

Orchestrating an AI-Supported Instagram Project as a Teacher

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Abstract

This qualitative case study examines how a teacher orchestrated generative AI within an authentic, public-facing task, using a secondary-education classroom as a micro-laboratory with transfer potential to higher education and initial teacher education. Over seven lessons in a Digitalisation course (15–16-year-olds), students used ChatGPT to support the design of Instagram infographics and captions under explicit rules for verification, rewriting and responsible use. Evidence from teacher planning/diary notes, rubric-based assessment, and students' open reflections (N = 30; thematically coded) shows that governance and ethics can be made visible through structured scaffolding, moderation choices, and assessment. Findings are synthesised into a practice-oriented four-phase orchestration model: (1) risk mapping, (2) task and prompt design, (3) live orchestration, and (4) assessment and reflection. We discuss implications for designing authentic tasks, assessment, and the governance of generative AI in higher education and teacher preparation.

Keywords: ChatGPT; Social Media; Education; AI; Pedagogical strategies.

1. Introduction

In recent years, digital tools have reshaped educational practice, supporting new forms of learning, assessment and classroom interaction. This transformation has also increased the need for students and teachers to develop robust digital competences and to reflect critically on ethical technology use (Aguirre-Aguilar et al., 2024). Within this broader shift, generative AI has emerged as one of the most disruptive developments, enabling the rapid creation of text and other artefacts from human prompts, with clear educational opportunities but also substantial risks (Camacho et al., 2023; García, 2023).

The introduction of ChatGPT and related tools has therefore produced mixed responses. On the one hand, generative AI can support writing, ideation and autonomous learning; on the other, concerns have been raised about overreliance, plagiarism, and the erosion of critical thinking (Mateus et al., 2024; Morán-Ortega et al., 2024; Pavlovic et al., 2024). Beyond these student-facing debates, a less visible challenge is how teachers design, regulate and ethically implement AI-mediated activities, particularly when tasks involve public-facing platforms such as social media, where issues of visibility, privacy and responsibility intensify.

This paper addresses that gap by examining a teacher's orchestration of an AI-supported Instagram project implemented in secondary education. The case is intentionally treated as a micro-laboratory: although situated in a digital literacy course with 4th-year students, it is analysed to extract transferable implications for higher education teaching and initial teacher education, especially regarding authentic task design, assessment practices, and the governance of generative AI use in the classroom.

This paper is structured as follows: Section 2 reviews related work on AI-supported learning and teacher orchestration; Section 3 summarises the curricular and contextual framing of the intervention; Section 4 reports the findings organised by the four orchestration phases; and Section 5 discusses limitations and conclusions.

2. Related work

Research on AI in education has largely emphasised student outcomes and digital competences, while the teacher's orchestration work—aligning AI tools with pedagogical aims, curricular constraints, and ethical requirements—remains comparatively underexplored (Uygun, 2024). Prior work suggests that effective use of AI depends on teacher agency and professional judgement to ensure that AI outputs remain meaningful, accurate, and ethically sound (Chiu & Chai, 2020; Lamas & Arnab, 2021). In higher education, orchestration frameworks have been proposed to manage AI-based tools within assessment and curriculum constraints (Lawrence et al., 2024), but these accounts rarely address secondary settings, where time constraints, safeguarding duties, and public visibility concerns can be more acute.

Recent studies on ChatGPT and other LLMs report benefits for ideation and communication when guided, but also highlight risks such as overreliance, superficial learning, authorship ambiguity, and misinformation. Yet, empirical descriptions of how teachers plan, adapt, and govern AI-supported projects involving public-facing platforms, where privacy, moderation, and accountability intensify, remain scarce (Alexandrowicz, 2024). Scholars further argue that teachers must act as ethical mediators who translate data governance and digital citizenship into classroom practices, although documentation of how these principles are operationalised in planning and design is limited (Ismail et al., 2024; Kasepalu et al., 2022).

Accordingly, this paper contributes an empirically grounded, reusable four-phase orchestration model derived from an AI-supported social media project.

3. Curricular context

This study is situated within Spain's competence-based curriculum. Royal Decree 217/2022 foregrounds key competences such as Digital Competence and grants schools autonomy to implement pedagogical innovation (Ministerio de Educación y Formación Profesional, 2022). The intervention took place in the *Digitalisation* subject (15–16-year-olds) and targets transferable aspects of Digital Competence relevant to AI-supported, public-facing tasks: digital content creation, online safety and wellbeing, and critical digital citizenship. In this framing, generative AI use and social-media communication are treated as legitimate objects of guided instruction rather than “extra” activities.

Within this context, students completed a seven-lesson authentic, collaborative project producing Instagram infographics and short captions on scientific topics, using ChatGPT under explicit rules for verification, rewriting, and responsible use. These expectations translated into concrete requirements: evidence-aware communication, critical revision of AI outputs, and responsible decision-making around privacy and authorship. Accordingly, competence and safeguarding expectations informed risk mapping, task and prompt design, live orchestration, and assessment and reflection, justifying the organisation of findings through the four-phase orchestration model presented next.

4. Findings: Teacher Orchestration in Practice

4.1. Planning and risk mapping

The project was conceived as a micro-laboratory for transferable practice: although implemented in secondary education, the intent was to test how a teacher can govern the use of generative AI in an authentic task and extract principles applicable to higher education and initial teacher education. The teacher's diary indicates that the initial goal was to shift students' relationship with AI away from an implicit “shortcut” towards an explicit learning object: understanding limitations, recognising when outputs fail, and developing criteria for responsible use.

This expectation coexisted with a structured risk mapping process. Four risks shaped early orchestration decisions. First, the risk of superficial AI dependence (copy–paste behaviour without comprehension or reworking), which would undermine competence-oriented learning. Second, the risk of public exposure associated with social media: although posts contained no personal identifiers, publication could still invite undesirable interaction. Third, workload risk:

the teacher anticipated high time demands for designing scaffolds and rubrics, aligning the task with learning goals, supervising approximately 30 students using AI and Instagram, and checking posts prior to publication. Fourth, legitimacy risk: possible resistance from families or colleagues who might interpret the project as normalising AI and social media rather than teaching responsible use.

These risks were documented not only as internal concerns but also through external reactions recorded in field notes. For example, one family comment expressed scepticism about the educational value of AI work: *“I don’t understand why you explain this to them when they should be learning useful things for their future, not this that does everything.”* (translated from Spanish). Similarly, peers’ stances ranged from curiosity to prohibition: *“It’s good they learn these things... I’m thinking of doing something with them too”* versus *“I’ve banned it; when they’re older they can do what they want.”* (translated from Spanish). These inputs were treated as part of the orchestration landscape: rather than ignoring them, the teacher used them to justify the need for explicit governance—framing the project as a guided approach to tools that students would encounter regardless of school policy.

Finally, tool selection was anchored in authenticity. Instagram was chosen as a familiar communication space for students, and ChatGPT as a widely accessible general-purpose AI tool. This combination was intentionally used to surface tensions that are also present in higher education: how to integrate AI into real tasks without reducing learning to automation; and how to govern public-facing work responsibly.

4.2. Task and prompt design

Task design operationalised a simple but demanding rule: AI could support ideation and drafting, but the final product had to demonstrate human reworking, verification, and audience-aware adaptation. In this project, ChatGPT supported two connected outputs: (a) the generation and refinement of prompts for Instagram infographic images, and (b) the drafting and editing of short Instagram captions. The teacher modelled how prompt specificity affects output quality and required students to revise AI outputs rather than reproduce them.

Prompt scaffolding evolved markedly across sessions, as shown in Figure 1, shifting from broad, under-specified prompts that often yielded generic outputs to constrained specifications of format and structure (e.g., fixed layout, concise bullets, reading-time expectations), content requirements, and quality rules (clarity, legibility, and no logos/watermarks).

This prompt work was embedded within a project-based and cooperative structure. The shared product (a class Instagram account) required sustained collaboration across seven sessions, iterative improvement, and role distribution (e.g., prompt drafter, information checker, editor for clarity and tone, and caption writer). Flipped elements supported classroom time allocation: background inputs (AI limitations, online safety, and communication strategies) were

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introduced through prepared materials, while class time focused on guided production, critical review of drafts, and teacher feedback.

Students perceived the orchestration stance as a balance between permission and regulation. One student contrasted it with other classroom policies: “It’s cool that you teach us to use AI, because other teachers tell us it’s bad and that we shouldn’t use it.” (translated from Spanish). This perception is relevant for transferability: rather than treating AI as either forbidden or unrestricted, the design normalised supervised use with clear boundaries—an approach equally applicable in higher education contexts where blanket bans may encourage hidden use.

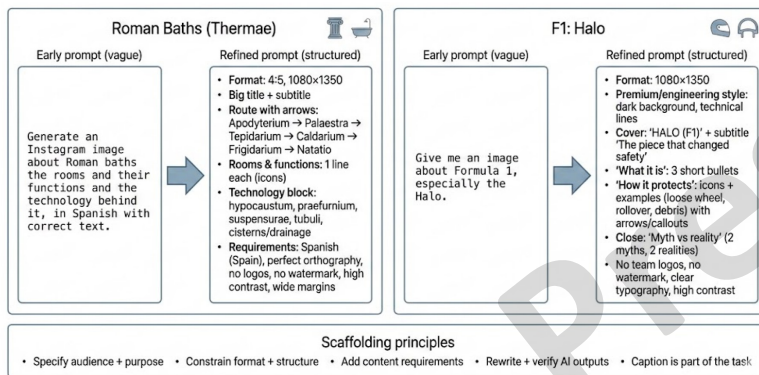


Figure 1. Prompt scaffolding examples (Roman baths and F1 Halo). Source: Own elaboration.

4.3. Live orchestration, workload and classroom dynamics

Live orchestration required continuous monitoring and real-time decision-making: identifying when groups drifted towards passive dependence on AI, prompting verification when outputs were questionable, helping students translate “essay-like” AI text into short, audience-oriented captions, and ensuring that posts adhered to agreed constraints (clarity, appropriate tone, and privacy-safe content). While the Instagram account was public for authenticity and motivation, governance measures were applied to reduce risk. Most notably, **comments were disabled for safety**, and posts were produced without faces, names, or identifiable data. The teacher retained administrative oversight and performed ongoing checks; in practice, no incidents were observed during the intervention.

This phase also revealed the human cost of orchestration. The teacher estimated approximately **30 hours** of preparation (planning, feasibility testing, alignment, materials, documentation) plus around **10 hours** across implementation and follow-up (seven in-class sessions plus additional checking and revision outside class). Emotional load was a recurring element of this phase: implementing a “risky” topic required responding to scepticism rooted in social narratives about AI (“it does everything”) and managing concerns about social media use in school, while

avoiding excessive restriction that could undermine students' sense of authenticity and ownership.

Despite this load, the teacher characterised the experience as demanding yet professionally rewarding, both for breaking classroom monotony and for producing a reusable model that can inform other teachers' practice. This "workload–reward" trade-off is central to the paper's contribution, because it highlights that successful AI integration depends as much on governance and orchestration capacity as on tool availability.

4.4. Assessment and reflection

Assessment was used to (i) make responsible AI use and digital citizenship observable and evaluable, and (ii) document whether an AI-and-social-media project could coexist with curricular performance in this case. Students were assessed with an analytic rubric across sessions 1–6 (Digital skills, Problem-solving, Participation, Collaboration, Commitment, Ethics & Responsibility) and a final presentation rubric in session 7 (Clarity & Organisation, Depth of Analysis, Communication Skills, Feedback Integration). Overall performance was satisfactory: the learning impact indicator averaged 7.3/10, final grades averaged 7.6/10, and ethical awareness showed the highest scores ($M = 8.1/10$). These descriptive results do not establish causal improvement (no pre-test or control group), but they indicate that, in this setting, an AI-mediated Instagram project was implemented without undermining assessed performance while keeping governance and ethics visible in students' behaviours.

End-of-project reflections were thematically coded, yielding four recurring themes: **critical checking of AI outputs**, **ethical awareness and online safety**, **autonomy vs productive dependence**, and **perceived transfer/future relevance**. Students repeatedly reported the need to verify and adapt outputs rather than copy them, noted that AI can be inaccurate or overly agreeable, and described prompt refinement (providing context and constraints) as a key skill. A smaller subset explicitly linked these practices to future academic and professional usefulness. Together, these reflections close the loop to transferability: they illustrate how the orchestration model operationalises responsible AI use through scaffolded tasks, moderation, and assessment—decisions that are applicable beyond secondary education, including higher education and initial teacher education.

5. Limitations and Conclusions

This study has limitations that constrain transferability and scalability. First, it reports a single qualitative case involving one teacher and one class group, with no external observers and no cross-coding, which limits triangulation of classroom dynamics, workload, and emotional load. Second, learning outcomes are described through rubric-based indicators and student reflections without pre/post measures, control groups, or longitudinal follow-up; therefore, findings should

not be interpreted as causal evidence of improvement. Third, the intervention demanded substantial teacher time (designing scaffolds and rubrics, aligning the task, monitoring AI use, and reviewing posts), making replication difficult without additional support. Finally, platform choices and governance decisions (e.g., a public Instagram account with comments disabled, anonymised posts, and low exposure) may not generalise to contexts with higher visibility, different moderation affordances, or alternative AI tools.

Despite these constraints, the case suggests that it is feasible to integrate generative AI and social media into a competence-oriented curriculum without apparent detriment to assessed performance in this group, while making ethical governance and critical AI use explicit objects of learning. Students' work and reflections suggest that they did not simply reproduce AI outputs, but engaged in rewriting, simplification, and adaptation for a real audience, alongside awareness of limitations (e.g., inaccuracy and over-agreeableness) and the need for verification.

The paper's main contribution is the reusable four-phase orchestration model (risk mapping; task and prompt design; live orchestration; assessment and reflection). Beyond secondary education, this model offers transferable implications for higher education teaching and initial teacher education: rather than relying on prohibition or unrestricted adoption, teachers can operationalise responsible AI use through clear rules, scaffolded prompting and revision, moderation choices, and assessment that values process and judgement.

Future work should examine how to reduce teacher workload (e.g., streamlined rubrics and reusable prompt libraries), test the model across educational levels (including higher education), and incorporate richer triangulation and longitudinal designs in more diverse contexts.

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References

- Aguirre-Aguilar, G., Esquivel-Gámez, I., Navarro, R. E., & Veytia-Buchelli, M. G. (2024). AI in the development of research skills in postgraduate studies. *Alteridad*, 19(2), 162–172. <https://doi.org/10.17163/ALT.V19N2.2024.01>
- Alexandrowicz, V. (2024). Artificial Intelligence Integration in Teacher Education: Navigating Benefits, Challenges, and Transformative Pedagogy. *Journal of Education and Learning*, 13(6), p346. <https://doi.org/10.5539/JEL.V13N6P346>
- Camacho, M. U., Tambasco, P., Martínez, S., & Correa, M. G. (2023). El impacto de la Inteligencia Artificial en la educación. Riesgos y potencialidades de la IA en el aula. *Revista Interuniversitaria de Investigación En Tecnología Educativa*, 41–57. <https://doi.org/10.6018/RIITE.584501>

- Chiu, T. K. F., & Chai, C. S. (2020). Sustainable Curriculum Planning for Artificial Intelligence Education: A Self-Determination Theory Perspective. *Sustainability*, 12(14). <https://doi.org/10.3390/SU12145568>
- García, O. C. (2023). Inteligencia Artificial en Educación Superior: Oportunidades y Riesgos. *Revista Interuniversitaria de Investigación En Tecnología Educativa*, 16–27. <https://doi.org/10.6018/RIITE.591581>
- Ismail, A., Aliu, A., Ibrahim, M., & Sulaiman, A. (2024). Preparing Teachers of the Future in the Era of Artificial Intelligence. *Journal of Artificial Intelligence, Machine Learning and Neural Network*, 4(04), 31–41. <https://doi.org/10.55529/JAIMLNN.44.31.41>
- Kasepalu, R., Prieto, L. P., Ley, T., & Chejara, P. (2022). Teacher Artificial Intelligence-Supported Pedagogical Actions in Collaborative Learning Coregulation: A Wizard-of-Oz Study. *Frontiers in Education*, 7, 736194. <https://doi.org/10.3389/FEDUC.2022.736194>
- Lameras, P., & Arnab, S. (2021). Power to the Teachers: An Exploratory Review on Artificial Intelligence in Education. *Information 2022*, Vol. 13, Page 14, 13(1), 14. <https://doi.org/10.3390/INFO13010014>
- Lawrence, L. E. M., Echeverría, V., Yang, K., Aleven, V., & Rummel, N. (2024). How teachers conceptualise shared control with an AI co-orchestration tool: A multiyear teacher-centred design process. *British Journal of Educational Technology*, 55(3), 823–844. <https://doi.org/10.1111/BJET.13372>
- Mateus, J. C., Lugo, N., Cappello, G., & Guerrero-Pico, M. (2024). Communication Educators Facing the Arrival of Generative Artificial Intelligence: Exploration in Mexico, Peru, and Spain. *Digital Education Review*, 45, 106–114. <https://doi.org/10.1344/DER.2024.45.106-114>
- Ministerio de Educación y Formación Profesional. (2022). *BOE-A-2022-4975 Real Decreto 217/2022*. <https://www.boe.es/buscar/act.php?id=BOE-A-2022-4975>
- Morán-Ortega, S.-A., Ruiz-Tirado, S.-G., Simental-López, L.-M., & Tirado-López, A.-B. (2024). Barreras de la Inteligencia Artificial generativa en estudiantes de educación superior. Percepción docente. *Revista de Investigación En Tecnologías de La Información*, 12(25), 26–37. <https://doi.org/10.36825/RITI.12.25.003>
- Pavlovic, D., Soler-Adillon, J., & Stanisavljevic-Petrovic, Z. (2024). Un profesor particular a tiempo completo: ChatGPT desde el punto de vista de los estudiantes. *Revista Española de Pedagogía*, 82(289), 563–584. <https://doi.org/10.22550/2174-0909.4160>
- Uygun, D. (2024). Teachers' perspectives on artificial intelligence in education. *Advances in Mobile Learning Educational Research*, 4(1), 931–939. <https://doi.org/10.25082/AMLER.2024.01.005>