Diagnosing AI adoption among Arts and Multimedia students: insights from Viseu School of Education, Portugal

Marlene Ribeiro[1,2], Paula Azevedo Rodrigues[1, 3], Catarina Carneiro de Sousa[1,3], Sofia Figueiredo[1,3]

[1]Polytechnic Institute of Viseu, School of Education, Portugal
[2]ID+ Research Institute for Design, Media and Culture, University of Aveiro, Portugal
[3]CI&DEI Center for Studies in Education and Innovation, Portugal

Abstract

The rapid integration of generative artificial intelligence (AI), particularly within artistic practices, challenges established pedagogical paradigms [1] and reinforces transformations associated with the post-digital condition [2]. Ethical concerns persist regarding originality, authorship, and the reconfiguration of creative labour [3]. At the level of international policy, both the EU AI Act [4] and the OECD Digital Education Outlook [5] emphasise responsible AI integration in education, highlighting transparency, risk management, and the development of AI literacy as strategic priorities for higher education institutions.

This paper presents an exploratory diagnosis of AI adoption among students enrolled in the Arts and Multimedia degree at the Viseu School of Education, Portugal. Drawing on survey data collected in October 2025 (n=90), the study analyses usage patterns, domains of application, levels of confidence, and student perceptions regarding AI tools. Results indicate that the majority of students (57,8%) who use AI (n=53) integrate it primarily through self-directed initiative, with pronounced use in image generating or editing, programming support and colour palette definition. Participants report moderate confidence in selecting appropriate platforms and acknowledge a strong perceived need for external guidance. Perceptions are markedly sceptical regarding AI reliability for decision-making and data privacy, while students strongly agree that AI tends to produce stereotyped images.

In the context of research on AI in higher education [6] and current international regulatory frameworks, this study argues that the integration of AI in arts education cannot be guided solely by technological trends. The definition of effective pedagogical strategies must be grounded in a situated understanding of student practices and perceptions and crucially, in the recognition that ease of use does not imply critical engagement. Diagnosing student perceptions thus emerges as a necessary first step toward aligning technological innovation, ethical responsibility, and AI literacy within contemporary arts education.

Keywords: *Artificial Intelligence; Creativity; Fine Artes; Multimedia; Higher Education, AI Literacy*

1. Introduction

What schools should teach today is a question that remains ever-relevant and of vital importance. The challenges posed by the widespread use of generative artificial intelligence in everyday life and in the learning practices of higher education students raise urgent questions across all disciplines. We are interested in the specific case of education in Arts and Multimedia, where issues such as authorship, originality, creativity and graphic identity are not resolved through efficiency or process optimisation, but involve core disciplinary values such as the meaning of learning trough making, the relationship between intention and artefact, and the cultivation of aesthetic judgement [1]. As Siagian et al. [3] emphasise, generative AI raises critical questions regarding the attribution of creative work and the dilution of individual artistic contribution; these tensions become even more complex when considered in light of the ambivalent attitudes that the students themselves, artists in training, express towards AI as a creative agent [7].

International regulatory frameworks such as the EU AI Act [4], the OECD Digital Education Outlook [5] or the European Commission's Ethical Guidelines on the Use of Artificial Intelligence (AI) and Data in Teaching and Learning for Educators [8], identify AI literacy as a strategic priority for higher education, emphasising the need for responsible adoption that encompasses critical awareness, ethical reasoning and practical competence. However, these frameworks are necessarily generic, and their translation into situated pedagogical practice requires empirical grounding to understand who uses AI, how, and

with what perceptions and expectations. It is precisely in this gap that we find the relevance of this contribution.

This article presents an exploratory assessment of AI adoption among students on the Bachelor's degree in Art and Multimedia at the Polytechnic Institute of Viseu, School of Education, in Portugal. Data were collected via a survey in October 2025 (n=90), covering the three academic years of the degree programme. The aim is not to evaluate the tools themselves, but to understand the current landscape of students' practice as a basis for informed and responsible pedagogical interventions, in line with the call by Zawacki-Richter et al. [6] for evidence grounded in situated practices.

The article is organised as follows: Section 2 situates the study within the theoretical and political debates on AI in arts education; Section 3 describes the methodology; Section 4 presents the results; Section 5 discusses the results in dialogue with the literature; Section 6 concludes with implications for pedagogical practice and directions for future research. In a study that draws on an examination of students' practices and perceptions, it seemed appropriate to us that their voice should also be present in the structure of the text. It is from this voice that the central argument emerges: students describe AI as simultaneously 'convenient' and 'potentially disempowering', a tool which, whilst facilitating processes, can weaken critical thinking.

2. Theoretical Background

2.1 AI and Arts Education: Between Tool and Co-Creator

The post-digital condition, as theorised by Conrad, Leijsen and Héritier [2], describes a cultural state in which digital technologies are no longer perceived as a novelty but have become part of everyday creative practices. The emergence of generative AI represents a profound shift in how artists and students collaborate with technology, one that they are called upon to reflect upon. By producing probabilistic results derived from vast training datasets, AI tools position themselves not as neutral instruments, but as co-creative agents with their own aesthetic tendencies and cultural biases, a dimension which, as we shall see, the students themselves identify and problematise.

Fleischmann [1] documented these tensions within the context of graphic design education, showing how generative AI introduces significant conflicts between technological availability and disciplinary identity. For art students, the issue is not merely learning to use a new tool, but negotiating what it means to be an author, what distinguishes an aesthetic decision from an algorithmic suggestion, and to what extent the creative process can be delegated without losing meaning.

2.2 To Make or to Generate? Tensions in Visual Arts

Questions regarding authorship, what makes a work original, or what distinguishes creation from reproduction, have long been central debates in the visual arts, and the integration of generative AI has reignited them. As Siagian et al. [3] point out, generative AI raises critical questions about the attribution of creative work and the dilution of individual artistic contribution. When a student uses a generative system to obtain an image, define a colour palette or generate code, the *locus* of creativity becomes ambiguous, with direct implications for the formation of their expressive artistic identity and, considering the educational context, for the assessment criteria that should be prioritised to ensure academic integrity.

This ambiguity often manifests in technical domains before becoming apparent in aesthetic ones, but tends to spread throughout the entire project. When students turn to AI to solve programming problems, as the data from this survey document shows, they often do so without questioning the extent to which this technical delegation influences subsequent creative decisions. Latikka et al. [7] demonstrated widespread acceptance of the use of AI for technical optimisation across various fields of knowledge and activity, but the closer the use of AI comes to the core of creative practice in the arts, the less positive its acceptance becomes, with greater value placed on human creative intelligence and artistic expressiveness.

Making implies intentionality, embodiment, iteration, the resistance of the material, learning from error, the integration of error, and discovery during the creative design process. Generating implies prompting, selection and curation, which are real skills, but of a distinct nature. Generative systems also tend to reproduce the dominant patterns of their training data, producing results that mirror established aesthetic conventions, a tendency towards visual stereotyping that the data from this study confirm and which diminishes the possibility of a plural visual culture. The pedagogical question is not which of the two practices is superior, but whether students develop an awareness of the difference and the ability to

move between them with critical discernment, which leads us to the need to develop, with the students, the ability to identify, understand, interpret, create and communicate.

2.3 AI Literacy and Regulatory Frameworks

The concept of AI literacy refers to the set of skills that enable people to critically understand AI technologies and use them in an informed manner in different contexts of life and work [9]. This is a concept that goes beyond technical competence: it involves critical, ethical, and reflective dimensions that are particularly relevant in arts education, where easy access to tools does not guarantee a critically situated use.

In the European context, the European Commission's Ethical Guidelines [8] serve as a reference framework for the responsible use of AI in education. The document identifies four fundamental ethical considerations—human agency, equity, humanity and justified choice—and proposes a set of emerging competences for educators, organised into six domains, ranging from professional engagement to facilitating students' digital competence. It is important to highlight from this guidance document that the most advanced AI systems do not assess collaboration, social skills, or creativity, a gap of relevance to arts education. The EU AI Act [4] reinforces this framework through risk-based governance, explicitly requiring users of AI systems to ensure adequate levels of literacy. The OECD Digital Education Outlook [5] expands on this agenda at a systemic level, calling for pedagogical approaches that are not only technical but also ethical and critical, and recognising that the widespread adoption of generative AI poses specific challenges to which higher education institutions have not yet responded adequately.

A common denominator to these three frameworks, however, is their necessarily generic nature. The systematic review by Zawacki-Richter et al. [6] demonstrated that existing research on AI in higher education is dominated by perspectives from computer science and STEM fields, with a very limited presence of authors from education departments. The authors conclude that there is a critical lack of pedagogical and ethical reflection on the implementation of AI and call for research centred on the situated practices of students and educators. It is precisely this gap that the present study addresses: the need to understand students' uses of AI, what they perceive, and where they feel they need guidance. The empirical analysis that follows is based on this premise.

3. Methodology

This study adopts an exploratory and descriptive research design, combining quantitative data with open-ended responses of a qualitative nature. The exploratory approach reflects the diagnostic purpose of the study, which is to generate a situated understanding (at the Polytechnic Institute of Viseu, School of Education) of the adoption of AI among a specific student population (students in the third year of the bachelor's degree in art and Multimedia), without seeking to test pre-established hypotheses.

The data collection instrument was a structured questionnaire, developed specifically for this study and made available online in Portuguese via the Google Forms platform in October 2025. The questionnaire was preceded by an informed consent form, with participation being voluntary and anonymous. It was organised around six dimensions: 1) identification of academic year and prior experience with AI in the visual arts; 2) contexts, types of use, platform preferences and modes of access; 3) perceptions of AI within the visual arts; 4) frequency of use for personal and academic projects; 5) self-perceived autonomy in the use of AI; 6) overall opinion on the use of AI in three words. Responses were of the open-ended, closed-ended, and five-point Likert scale types.

The questionnaire was administered in a classroom setting to all students present at the respective sessions, one per academic year, with one of the co-authors always present. The total number of respondents (n=90) is distributed across the three academic years of the study programme.

The analysis of quantitative data was based on descriptive statistics, including frequencies, percentages, and measures of central tendency for the Likert scale items. The open-ended responses were subjected to content analysis with inductive thematic categorisation. Given the exploratory and diagnostic nature of the study, no inferential tests were applied.

4. Findings

4.1 Adoption Profile: Prevalence, Platforms and Contexts

The 90 students surveyed are distributed across the three academic years of the programme as follows: 40.0% are in the first year (n=36), 38.9% in the second year (n=35), and 21.1% in the third year (n=19).

Of the 90 participants, 58.9% (n=53) stated that they use or have used AI in the context of the visual arts, constituting the *corpus* for the analysis. Analysing the figures by academic year, the majority of occasional users coexist, however, with a minority of occasional users who have no experience of using these tools, suggesting that adoption, although widespread, is neither universal nor uniform.

Table 1. Students use of AI in Visual Arts.

Academic Year	Number of Responses		Students use of AI in Visual Arts			
	(n=)	(%)	Yes (n=)	Yes (%)	No (n=)	No (%)
Year 1	36	40,0%	15	41,7%	21	58,3%
Year 2	35	38,9%	22	62,9%	13	37,1%
Year 3	19	21,1%	16	84,2%	3	15,8%
Total	**90**	**100%**	**53**	**58,9%**	**37**	**41,1%**

Regarding the contexts in which AI is used in the visual arts, the questionnaire identified formal contexts in pre-university and university education, whether at the teacher's suggestion or on the students' own initiative, as well as its use for personal artistic projects. The responses point to a predominance of self-directed use by students. It is considered significant that first-year students who report using AI demonstrate a practice that was established during their high school education. As the survey was conducted at the start of the academic year, the use of AI by these first-year students is not guided by relevant higher education lecturers; however, second- and third-year students provide good indicators of the integration of AI into the teaching practice of lecturers in the Art and Multimedia degree programme. In the context of independent use of AI within the degree programme, students demonstrate increasing confidence over the course of the three-year programme, a confidence that can also be interpreted as dependence.

Table 2. Contexts in which students use AI in the Visual Arts.

Academic Year	Contexts in which students use AI in the Visual Arts									
	In secondary education, recommended by a teacher		In secondary education, on my own initiative		In current degree programme, recommended by a teacher		In current degree programme, on my own initiative		For personal art projects	
	n=	%	n=	%	n=	%	n=	%	n=	%
Year 1 (n=15)	9	60,0%	10	66,7%	2	13,3%	7	46,7%	8	53,4%
Year 2 (n=22)	2	9,1%	6	27,3%	10	45,5%	14	63,6%	10	45,5%
Year 3 (n=16)	2	12,5%	1	6,3%	7	43,8%	12	75,0%	8	50,0%
Total (n=53)	**13**	**24,5%**	**17**	**32,1%**	**19**	**35,9%**	**33**	**62,3%**	**26**	**49,1%**

Among student users, access is almost exclusively via free versions of generative AI platforms (94.3%), with ChatGPT clearly dominating the open-ended responses (notably for programming purposes, as we shall see in 4.2). Of the 46 validated responses, 44 mention the use of ChatGPT (95.7%), 27 of which exclusively (61.4%). These are followed by the platforms Gemini (18.2%), DeepSeek (6.8%), Adobe Firefly / Adobe AI (6.8%) and, to a lesser extent, BLACKBOX AI, Leonardo AI, Luma AI, ElevenLabs, Suno, Hyper3D and, for learning support or the distribution of AI resources, KnowUnity and CivitAI. Although several generative AI platforms were identified, the concentration on a general-purpose platform (ChatGPT), accessed in its most limited version, indicates that the diversity of creative AI tools available remains largely unexplored by students.

4.2 Domains of Practice: What Students Actually Do

To analyse the types of tasks for which students identified the use of AI within the field of Visual Arts (n=53), the data was collated from multiple-choice and open-ended responses, resulting in eight tasks: Programming; Generating or Editing Images; Defining Colour Palettes; Generating or Editing Audio; Generating or Editing Video; Generating 3D Models; Researching a Topic; Summarising / Improving Text. Each task is examined in terms of the total number of references made by students and then

organised by academic year. The analysis shows that Generating or Editing Images is the most frequently cited application area, having been mentioned by 26 students (49.1%). This is followed by the task of Programming with 24 references (45.3%) and Defining Colour Palettes with 16 entries (30.2%). Researching a Topic was mentioned 12 times (22.6%) and Summarising / Improving Text received 8 responses (15.1%). The domains Generating or Editing Audio, Generating or Editing Video and Generating 3D Models recorded considerably lower figures, ranging from 9.4% to 5.7%.
Analysis by academic year shows that students increase their use of AI throughout their studies, accounting for 27.3% in the first year, 33.3% in the second year and 39.4% in the third year. This progression is consistent with the evolution of the Art and Multimedia curriculum, given that the modules gradually introduce new or more complex skills and areas of application, creating a need to explore different domains of AI use.
The greatest percentage increase in usage across the three academic years is seen in Programming (+464%), suggesting that at the time of the questionnaire, first-year students had not yet explored this area (only 13.3%), in contrast to third-year students, among whom the identification of usage is widely shared (75.0%).
A comparison of AI use by the types of tasks identified by students and the platforms they use suggests that its application remains predominantly technical in nature, rather than manifesting as a tool for aesthetic or creative exploration. The disciplinary contexts confirm this trend; the most frequently cited subjects are technical in nature, followed by theoretical subjects where AI is used to support writing and research. Its use in traditional artistic practice contexts, such as drawing or painting, remains minimal.

Table 3. Types of tasks for which students identified the use of AI in the Visual Arts.

Academic Year	Types of tasks for which students identified the use of AI in Visual Arts															
	Programming		Generating or Editing Images		Defining Colour Palettes		Generating or Editing Audio		Generating or Editing Video		Generating 3D Models		Researching a Topic		Summarising / Improving Text	
	n=	%	n=	%	n=	%	n=	%	n=	%	n=	%	n=	%	n=	%
Year 1 (n=15)	2	13,30%	10	66,70%	3	20,00%	1	6,70%	3	20,00%	2	13,30%	5	33,30%	1	6,70%
Year 2 (n=22)	10	45,50%	10	45,50%	6	27,30%	1	4,50%	1	4,50%	0	0,00%	3	13,60%	2	9,10%
Year 3 (n=16)	12	75,00%	6	37,50%	7	43,80%	1	6,30%	1	6,30%	3	18,80%	4	25,00%	5	31,30%
Total (n=53)	**24**	**45,30%**	**26**	**49,10%**	**16**	**30,20%**	**3**	**5,70%**	**5**	**9,40%**	**5**	**9,40%**	**12**	**22,60%**	**8**	**15,10%**

4.3 "Practical but Addictive"

To gauge students' perceptions of their preparedness and the impact on the outcomes of AI-based projects, we included a section of questions using a Likert scale and a final open-ended question. Most responses reveal the students' ability to take a critical stance, which tends to be positive, although some contradictions are evident.
As for work efficiency, opinions are mostly distributed around the middle of the scale (43.4%), but if we combine the most optimistic ratings (4 and 5 points), we account for 86.8% of the responses.
Conversely, regarding privacy and data protection, students are divided between the scepticism of the middle of the scale (34%) and the pessimism of the lower ratings (1 and 2 points), accounting for a total of 92.5% of responses.
Students reject reliance on AI for making important decisions (Mo=1) through a significant negative rating (1 and 2 points) of 79.2%, and are unanimously critical in the aesthetic and conceptual domains, with the production of stereotypical images garnering agreement from 66.1% (scores of 4 and 5 with Mo=5) of respondents, suggesting that direct experience of using AI in the visual arts fuels, rather than dampens, critical thinking.
The need for external help is the statement with the most dispersed distribution (32.1% of responses are at points 1 and 2, 15.1% in the middle of the scale and 50.9% at points 4 and 5) and the one that contrasts most with the perceived ease of use (79.3% of students state they have no difficulty in understanding or using AI). This tension between the ease of understanding and using AI and the reliance on support for informed and efficient use is analytically relevant, particularly for pedagogical guidance, as it demonstrates that students feel prepared to perform simple AI-assisted tasks but require guidance for uses involving a higher degree of complexity.

In the open-ended responses, phrases such as “practical but addictive”, “innovative but worrying”, and “useful but destructive” succinctly capture the structural ambivalence that runs through these students’ entire relationship with AI.

5. Discussion

The results of this study show that Art and Multimedia students at the Polytechnic Institute of Viseu, School of Education use AI in a self-directed manner, focusing on a general-purpose platform in its free version, and progressively throughout their course of study.

The most significant finding regarding adoption patterns is that 95.7% of users rely on ChatGPT (61.4% exclusively), with 94.3% using the free version, in line with the findings of the study by Pontes et al [10] for students up to the age of 17. A general-purpose platform accessed in its most limited version does not equate to a diverse ecosystem of creative tools. The diversity of specialised tools for generating or editing images, audio and video, generating 3D models, Programming, and other tasks, remains largely unexplored, indicating that these students do not yet possess AI literacy in the sense defined by Long and Magerko [9]; that is, they do not yet demonstrate the ability to select, evaluate and critically use a diverse range of tools in accordance with specific objectives.

The entry of AI through the technical domain is the second relevant point for this discussion. Programming shows the greatest variation in use across academic years (+464% from the first to the third year), although this is consistent with the development of the curriculum. However, in a course where technique and expression are inseparable, this trajectory is not neutral. The delegation of coding decisions conditions, even if imperceptibly, subsequent creative decisions, a continuity that the post-digital condition helps to frame. In this regard, Conrad, Leijsen & Héritier [2] note that technical and aesthetic tools have never been so closely intertwined, but it is important to recall Latikka et al. [7], who demonstrate that public acceptance of AI is lower the closer it is to the creative decision.

Of relevance to future pedagogical implications is the dissociation between ease of use and informed critical capacity. Most students do not consider AI difficult to use but acknowledge needing guidance for efficient use and express only moderate confidence in choosing platforms.

It is worth highlighting the consistency of the assessment regarding the visual stereotypical nature of AI-generated images, which is consistent with what Siagian et al. [3] identify as the tendency of generative systems to reproduce dominant patterns from training data, thereby undermining the possibility of a pluralistic visual culture. Students are critical and sceptical regarding the adoption of AI in their artistic practice, using it with reservation, an approach that is in line with the recommendations identified as appropriate by the EU AI Act [4] and the European Commission’s Ethical Guidelines [8].

6. Conclusions

This study presented an exploratory analysis of AI adoption among Art and Multimedia students at the Polytechnic Institute of Viseu, School of Education, Portugal, which demonstrated that AI adoption is well established (n=53, corresponding to 58.9% of the total number of students surveyed, n=90) and that it occurs predominantly in a self-directed manner. The progression of students using AI within the Visual Arts, from 41.7% in the first year to 84.2% in the third, documents not an emerging trend, but an ongoing transformation to which the degree programme and the institution will need to find an appropriate response.

The implications are concrete. The institutional response should not focus on the basic introduction of the tools, which students already use, but on creating the conditions for a broader, more critical, and discipline-specific use. This implies explicitly incorporating AI literacy into the curriculum, expanding the technological ecosystem to which students have access, and recognising the scepticism students demonstrate as a pedagogical starting point, not as resistance to be overcome, in line with the priorities, recommendations and international guidelines of the OECD and the EU. The study has limitations that must be acknowledged, starting with the sample being limited to a single institution and level of study, a cross-sectional and descriptive design, and a time frame that the speed of technological evolution quickly renders outdated. Future research would benefit from longitudinal approaches, comparisons across institutional contexts, and intervention studies that evaluate specific pedagogical strategies for AI literacy in arts education.

In summary, what this study suggests is simple yet demanding: before deciding what to teach about AI, it is necessary to listen to what students already know, already do, and already question. It is from this listening that an informed, critical pedagogical strategy can emerge, one that counters the reactive stance of teachers to become proactive.

Acknowledgements

This work is funded by national funds through FCT – Fundação para a Ciência e a Tecnologia, I.P., under the project/support UID/04057/2025, https://doi.org/10.54499/UID/04057/2025. ID+ Research Institute for Design, Media and Culture.
The authors would like to express their gratitude to the students who responded to the AI in VA – Artificial Intelligence in the Visual Arts questionnaire.

REFERENCES

[1] Fleischmann, K. (2024). Generative Artificial Intelligence in Graphic Design Education: A Student Perspective. Canadian Journal of Learning and Technology, 50(1). https://doi.org/10.21432/cjlt28618
[2] Conrad, D., Leijsen, R. van, & Héritier, D. (2021). Graphic design in the post-digital age: a survey of practices fuelled by creative coding. Onomatopee & HEAD – Genève (HES-SO).
[3] Siagian, R. L., Aisyah, S., Marbun, E. Z., Saitapy, M., & Febriani Banjarnahor, Y. (2024). Analysis of the Impact of Artificial Intelligence Technology on Art Elements and Originality Aspects of Graphic Design State Polytechnic of Creative Media. International Journal of Information System & Technology Akreditasi, 8(4), 233–239.
[4] Regulation (EU) 2024/1689 of the European Parliament and of the Council of 13 June 2024 Laying down Harmonised Rules on Artificial Intelligence (Artificial Intelligence Act). Official Journal of the European Union. http://data.europa.eu/eli/reg/2024/1689/oj
[5] OECD. (2026). OECD Digital Education Outlook 2026: Exploring Effective Uses of Generative AI in Education. OECD Publishing, Paris. https://doi.org/10.1787/062a7394-en
[6] Zawacki-Richter, O., Marín, V. I., Bond, M., & Gouverneur, F. (2019). Systematic review of research on artificial intelligence applications in higher education – where are the educators? International Journal of Educational Technology in Higher Education, 16(39). https://doi.org/10.1186/s41239-019-0171-0
[7] Latikka, R., Bergdahl, J., Savela, N., & Oksanen, A. (2023). AI as an Artist? A Two-Wave Survey Study on Attitudes Toward Using Artificial Intelligence in Art. Poetics, 101. https://doi.org/10.1016/j.poetic.2023.101839
[8] European Commission, & Directorate-General for Education Youth Sport and Culture. (2022). Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators. Publications Office of the European Union. https://doi.org/doi/10.2766/153756
[9] Long, D., & Magerko, B. (2020). What Is AI Literacy? Competencies and Design Considerations. In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (pp. 1–16). ACM. https://doi.org/10.1145/3313831.3376727
[10] Ponte, C., Batista, S., & Luna, E. (2026). Crianças e jovens (9-17 anos) e Inteligência Artificial Generativa em Portugal. Resultados nacionais dos estudos EU Kids Online, 2025. EU Kids Online. https://eukidsonline.fcsh.unl.pt/jovens-e-inteligencia-artificial-generativa-em-portugal/