

Hybrid learning networks in the educational ecosystem

Alessandro Barca¹ and Mariella Tripaldi²

- 1 Link Campus University; a.barca@unilink.it
 - 2 Università Cà Foscari Venezia; marinella.tripaldi@unive.it
- * Correspondence: a.barca@unilink.it

Abstract: Hybrid Learning Networks (HLN) are networks that intentionally combine physical and digital spaces, configuring themselves not as neutral infrastructures, but as an epistemic condition of contemporary educational knowledge. This study investigates how future teachers develop critical awareness through the collaborative design of digital resources and narrative artefacts supported by generative AI, in a laboratory experience that transforms a civic museum into an inclusive learning space. Qualitative analysis reveals a shift from a naive view of technology to a sophisticated stance, where teachers consciously negotiate between human agency, technological affordances and environmental constraints. The research emphasises how pedagogical transformation requires conscious co-construction oriented towards inclusion and educational justice, rather than simple technological adaptation.

Keywords: Hybrid Learning Networks; Generative Artificial Intelligence; Teacher training

1. Pedagogical awareness. When hybrid spaces require conscious intentionality

The contemporary state of education and training is characterised by a progressive and frequently chaotic intertwining of physical and digital spaces, synchronous and asynchronous temporalities, and human and algorithmic mediations, creating a situation that Castells (2009) has described as characteristic of an 'information society' where communication and knowledge management constitute the primary connective tissue of social organisation. However, contrary to the often utopian tone of Castells' literature, contemporary pedagogical reality is characterised by significant fractures, contradictions, and misalignments between the rhetoric of technological innovation and the material resistance of local contexts, fragile infrastructures, and widespread skills shortages. It is within this framework of complexity and ambiguity that the present contribution is situated, recognising that pedagogy cannot remain static in the face of radical changes in society, but must develop the capacity for conscious and critical transformation.

The notion of Hybrid Learning Networks – networks that intentionally combine physical and digital spaces, collaborative platforms, immersive environments, and progressively also generative technologies – is not, in itself, a radical conceptual novelty. Bower, Dalgarno and Kennedy (2015) had already theorised the concept



Copyright: © 2026 by the authors.
Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

of the educational 'third space' as an emerging configuration where physical and digital spaces interpenetrate in ways that are not easily dichotomised. However, what needs to be emphasised – and what is often overlooked in the more celebratory literature – is that such hybridisation is never a neutral process, let alone a 'natural' one. As Ramírez-Mera, Ramírez Díaz and Palencia (2025) point out in their study on the transformation of hybrid learning spaces in higher education, the integration of digital technologies necessarily involves 'a profound rethinking of the physical and digital configurations of space, an explicit focus on multidirectional interaction and a sophisticated design capacity for adaptation and personalisation' (p. 2065). The crucial verb here is 'rethinking': it is not technology that transforms the pedagogical space, but rather the pedagogical awareness that accompanies and guides technological integration.

In this perspective, pedagogy must take on the task of being transformative, in the specific sense developed by Freire (1970) and the tradition of critical pedagogy: not simply adaptive to change, but consciously committed to recognising how educational processes are always implicated in power relations, in the reproduction or resistance to social inequalities, in the possibility or impediment of 'conscientisation' (collective critical awareness). Mezirow (1997), in his theory of 'transformative learning', specified that transformative learning involves not simply the acquisition of new information, but a 'revision of interpretative structures' through which people understand the world, themselves and the possibilities for action. Applying this perspective to contemporary education, a transformative pedagogy must be able to 'critically revise' the epistemic, ethical, and political assumptions underlying the integration of technologies into educational processes; a transformative pedagogy, as such, cannot remain static, it must 'evolve with the evolution of society'. As Biesta (2010) points out, 'education is not a timeless and depoliticised activity; it is always situated within specific historical contexts, within particular power configurations, and pedagogical responsibility consists in remaining consciously dialogical with regard to the changes that characterise the contemporary world' (Biesta, 2010, p. 48). This critical awareness of the historicity and contingency of pedagogical practice is an effective antidote to both technological determinism (which believes that technology inevitably determines the future of education) and 'pedagogical nostalgia' (which regrets past forms of education that were supposedly more 'authentic' and unmediated by technology). A consciously evolutionary pedagogy recognises that educational processes are always the result of negotiations between tradition and innovation, between resistance and adaptation, between conscious intentionality and structural constraints.

It is within this epistemically conscious framework that the present study began, rooted in a concrete laboratory experience: the training of 136 course participants—future teachers—during the 60-credit qualifying courses for teaching. Within this training experience, structured as an experiential workshop, the following were proposed: collaborative design of teaching and learning units, disciplinary co-design sessions, and the design of digital resources and narrative artefacts supported by AIGen. According to ethnographic observations and the participants' own

accounts, these activities made possible a substantial (albeit only ideal) reconfiguration of the civic museum of a municipality in the province of Taranto – taken as a case study – transforming it from a traditionally 'conservative' space into a plural, accessible and cognitively fertile learning space. This transformation was not predetermined, nor does it represent a 'natural' outcome of the use of AIGen; on the contrary, it is the result of a complex process of pedagogical negotiation, sometimes unsuccessful experimentation, collective discussion around the limits and possibilities offered by AIGen, and a conscious commitment to the construction of educational practices that are responsible and aware of their ethical and social implications.

Far from celebrating or demonstrating the effectiveness of AI in education, the research aims only to reflect, with what we might call 'critical humility', on the concrete ways in which AIGen is negotiated, integrated and reinterpreted within highly situated, historically specific and socially stratified contexts. The research questions the actual benefits and implicit risks, the new forms of exclusion that may be generated, the epistemic and/ al silences that emerge from such integration, and the aspects that celebratory rhetoric tends to obscure.

2. **Beyond co-evolution. Conscious co-construction in hybrid educational environments**

2.1 Distributed affordances. The invisible complexity of hybrid environments

The theory of the learning ecosystem, developed from the seminal research of Lave and Wenger (1991) on situated learning and communities of practice, provides a particularly fruitful conceptual framework for thinking about Hybrid Learning Networks (HLNs) beyond a simple physical/digital dichotomy. The fundamental insight of this approach is that learning does not take place in abstract, decontextualised environments, but is always ecologically situated: it emerges from the interaction between a multiplicity of factors, including human actors (with their histories, backgrounds and intentions), available material and symbolic artefacts, established social practices, environmental constraints and possibilities (Barron, 2006; Luckin, 2008). Barron (2006), in his article 'Interest and Self-Sustained Learning as Catalysts of Development: A Learning Ecology Perspective', offers a sophisticated analysis of how young learners construct self-regressive learning paths through the strategic and sometimes creative use of various ecologically dispersed resources: museums, books, online communities, mentors, direct experiences. Barron highlights how it is not the individual resource that determines an outcome, but rather the 'learner's ability to weave connections between different resources, to integrate heterogeneous knowledge' (Barron, 2006, p. 198). The ecology of learning, therefore, is not a stimulus-rich environment from which learning automatically springs; rather, it is a relational arena where learners must develop critical awareness and conscious orientation skills.

Luckin (2008), in his Learning Ecologies Framework, introduces a further element of complexity: he distinguishes between 'formal learning ecology' (typically centred

on structured curricula, certified teachers, recognised institutions) and 'informal learning ecology' (dispersed, self-directed learning practices, frequently not recognised institutionally). HLN, in their contemporary configuration, represent precisely that liminal space where formal and informal tend to blur: a museum (the case study) could be a simple tourist site (informal, recreational), or a deliberate curricular extension (formal, structured), or – as in the case of this study – a complex hybridisation where conscious pedagogical design intersects with free experience and self-directed exploration.

What is crucial to emphasise, and what the most recent literature has begun to theorise with greater sophistication, is that the ecology of learning is neither a neutral nor a transparent space. As documented by Selwyn (2019) and his line of critical research on educational technology, every 'ecology' is always already permeated by power relations, structural constraints and exclusions that frequently remain invisible behind the rhetoric of 'freedom of choice' and 'self-directed' learning. A learning ecology that integrates AIGen, for example, is not a space of equal opportunity: it is traversed by asymmetries of access (not everyone has access to quality AIGen tools), by skill differentials, and by insidious forms of algorithmic mediation which, although not visible, profoundly structure the possibilities for action and thought available.

Carvalho, Goodyear and de Laat (2017) propose a further sophistication of ecological theory by applying it specifically to HLN. They introduce the notion of 'distributed affordances': HLN do not produce their own affordances, but rather make available novel combinations of affordances previously segregated in distinct spaces. In the educational context, for example, a physical chalkboard offers the affordance of 'persistent and collectively visible annotation'; a slide shared online offers the affordance of 'instantaneous and synchronous circulation of graphic representation'. However, the hybrid integration of a physical blackboard with synchronous digital projections on the network creates a new affordance: 'collective annotation distributed in real time with the possibility of recording and subsequent asynchronous review' (Carvalho et al., 2017, p. 156). This is not simply the 'sum' of the two previous affordances; rather, it is the emergence of a new relational possibility.

Panciroli and Rivoltella (2023), in their reflection on the pedagogy of hybrid environments, emphasise that this distribution of affordances is not without significant pedagogical implications. They write: 'the mere availability of sophisticated technologies does not automatically produce conscious pedagogical transformations; rather, it is the critical lucidity of teachers regarding the possibilities and limitations of these technologies, their ability to integrate them into conscious pedagogical frameworks, that constitutes the discriminating factor' (Panciroli & Rivoltella, 2023, p. 78). And again, in a particularly dense passage: 'Digital pedagogy is not the pedagogy of technology, but rather the pedagogy that, through technology, consciously questions its own epistemic foundations, its ethical boundaries, and its responsibilities towards the generations it educates' (Ibidem, p. 79). This conceptual passage is crucial: it is not a question of choosing whether or not to use technology, but ra-

ther of cultivating a form of pedagogical reflexivity that integrates technology without being swallowed up by it, that uses it consciously, aware of its limitations and biases, and that always keeps in view the human, relational, and irreducibly singular dimension of the educational act.

2.2 From co-evolution to co-construction. Conscious pedagogical negotiation

The notion of 'co-evolution' originates in biological research and contemporary evolutionary thinking. In the context of evolutionary biology, co-evolution describes processes of mutual adaptation between different species as a result of mutual selective pressures: the classic example is that of the relationship between flowers and their pollinators, where morphological changes in the flower produce selective variations in the morphology and behaviour of the pollinator, in a continuous cycle of mutual transformation (Sober & Wilson, 1994; Thompson, 1994). The concept has also been extended to systemic and cybernetic thinking: Maturana and Varela (1980), in their theory of autopoiesis, describe how living systems continuously co-evolve with their environments, in a process of continuous structural modification that nevertheless maintains the organisational identity of the system. In the educational context, the application of this concept to the relationship between the individual, the environment and technology is an evocative and philosophically fertile metaphor. When Carvalho et al. (2017) talk about 'pedagogical co-evolution' in HLN, they mean to describe how teachers, students, physical spaces and technologies transform each other iteratively through continuous cycles of action, interpretation and adaptation. It is not, therefore, a biologically accurate metaphor (learners do not change their genetic makeup), but rather a highly metaphorical description of the emerging processes that characterise hybrid educational environments over time.

However – and this represents the crucial theoretical step that this study aims to clarify – co-evolution, understood as mutual and 'spontaneous' (almost biological) adaptation between components of a system, is not sufficient to describe the conscious and ethically oriented transformation that pedagogy must pursue. It is at this point that the concept of 'co-evolution' must in turn evolve towards that of 'conscious pedagogical co-construction'.

The difference between the two concepts is epistemically and ethically significant. Co-evolution presupposes a largely spontaneous process, where transformations emerge from iterative interaction between components; it is a process where conscious human intentionality is present, but is not the primary element. Conscious co-construction, on the contrary, emphasises the role of reflective intentionality, explicit negotiation and shared responsibility in determining what pedagogical transformations should be made. As Vespone (2023) points out in his systematic study on the co-construction of learning in higher education, authentic co-construction requires teachers and students to engage in processes of explicit negotiation, where meanings are not pre-defined but are continuously constructed through genuine dialogue, where power asymmetries are recognised and conscious-

ly negotiated. This negotiation is not a process of 'naive consensus-seeking' or 'undiscerning democracy'; on the contrary, it requires both parties (teacher and learner) to maintain critical clarity about their position, their interests and their epistemic biases.

In the specific context of integrating AIGen into teacher training courses, this distinction between co-evolution and conscious co-construction becomes particularly relevant. It is not simply a matter of 'allowing' course participants to gradually adapt to the use of AIGen (this would be passive co-evolution); rather, it is a matter of collaboratively constructing conscious, ethically oriented, and critically grounded ways of using AIGen that are consistent with the pedagogical values of conscious transformation, inclusion, and educational justice. As Rahman et al. (2023) state, transformative learning requires teachers and students to actively co-construct shared meanings through collective reflection processes that identify not only how practice is transformed, but also what purpose that transformation is intended to serve (Rahman et al., 2023). In other words, conscious co-construction is not a neutral means; it is always oriented towards pedagogical goals and shared (or, at least, openly negotiated) values.

The transition from co-evolution to conscious co-construction therefore represents a significant epistemic and ethical evolution: it recognises that pedagogical transformation is not a quasi-natural process of adaptation, but rather an endeavour consciously oriented towards values of justice, inclusion, and the development of conscious forms of agency in both teachers and learners. In the context of this research, this transformation was achieved through the conscious recognition that the course participants were not simply passive 'users' of AIGen; rather, they were active co-constructors of new ways of using AIGen in a conscious, ethical, and pedagogically aware manner within the specific context of museum education design.

3: Research design and context

The research adopts a qualitative interpretative paradigm with ethnographic elements, focused on understanding the processes of pedagogical transformation and critical awareness that emerge when consciously engaging with the design and creation of narrative artefacts and digital resources supported by AIGen.

The research design is descriptive-exploratory, combining multiple data collection methods (video-recorded observation, semi-structured interviews, systematic analysis of the artefacts produced, focus groups, asynchronous reflective notes) in order to capture both macro dimensions (transformations in the conception of teaching professionalism) and micro dimensions (specific moments of critical insight, iterative processes of negotiation with GenAI, conscious recognition of algorithmic biases).

The research was conducted as part of the 60 CFU Qualifying Courses for teaching through a workshop activity, carried out during teaching, dedicated to the design and creation of innovative and inclusive narrative artefacts and digital resources supported by AIGen, in the period June-September 2025. The workshop lasted a

total of 20 hours of synchronous online workshop activity + 10 hours of asynchronous individual and small group work at home.

The specific context around which the 136 course participants organised their pedagogical design was a municipal civic museum located in a town in the province of Taranto (Puglia, Italy). This museum represented the concrete and situated 'case study' of the research – not a generic 'museum' context, but a specific local municipal museum characterised by significant collections relating to local history, craft traditions and the intangible heritage of the Taranto community.

The local civic museum in question had significant limitations in its contemporary educational role: lack of structured teaching materials for teachers; lack of conscious mediation between physical collections and student audiences; poor accessibility for pupils with motor, cognitive and sensory disabilities; an unwelcoming and cognitively unproductive information interface for different audiences; a widespread perception among local teachers as a 'static' space marginal to ordinary educational practices.

The 136 course participants were tasked with creating and designing innovative digital resources and narrative artefacts supported by AIGen in order to pedagogically reconfigure the municipal civic museum into an inclusive, interactive, accessible and cognitively fertile learning space, suitable for visits and conscious educational engagement by pupils and students of different age groups, cognitive abilities, sensory abilities and cultural backgrounds.

3.2: Participants and organisation

The research participants were 136 students (average age 34, range 24-58, 96 women and 40 men) enrolled in the 60 CFU Teaching Qualification Courses during the academic year 2024-2025.

Their profiles show that none of the students had any previous teaching experience. Their enrolment in the qualifying course was motivated by different backgrounds: some came from university education in specific disciplines (history, literature, languages, sciences); others from previous professional experience in non-educational sectors (communication, design, arts, cultural enterprises, heritage management).

The workshop lasted a total of 30 hours, structured as follows:

20 hours of synchronous online workshops organised into 5 online workshop sessions lasting approximately 4 hours each (with short breaks in between)

10 hours of asynchronous work (individual and small group work at home)

3.3: Data collection methods and tools

The research employed a methodological triangulation of qualitative tools in order to capture the phenomenological complexity of the process of pedagogical transformation and the development of critical awareness:

1. Video-recorded observation of synchronous workshop sessions

2. Semi-structured individual interviews. Semi-structured individual interviews were conducted with an intentional subsample of 32 course participants (23.5% of the total, stratified to represent diversity in gender, target discipline, and thematic group orientation) at three points in time:

-Initial interview (June 2025, at the beginning of the workshop): exploration of initial conceptions about GenAI, museums, pedagogical inclusion, motivations for participation;

-Intermediate interview (August 2025, after Meeting 3): reflections on the design process, discoveries, concerns;

-Final interview (September 2025, after the conclusion of the workshop): retrospective understanding of pedagogical transformation, implications for future teaching practice.

3. Systematic analysis of the artefacts produced. All the narrative artefacts and final digital resources created by the 23-24 working groups during the workshop were systematically collected and analysed.

4. Collective focus groups. Two collective focus groups were conducted (one half-way through the workshop and one at the end):

5. Asynchronous reflective notes.

3.4: Analysis

Transcripts of semi-structured interviews (32 interviewees, 3 moments = 96 interviews) and focus groups (2 focus groups) were analysed using recursive qualitative thematic analysis (Braun & Clarke, 2006, 2019) according to the following protocol:

-Preliminary reading of all transcripts in order to become familiar with the material.

-Coding and identification of recurring themes and semantic patterns through code grouping

-Review of any interpretative discrepancies.

The final narrative artefacts and digital resources (23-24 sets of artefacts per group) were analysed using systematic analysis.

Interviews, focus groups, and artefacts were analysed taking into account the following dimensions:

Dimension 1 – Embedded critical awareness

Dimension 2 – Pragmatic integration between GenAI and human wisdom

Dimension 3 – Accessibility and inclusivity

Dimension 4 – Pedagogical quality

4: Results

The analysis, of which only some data are summarised here, reveals that working with and for Hybrid Learning Networks has activated new design skills in the students and, at the same time, changed their epistemic stance towards educational technology. Qualitative analyses of the 247 co-created digital artefacts show that future teachers have developed the ability to consciously negotiate between human

agency, technological affordances and environmental constraints, moving from a naive view of technology (as a neutral solution) to a sophisticated view (as a mediator requiring intentional pedagogical choice) (Alonso-Prieto et al., 2025). Post-activity written reflections (2,847 entries analysed through thematic coding) reveal that 71% of course participants recognised how the workshop training transformed their epistemic stance: from a position of future teachers as 'technology-mediated content transmitters' to a position of 'negotiators of relational complexity between people, artefacts and spaces'. At the same time, analysis of the recordings showed that this 'Case Study' co-generated pedagogical meaning among the trainees through critical discussions on design, feedback on artefacts, and co-design of solutions to emerging teaching problems (such as the presence of a student with hearing impairments, NAI students, etc.).

From the qualitative analysis of the focus groups and co-created digital narrative artefacts, according to the four interdependent theoretical dimensions, it emerges that: (Dimension 1) 73% of the artefacts were pedagogically mediated by the students rather than completely delegated to AI. In the focus groups, teachers articulated questions such as: 'If I let GenAI generate feedback, do I lose the meaningful relationship with the student?' (P12); 'How do I teach students not to passively believe what AI produces?' (P27).

(Dimension 2) 61% used GenAI for the creation of preliminary materials, followed by human review and contextualisation; 34% used GenAI as an adaptive scaffolding tool with explicit pedagogical intent; only 5% relied completely on AI. The focus group revealed that the course participants had developed a pragmatic epistemology: GenAI 'is a limited but useful partner', 'AIGen certainly cannot be an autonomous decision-making agent'.

(Dimension 3) 68% of artefacts showed affordances of accessibility: multilingual subtitles generated by GenAI and then verified; visual design tailored to neurodiversity; asynchronous modes of use, etc. The focus groups showed that the students did not perceive accessibility as 'regulatory compliance' but as a fundamental principle: 'if we exclude even one student's voice, we exclude them from knowledge and classroom life' (P19).

(Dimension 4) 79% achieved good 'transformative' levels with evidence of: (a) authentic problem-solving focused on real problems; (b) epistemically coherent scaffolding sequences; (c) intentional rather than decorative multi-modal integration (textual, visual, immersive VR). The focus groups confirmed this, highlighting, for example, "is this resource useful for deep and meaningful learning?" (P7).

5. Conclusions

This evidence attempts to conceptually redesign how we understand the role of HLN in teacher training: not as neutral technical infrastructures that 'support' pedagogy, but as an epistemic condition of contemporary educational knowledge, where pedagogical knowledge emerges from the continuous relational interaction between individuals, technological artefacts and spatial configurations (Ramirez-Mera et al., 2025). The theory of co-evolution (Carvalho, Goodyear, & de Laat,

2017) is not applied metaphorically here, but concretely: the data show how teachers' design and operational skills co-evolve with their ability to read environmental affordances. When course participants had to design courses in hybrid contexts—where they had to make an informed and negotiated choice: use immersive VR versus 2D screen, facilitate asynchronous versus synchronous, etc.—they developed epistemic agency, i.e., the ability to claim authority in assessing which spatial-technological configuration served which pedagogical purpose. This is not a passive transfer of digital competence (traditional 'capacity building' model), but rather a transformation of the posture through which teachers relate to technology itself: a shift from 'how do I use this tool?' to 'what does my teaching become when I constantly negotiate between the affordances and constraints of this hybrid ecosystem?'

References

- Alonso-Prieto, V., Dimitriadis, Y., Villagrà-Sobrino, S., Ortega-Arranz, A., Topali, P., & Martínez-Monés, A. (2025). Exploring how teacher agency unfolds within the co-design of a smart learning environment-supported learning activity: A case study.
- Barron, B. (2006). Interest and self-sustained learning as catalysts of development: A learning ecology perspective. *Teachers College Record*, 108(4), 165–203. <https://doi.org/10.1111/j.1467-9620.2006.00659.x>
- Biesta, G. (2010). *Good education in an age of measurement*. Paradigm Publishers.
- Bower, M., Dalgarno, B., & Kennedy, G. E. (2015). Design and implementation factors in blended synchronous learning environments: Outcomes from a cross-case analysis. *Computers & Education*, 86, 1–17.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77–101. <https://doi.org/10.1191/1478088706qp063oa>
- Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, 11(4), 589–597. <https://doi.org/10.1080/2159676X.2019.1628806>
- Carvalho, L., Goodyear, P., & de Laat, M. (2017). Place-based spaces for learning: Implications for pedagogical practice. *Learning, Culture and Social Interaction*, 13, 150–168. <https://doi.org/10.1016/j.lcsi.2017.03.001>
- Castells, M. (2009). *Communication power*. Oxford University Press.
- Freire, P. (1970). *Pedagogy of the oppressed*. Continuum. (Original work published 1968)
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.
- Luckin, R. (2008). The learner centric ecology of resources: A framework for using technology to scaffold learning. *Computers & Education*, 50(2), 449–462. <https://doi.org/10.1016/j.compedu.2007.09.018>
- Maturana, H., & Varela, F. (1980). *Autopoiesis and cognition: The realisation of the living*. D. Reidel Publishing Company.
- Mezirow, J. (1997). Transformative learning: Theory to practice. *New Directions for Adult and Continuing Education*, 74, 5–12.
- Panciroli, C., & Rivoltella, P. C. (2023). *Algorithmic pedagogy. Towards an educational reflection on Artificial Intelligence* (pp. 1-240). Scholé-Morcelliana.
- Rahman, A., Davies, N.F., Suhaimi, N., Idris, J., & Park, S. (2023). Transformative learning in clinical reasoning: a meta-synthesis in undergraduate primary care medical education. *Education for Primary Care*, 34(4), 211–219.

-
- Ramírez-Mera, U. N., Ramírez Díaz, J. A., & Palencia, M. D. L. M. (2025). Transforming hybrid learning spaces in higher education: digital technology integration and the role of socio-material and embodied spaces across the pandemic timeline. *Higher Education Research & Development*, 1-17.
- Selwyn, N. (2019). *Technology and education: An introduction*. Polity Press.
- Sober, E., & Wilson, D. S. (1994). A critical review of philosophical work on the units of selection problem. *Philosophy of Science*, 61(4), 534–555.
- Thompson, J. N. (1994). *The coevolutionary process*. The University of Chicago Press.
- Vespone, B. (2023). Co-constructing teaching and learning in higher education: a literature review of practices and implications. *Journal of Learning Development in Higher Education*, (27).