/oj. Full review with method and limits: <https://doi.org/10.5281/zenodo.22514980>.