

Heutagogy Beyond Autonomy and Structure in Digital Higher Education

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ABSTRACT

The rapid digitization of higher education and the demands of Industry 4.0 have intensified the shift from teacher-centered instruction to learner-centered models, positioning heutagogy as a framework for self-determined learning. Despite its growing prominence, the literature remains fragmented regarding its practical enactment and theoretical coherence across educational contexts. This article critically synthesizes peer-reviewed studies published between 2020 and 2025 to examine the tension between learner agency and institutional structure, and the mediating role of technology in heutagogical practice. Drawing on a systematic critical synthesis of 40 sources, the analysis identifies three interrelated themes: technological mediation, contextual specificity, and critical pedagogy. The findings indicate that while heutagogy is increasingly integrated with digital and cybergogical approaches, its effectiveness depends on learner readiness and institutional support. Moreover, applications in neurodiverse and indigenous contexts frame heutagogy as an epistemological stance that enables inclusive and transformative learning through symbiotic criticality.

Keywords: Heutagogy, Learner Agency, Self-Determined Learning, Digital Pedagogy, Critical Pedagogy.

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INTRODUCTION

The trajectory of educational theory has long been marked by an evolving understanding of the learner's role, progressing from the passive recipient of knowledge in pedagogy to the self-directed adult learner emphasized in andragogy. This evolution has culminated in the emergence of heutagogy, or self-determined learning, which positions learners as the primary architects of their own educational pathways (D'Souza, 2024). Amid

the accelerating digitization of higher education, the imperatives of Education 4.0, and the post-pandemic shift toward hybrid and flexible learning environments, heutagogy has moved from a marginal theoretical construct to a central concern in curriculum design and instructional innovation (Kim, 2022; Bărbuceanu, 2024). This growing prominence is further substantiated by Setyowibowo's (2025) bibliometric analysis, which documents an exponential increase in heutagogy-related publications between 2005 and 2024.

Contemporary scholarship increasingly argues that rigid, standardized instructional models are insufficient for cultivating the adaptability, resilience, and critical problem-solving capacities required in the twenty-first century (Vinayan & Harikirishanan, 2021). In this context, Stoten (2021) emphasizes that heutagogical approaches are particularly effective in developing adaptive management capabilities during periods of uncertainty and disruption. Similarly, Blaschke and Hase (2021) contend that modern professional environments demand lifelong learners who can navigate ambiguity and ill-structured problems—competencies that are fundamentally aligned with heutagogical principles. Nevertheless, translating these principles into sustainable educational practice remains complex. The “digital twist” described by Bărbuceanu (2024) highlights how digital technologies simultaneously enable personalization and introduce challenges related to digital inequality, algorithmic mediation, and the cognitive demands of self-regulation. These concerns echo Prayitno and Supriyanto's (2020) observations in the context of the “new normal” era, where educational flexibility must be carefully balanced with adequate structural and pedagogical support.

Despite the expanding body of literature, several critical gaps persist. First, although the conceptual distinctions among pedagogy, andragogy, and heutagogy are well articulated (Glassner & Back, 2020b), there is limited consensus regarding the operational mechanisms through which institutions can transition between these approaches. Alabisi and Vucetic-Trifirò (2023) further complicate this discourse by positioning these learning theories along a continuum rather than as mutually exclusive paradigms. Second, much of the existing research prioritizes theoretical advocacy or isolated case studies, often overlooking the needs of diverse learner populations, including neurodivergent students and learners embedded within indigenous knowledge systems (Friedman & Nash-Luckenbach, 2024; Andriani et al., 2023). Third, the relationship between heutagogy and technology—frequently framed through the concept of cybergogy—requires deeper critical interrogation to determine whether digital tools genuinely enhance learner agency or merely reproduce new forms of algorithmic control (Rui et al., 2024). As Chakraborty and Halder (n.d.) note, despite its growing popularity, heutagogy continues to face challenges related to conceptual clarity and practical implementation.

Responding to these gaps, this article offers a comprehensive critical synthesis of recent scholarship on heutagogy. Moving beyond descriptive review, the study interrogates the assumptions underpinning learner agency and examines the evolving relationship between self-determined learning, criticality, and institutional structures. Specifically, the study aims to: (1) evaluate the role of digital technology in mediating heutagogical learning practices; (2) examine how heutagogy is adapted within diverse cultural and neurological contexts; and (3) identify structural and epistemic barriers that constrain its implementation in higher education. Accordingly, this study addresses the following research questions: How does technology function as a double-edged sword in heutagogical environments? In what ways does heutagogy accommodate—or potentially exclude—specific learner populations? What are the theoretical implications of integrating heutagogy within traditionally structured educational systems?

METHODS

This study adopts a systematic critical synthesis design, selected for its capacity to integrate heterogeneous empirical findings and theoretical perspectives into a coherent and

analytically robust conceptual framework. The appropriateness of this approach is supported by the systematic review conducted by Ramas and Yasin (2023), which underscores the methodological value of synthesizing diverse investigations within heutagogical research. In contrast to traditional narrative reviews that primarily enumerate findings, a critical synthesis interrogates the underlying assumptions, epistemological positions, and ideological orientations embedded in the literature (Panta, 2025). Accordingly, this study is best classified as an integrative review, as it incorporates both theoretical contributions and empirical studies spanning multiple educational domains, including higher education, vocational training, and medical education.

The literature corpus was drawn exclusively from the finalized Reference List and consists of 40 scholarly sources published predominantly between 2020 and 2025. This temporal delimitation ensures that the synthesis reflects contemporary theoretical advancements as well as the structural shifts in educational practice precipitated by global disruptions such as the COVID-19 pandemic. Source selection was guided by relevance and conceptual contribution, prioritizing studies that explicitly addressed: (a) the relationship between heutagogy and digital technology, (b) applications of heutagogy in non-traditional or marginalized learning contexts, and (c) critical examinations of learner agency within institutional settings.

The analytical framework is grounded in Critical Pedagogy and Learner Agency Theory, enabling an examination of how power relations are reconfigured when learners assume greater control over their learning trajectories and how institutional structures either facilitate or constrain such agency. The analytical process unfolded in three sequential stages. First, an in-depth close reading of all selected texts was conducted to identify dominant concepts, definitions, and argumentative patterns. Second, thematic coding was applied to organize the literature into three analytical clusters: *Technological Mediation*, *Contextual Adaptability*, and *Institutional Criticality*. Third, a cross-comparative analysis was undertaken within and across these clusters to identify areas of convergence, divergence, and theoretical omission.

To enhance analytical rigor and validity, the synthesis employed a constant comparison strategy, whereby the claims and conclusions of individual studies were systematically examined in relation to one another. For example, the technologically optimistic perspectives advanced by Blaschke (2021) were critically juxtaposed with the more cautious findings concerning neurodivergent learners reported by Friedman and Nash-Luckenbach (2024). This dialectical method ensures that the resulting synthesis does not privilege a singular ideological position but instead reflects the complexity, tension, and nuance characteristic of contemporary scholarly discourse on heutagogy.

RESULT AND DISCUSSION

The critical synthesis of the reviewed literature reveals a multifaceted landscape in which heutagogy is actively reshaping both educational theory and pedagogical practice. The findings are organized around three interrelated themes: the ambivalent role of digital technology in mediating learner agency, the expansion of heutagogy into diverse and inclusive educational contexts, and the theoretical maturation of heutagogy toward a critical epistemological stance.

The Digital Mediation of Agency: A Double-Edged Sword

A dominant theme across the literature is the inseparable relationship between heutagogy and digital technology, frequently framed within the discourse of Education 4.0. Digital tools are widely portrayed as the primary enablers of self-determined learning. Blaschke (2021) and Hamdan et al. (2021), for example, argue that mobile learning environments (M-

heutagogy) and e-portfolios provide essential infrastructures that allow learners to curate knowledge, document learning trajectories, and demonstrate competencies autonomously. In this regard, Blaschke and Marin (2020) emphasize the role of e-portfolios as reflective and assessment-oriented tools that align closely with heutagogical principles. Similarly, Alex and Mukuka (2024) demonstrate that virtual “air campus” environments facilitate immersive and self-directed problem-solving experiences for trainee teachers.

Additional support for the centrality of digital mediation is evident in studies focusing on mobile learning for sustainability education (Kamrozzaman & Badusah, 2020) and the conceptualization of online education in higher education institutions (Bykasova et al., 2021). Lapele et al. (2022) go further by characterizing heutagogy as the “most holistic approach utilizing technology in learning,” while Widiaty et al. (2020) illustrate how multiplatform application technologies can operationalize heutagogy within culturally specific curricula, such as batik learning.

Nevertheless, the significance of these findings is deepened by critical perspectives that question the assumption that technology is inherently emancipatory. Bărbuceanu (2024) introduces the notion of the “digital twist,” arguing that algorithm-driven platforms may subtly constrain learner autonomy by pre-structuring choices and learning pathways. Rui et al. (2024) extend this critique by noting that although technology enables peer interaction central to peeragogy, it simultaneously imposes a form of “cybergogy” that demands high levels of digital literacy and self-management. These insights suggest that technology functions not as a neutral conduit but as a new learning ecology that actively shapes agency.

Without intentional pedagogical design, digital heutagogy risks devolving into a shallow form of self-regulation in which learners merely navigate algorithmic systems rather than exercise genuine intellectual autonomy. Dewantara and Dibia (2021) warn that the perceived “unlimited” freedom of digital environments can result in cognitive overload, underscoring the need for a balance between openness and scaffolding. Chamo et al. (2023) further demonstrate that the convergence of heutagogy and blended learning in the post-pandemic era is beneficial but requires careful orchestration to avoid disorientation and disengagement.

Expanding the Epistemological Boundaries: Inclusivity and Context

Traditionally, self-determined learning has been associated with elite adult learners or corporate training settings. A key finding of this synthesis is the reconceptualization of heutagogy as a mechanism for educational equity and inclusion. Recent literature increasingly foregrounds learner populations that are systematically marginalized by rigid instructional models.

Friedman and Nash-Luckenbach (2024) provide compelling evidence that heutagogy is particularly well suited to supporting neurodivergent learners in higher education. They argue that the flexibility inherent in self-determined learning enables these learners to circumvent standardized assessment structures that often disadvantage them. This reframing positions heutagogy not as an educational luxury but as a necessary inclusive practice that allows learners to capitalize on individual strengths rather than conform to normative expectations of attention and performance.

The inclusive potential of heutagogy is also evident in culturally situated contexts. Andriani et al. (2023) demonstrate that in Indonesian integrated thematic instruction, heutagogy enables the meaningful incorporation of indigenous knowledge systems. By granting learners agency over curricular content, learning spaces become sites of cultural affirmation and identity formation. This aligns with Msila’s (2020) depiction of heutagogy as a “liberatory method” capable of challenging the colonial underpinnings of standardized curricula. Collectively, these

studies suggest that the “one-size-fits-all” logic of traditional pedagogy constitutes a primary mechanism of exclusion.

Heutagogy’s adaptability across disciplines further underscores its versatility. In vocational education, Anuar and Foong (2024) and Sumarni and Sudira (2022) illustrate how heutagogical approaches contribute to rebuilding vocational self-concepts in the context of Industry 4.0. In teacher education, Mwinkaar and Lonibe (2024) examine lecturers’ and pre-service teachers’ conceptions of heutagogy, while Handayani et al. (2021) highlight its role in enhancing teacher competencies in Indonesia. Bennett et al. (2025) explore heutagogy in tertiary coach development, and Zakaria et al. (2024) demonstrate its effectiveness in empowering mathematics teachers.

Within mathematics and science education, Tajudin et al. (2021) promote transformative learning through an integration of heutagogy, paralogy, and cybergogy, while Sabbardi and Pristi (2024) apply heutagogical and cybergogical strategies in Indonesian language learning. Febry et al. (2022), through a systematic literature review, report that heutagogical approaches significantly enhance student creativity. However, Bansal et al. (2020) caution that in undergraduate medical education, students continue to value traditional pedagogical approaches alongside andragogy and heutagogy, reinforcing the need for pedagogical balance rather than wholesale replacement.

From Acquisition to Criticality: The Theoretical Maturation

The final theme reflects a theoretical maturation in the discourse on heutagogy, moving beyond procedural notions of “learning how to learn” toward a deeper engagement with criticality and epistemology. Increasingly, heutagogy is defined not solely by learner autonomy but by the depth of critical reflection accompanying that autonomy.

Adams and Barnett (2022) conceptualize this relationship as “symbiotic,” arguing that learner agency without criticality risks becoming superficial or self-referential. Shpeizer and Glassner (2020) reinforce this view by linking heutagogy to philosophical discussions of free will, emphasizing that genuine agency entails the capacity to interrogate the structures within which learning occurs. Margarit (2021) similarly frames heutagogy as a catalyst for transformative teaching and deep personal change. Hase and Blaschke (2021, 2022) extend this epistemological argument to work and lifelong learning, positioning heutagogy as essential for navigating complex and unpredictable professional environments.

This shift elevates heutagogy from a pedagogical technique to a coherent epistemological stance, redefining education as the cultivation of critical, self-reflective learners rather than the mere acquisition of competencies. Glassner and Back (2020a) provide foundational theoretical support for this reconceptualization within higher education.

However, the ideal of critical autonomy often collides with institutional realities. Stoten (2024) documents the “epistemic friction” experienced by academics attempting to implement heutagogy in business schools governed by standardized metrics and accountability regimes. Moore (2020) similarly critiques the tendency of heutagogical discourse to overlook institutional constraints and learners’ uneven self-regulation capacities. Stoten (2020) further acknowledges the challenges of operationalizing “practical heutagogy” at scale, particularly within management education.

Empirical studies on learner perceptions add further complexity. Rusli et al. (2020) report generally positive student perceptions of online learning informed by heutagogy, while noting transitional challenges. Quantitative modeling by Baharuddin and Setialaksana (2023) demonstrates that heutagogy significantly contributes to self-regulated learning but operates within a broader ecosystem that includes peeragogy and cybergogy. Haryadi and Usman (2024) corroborate these findings by evidencing the positive influence of heutagogy on learning

effectiveness. Finally, Shtayermman et al. (2025) highlight that while heutagogy supports dynamic learning, it requires ongoing adaptation from both educators and learners.

Taken together, these findings suggest that the sustainability of heutagogy depends on its ability to negotiate the tension between radical learner autonomy and necessary institutional guidance. A viable path forward lies in a form of “critical symbiosis,” in which educators function not as directive authorities but as critical partners who challenge assumptions while honoring learner agency.

CONCLUSION

This article has presented a critical synthesis of recent scholarship on heutagogy, examining its intersection with digital technology, its application across diverse learner populations, and its evolving theoretical foundations. The analysis demonstrates that while technology serves as a powerful enabler of self-determined learning, its pedagogical value depends on deliberate design and critical oversight to prevent the erosion of learner agency. Moreover, the application of heutagogy in neurodivergent and indigenous contexts challenges the prevailing assumption that self-determined learning is the preserve of high-achieving adult learners, repositioning it instead as a crucial mechanism for educational equity and inclusion. Collectively, these findings affirm that heutagogy constitutes a fundamental epistemological shift, one that requires educators to move beyond instructional authority toward roles grounded in facilitation, dialogue, and critical partnership.

The principal contribution of this article lies in its integrative articulation of the emerging “critical turn” in heutagogy. By juxtaposing the technological optimism embedded in the Education 4.0 discourse with the liberatory perspectives evident in indigenous and neurodiverse educational contexts, this study argues that the future of heutagogy resides in a framework of *critical symbiosis*. Within this framework, learner agency is not cultivated in isolation but is co-constructed through the dynamic interaction of peer-based learning (peeragogy), digital mediation (cybergogy), and enabling institutional structures.

Future research should extend beyond conceptual discussions and small-scale case studies toward large-scale, longitudinal investigations of heutagogical interventions. In particular, quantitative and mixed-methods studies are needed to assess the long-term effects of heutagogy on professional adaptability and lifelong learning dispositions. Furthermore, as the “digital twist” intensifies with the integration of artificial intelligence in education, urgent scholarly attention is required to examine how AI can function as a supportive partner in self-determined learning without subsuming or displacing human agency. While the pathway toward a fully heutagogical educational ecosystem is inherently complex, the evidence synthesized in this study suggests that it is indispensable for cultivating resilient, critical, and adaptive learners in an increasingly volatile and uncertain world.

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