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Heutagogy in Education: Transforming The Learner Experience

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ABSTRACT

Heutagogy (pronounced hyoo-tuh-goh-jee), derived from the Greek word "heureske," meaning "to discover," is closely related to heuristic learning. Coined by Hase and Kenyon in 2000, heutagogy refers to self-determined learning that operates independently of traditional teaching structures. Unlike pedagogy and andragogy, which emphasize teacher-directed instruction, heutagogy shifts the focus to learner autonomy, allowing students to choose what and how they learn.

Heutagogy represents a shift from teacher-centered to learner-centered education, grounded in two key philosophical approaches: humanism and constructivism. Humanism places the learner at the center of the educational process, while constructivism emphasizes active, self-determined learning. Although andragogy, which focuses on adult learning, was seen as a precursor to heutagogy, research suggests that heutagogy is particularly suited to the digital age, with web-based learning, new information technologies, and distance education methods providing ideal contexts for its implementation.

The research gap of this paper examines the development of heutagogy as an educational model, comparing it with pedagogy and andragogy and explores its applications in modern education, particularly in web-based learning environments. As digital technologies continue to reshape education, heutagogy offers a flexible approach that fosters lifelong learning, critical thinking and adaptability as a main objective of the paper.

KEYWORDS

Heutagogy, Education, Pedagogy, Andragogy, Web-based learning

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INTRODUCTION

Heutagogy, or self-determined learning, empowers students to take an active role in their learning process, fostering independence and deeper engagement with the subject matter. It is often seen as an extension of andragogy, a term coined by Malcolm Knowles[1] (1984) that emphasizes self-determined learning in adult education. While andragogy, as a precursor to heutagogy, was initially associated with adult learning, heutagogy extends beyond this framework, applying to learners of all ages and contexts. It redefines the teacher's role from knowledge provider to facilitator, guiding learners in self-determined inquiry. However, this doesn't imply that teachers play a less significant role; rather, they assume a different role – one that is essential to effective teaching[2].

Over time, as our understanding of education and learning has evolved, teachers have adapted their methods to better meet the needs of students and facilitate optimal learning. Heutagogy fosters growth for both instructors and students. Initially, andragogy was associated primarily with adult learning, and many assumed the same for heutagogy. However, a closer examination of the skills and outcomes of heutagogy reveals that it is an approach that can benefit learners of all ages. The heutagogical approach differs significantly from traditional educational models, which are primarily teacher-led. Carl Rogers first introduced his client-centered approach in psychotherapy[3] and later adapted it to education[4] (1994), contributing to the development of student-centered learning[5].

Rather than focusing on teacher-directed instruction, heutagogy emphasizes learner autonomy and self-determination. In this model, the teacher transitions into a facilitator or guide, supporting learners in shaping their own educational journey[6].

Heutagogy is grounded in two key philosophical perspectives: humanism and constructivism. By integrating principles from humanism and constructivism, heutagogy supports personalized, dynamic learning experiences. The humanistic foundation places the learner at the center of the educational process, emphasizing personal growth and self-motivation. Constructivism, on the other hand, supports the idea that learners actively build knowledge through experiences and reflection, placing the learner at the heart of the educational experience. It suggests that learners construct their understanding based on prior knowledge and new experiences, fostering active rather than passive engagement. This approach aligns with the increasing emphasis on lifelong

1 Malcolm S Knowles, *Andragogy in Action: Applying Modern Principles of Adult Education* (San Francisco: Jossey-Bass, 1984).

2 Amnon Glassner and Shlomo Back, eds., *Introduction - Heutagogy: What Does It Mean and Why It Is Needed*, Exploring Heutagogy in Higher Education (Singapore: Springer, 2020).

3 Carl R Rogers, *Client-Centered Therapy: Its Current Practice, Implications, and Theory* (Boston: Houghton Mifflin, (1951).

4 Carl R. Rogers and Jerome H. Freiberg. *Freedom to Learn, III-rd edition, Macmillan College Publishing Company, USA,(1994).*

5 Stewart Hase and Chris Kenyon, "From Andragogy to Heutagogy," *UltiBASE RMIT* (2000).

6 Romero D'Souza, "Understanding Heutagogy: A New 'Gogy'," *Journal of Research Initiatives* 8, no. 4 (2024).

learning in contemporary education.

The learner-centered approach is a key humanistic concept. Heutagogy focuses on how learning occurs and how learners are guided through the process, ensuring that objectives align with their capabilities and maturity level. A major advantage of heutagogy is its ability to expand learners' potential by encouraging engagement with challenging material, fostering self-determined learning, and enhancing cognitive abilities and confidence. This adaptability is particularly relevant in the modern educational landscape, with the increasing emphasis on lifelong learning and continuous skill development.

Unlike traditional, linear education, heutagogical learning is informal and reflects the way people naturally learn outside the classroom. In this model, the teacher serves as a coach – an accessible resource rather than the primary source of knowledge – offering a dynamic approach that can significantly impact students. Despite its potential benefits, heutagogy has faced resistance in higher education due to traditional academic structures, fear of relinquishing instructor control, increased financial and learning pressure on students due to new technology requirements, and students' focus on grades rather than learning.

COMPARISON OF PEDAGOGY, ANDRAGOGY AND HEUTAGOGY

Pedagogy, andragogy, and heutagogy represent distinct approaches to learning, each with its own focus on the roles of the teacher and learner. Pedagogy is teacher-centered, where learners are passive recipients of information, often in formal, structured environments like schools. It emphasizes rote memorization and structured assessments, with limited regard for learners' prior experiences. In contrast, andragogy is learner-centered, acknowledging the prior experiences of adult learners and encouraging engagement through critical thinking, problem-solving, and practical application of knowledge. Andragogy typically occurs in informal or non-traditional settings, such as workshops or community education[7].

Heutagogy, on the other hand, promotes complete learner autonomy, emphasizing the learner's role in determining their own learning paths and outcomes. This approach can take place in a variety of environments, with a focus on adaptability and real-world context. Unlike pedagogy, heutagogy recognizes the importance of prior experiences and integrates them into the learning process, encouraging reflection and lifelong learning beyond formal education (Table 1).

Aspect	Pedagogy	Andragogy	Heutagogy
Learning Focus	Teacher-centered	Learner-centered	Self-determined
Environment	Formal, structured	Flexible, experience-based	Autonomous, adaptive
Role of Instructor	Knowledge provider	Facilitator	Guide and mentor
Learning Approach	Rote memorization	Problem-solving	Reflective, adaptive learning
Theoretical Basis	Behaviorism	Constructivism	Complexity theory & self-organization

Table 1. Comparison of pedagogy, andragogy, and heutagogy

7 Stewart Hase and Chris Kenyon, "From Andragogy to Heutagogy," *UltiBASE RMIT* (2000).

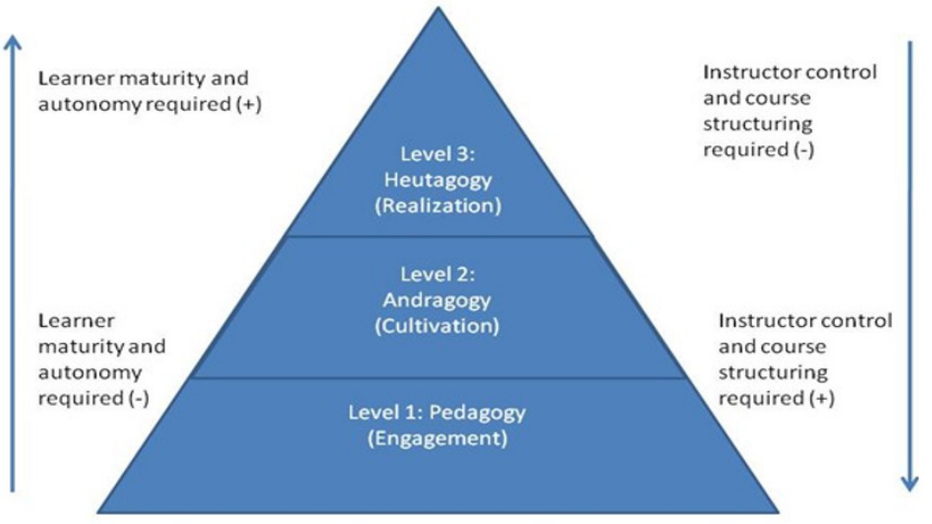

Figure 1: Progression from pedagogy to andragogy then to heutagogy[8]

The theoretical frameworks underlying these approaches differ as well. Pedagogy often aligns with behaviorism, while andragogy is grounded in constructivist theories. Heutagogy, rooted in constructivism and complexity theory, focuses on self-organized learning environments. Practical applications also vary: pedagogy literature often discusses classroom management and curriculum design, andragogical literature emphasizes techniques for engaging adult learners through workshops and training, while heutagogical literature explores designing learning experiences that foster autonomy, such as project-based learning and reflective practices.

The progression from pedagogy to andragogy to heutagogy can be viewed as a transitional pyramid (Figure 1), with learners likewise progressing in maturity and autonomy. More mature learners require less instructor control and course structure and can be more self-determined in their learning, while less mature learners require more instructor guidance and course scaffolding. Cognitive development of learners could also be integrated into this pyramid, progressing in parallel with learner maturity and autonomy.

The Open Context Model of learning emphasizes that, in addition to understanding the structures of a subject, learners must also identify collaboration processes and adopt strategies for creative renewal. It outlines three phases across the PAH (Pedagogy-Andragogy-Heutagogy) continuum:

In pedagogy, learning is structured around the focus of a subject discipline.

In andragogy, learning involves negotiating what we want to learn both within and beyond a subject discipline and collaborating with others in the social processes of learning.

In heutagogy, learning shifts towards under

8 Lisa Marie Blaschke, "Heutagogy and Lifelong Learning: A Review of Heutagogical Practice and Self-Determined Learning," *The International Review of Research in Open and Distributed Learning* 13, no. 1 (2012): 60. Based on: Natalie Canning, "Playing with Heutagogy: Exploring Strategies to Empower Mature Learners in Higher Education," *Journal of Further and Higher Education* 34, no. 1 (2010): 63.

standing the structure and form of a subject, and then experimenting with and transforming it[9].

For example, in the pedagogic phase of the PAH continuum, a student who learns how to write a research paper would focus on understanding the formal structure of the paper – its sections (introduction, methods, results, discussion), citation styles, and academic conventions. Learning is teacher-directed, with the subject discipline providing the framework. In the andragogic phase, learners begin to take more control over their research topic. They negotiate what they want to explore, drawing from both their personal interests and the requirements of the discipline. Collaboration with peers or mentors becomes essential, as learners seek feedback and engage in discussions that shape the direction of their paper. In the heutagogic phase, the learner's experiment with the form and structure of the research paper. They might explore unconventional ways to present their findings, challenge traditional formats, or incorporate innovative methodologies. They reflect on their learning process, adapting their approach based on self-driven goals and evolving understanding of the subject.

HEUTAGOGY IN PEACE, CONFLICT, AND SECURITY CONTEXTS

The intersection of heutagogy and security studies is an emerging field with limited direct empirical research, but significant theoretical alignment and indirect evidence from related disciplines. Even though not yet a mainstream term in security studies discourse, its principles are increasingly central to critical conversations about reforming security education. The field's recognition of complexity, human security, and the need for adaptive professionals creates fertile ground for heutagogy. The discourse is shifting from what security professionals need to know to how they need to learn and think, and heutagogy provides a robust framework for answering that question. The challenge lies in overcoming institutional inertia and translating theory into practice, but the alignment between heutagogical ideals and the demands of 21st-century security is profound and growing.

Heutagogy fosters autonomy, self-direction, and adaptability, which are critical in peace, conflict, and security-related educational settings. It empowers learners to reflect on specific experience, understand complex problems, and engage in solutions that are both relevant and sustainable. Those have proved to be important assets in post-conflict education, peacebuilding training, and crisis response, where heutagogy can help individuals and communities in taking ownership of their learning and their future.

Effective leadership in conflict resolution requires self-awareness, adaptability, and the ability to navigate complex social dynamics. Programs that emphasize leadership in peacebuilding often integrate heutagogical approaches, encouraging learners to self-direct their development. They encourage leaders to explore strategies, identify personal strengths and challenges, and adapt their knowledge to shifting political, social, and cultural contexts. These principles are equally vital at the grassroots level, where community members with firsthand experiences of violence often lead peacebuilding initiatives. By shaping their own learning paths and defining goals based on local needs, they apply heutagogy in ways that make conflict resolution, reconciliation, and

9 Rinaldi Rinaldi, Deni Wahyuni, and Isa Hamzah, "Heutagogy: Empirical Study on Conceptual Understanding, Self-Learning Awareness and Learning Outcomes," *INVOTEK: Journal Inovasi Vokasional Dan Teknologi* 22, no. 1 (2022).

peacebuilding both meaningful and contextually grounded.

In post-conflict societies, education is a crucial tool for healing and rebuilding. Heutagogical principles are often applied to enable individuals, especially those who have experienced violence or instability, to develop critical thinking and conflict resolution skills in a self-determined way. REFLECT (Regenerated Freirean Literacy through Empowering Community Techniques) is a training approach that empowers learners to develop entrepreneurial and team spirit to solve their problems. It has been used in post-conflict settings, facilitating learners' ability to reflect on community's needs, engage in problem-solving, and create solutions that resonate with their lived experiences, thus becoming active agents of their learning. The focus on self-determined learning in these programs helps students rebuild personal approach in contexts marked by trauma.

Peacebuilding efforts often rely on transformative learning that helps individuals and groups understand the roots of conflict and engage in healing processes. Learners can reflect on their local conflicts, assess various pathways to peace, and engage in dialogue, ultimately applying these insights to real-world settings with a greater degree of autonomy in shaping their learning experiences.

Crisis training in conflict-affected or disaster-prone areas often places participants in fast-changing scenarios where standard procedures may no longer be sufficient. Humanitarian workers, peacekeepers, and security personnel can benefit from heutagogical approaches that emphasize autonomy and adaptability. In addition to field-based simulations, short online courses such as those developed for rapid deploy ment training (e.g., https://setoff-project.eu), allow learners to access targeted knowledge while actively engaged in crisis response. These flexible modules encourage participants to experiment with different strategies, assess risks in real time, and reflect on their choices. By combining immediate access to digital learning with self-directed practice, trainees develop the capacity to make context-sensitive, adaptive decisions essential for emergencies such as sudden evacuations, refugee influxes, or natural disaster responses.

Recently, digital learning platforms (such as https://pve-ocea.undp.org/ and https://howtobuildup.org among others) are providing important opportunities for individuals in conflict-affected areas to engage with peacebuilding, human rights, and security topics in flexible and self-directed ways. Through online resources, learners can reflect on their personal and community circumstances, selecting content most relevant to their immediate needs and interests. Heutagogical principles are central to this process, as learners shape their own educational journey, building practical skills and insights that can be directly applied to conflict resolution and peacebuilding efforts within their communities.

HEUTAGOGY IN HIGHER EDUCATION

Heutagogy encourages students to take ownership of their learning, fostering a mindset geared toward continuous personal and professional development. This is essential in today's rapidly changing job market, where the ability to adapt and learn independently is crucial. Heutagogy supports lifelong learning by fostering:

Critical Thinking and Problem-Solving: Encouraging students to identify their learning needs, set goals, and adapt strategies enhances critical thinking and problem-solving skills, as they navigate complex situations independently[10].

Collaborative Learning: Engaging learners in knowledge-sharing communities, collaborating

10 Gowrie Vinayan and Davindran Harikirishanan, "Empowering Heutagogy for 21st Century Learning," *Systematic Literature Review and Meta-Analysis Journal* 2, no. 2 (2021).

with peers, sharing knowledge and resources not only enhances learning but also builds valuable skills necessary for the workforce. It provides students with tools to pursue information, connect with others, and engage in self-assessment, making education more accessible and flexible[11].

Technology Integration: Utilizing learning management systems (LMS), online forums, and open educational resources (OERs) for self-determined learning[12].

Flexible Assessment: Emphasizing self-assessment, peer evaluation, and reflective practices, the focus is shifted from traditional assessment methods to more holistic and formative approaches that allow students to demonstrate their learning in varied ways. Self-assessment, peer assessment, and reflective practices are vital components of this process.

By incorporating these heutagogy principles, institutions can equip students with competencies necessary for navigating the complexities of modern careers. Rather than just acquiring theoretical knowledge, students learn to apply their knowledge in practical, real-world situations[13].

There are several methodologies that support heutagogical learning. Following are the most common research methods for scientific analysis in the evolution of Heutagogy, according to:[14]

Self-determined Learning

Goal Setting: Encourage learners to set personal learning goals based on their interests and needs.

Reflection: Integrate regular reflective practices to help learners evaluate their progress and adjust their goals.

Resource Selection: Assist learners in identifying and selecting resources that align with their learning objectives.

Collaborative Learning

Peer Learning: Foster collaboration by encouraging students to work together on projects, enhancing shared knowledge.

Communities of Practice: Create spaces where learners can engage in discussions, share experiences, and support each other's learning journeys.

Technology Integration

Learning Management Systems (LMS): Leverage LMS platforms to empower learners in tracking their progress and accessing resources.

Online Communities and Forums: Use online platforms to facilitate discussions, exchange insights, and build connections among learners.

Experiential Learning

Real-World Projects: Involve learners in projects that reflect real-world scenarios, promoting the application of knowledge in practical contexts.

Problem-Based Learning (PBL): Present learners with complex, real-world problems to solve, fostering critical thinking and independent research[15].

Mentoring and Coaching

Facilitator Role: Instructors should act as facilitators, guiding learners in their exploration rather than serving as traditional teachers.

Feedback Mechanisms: Establish ongoing feedback systems that allow learners to adjust their strategies based on self-assessments.

11 Ibid.

12 Hase and Kenyon, "From Andragogy to Heutagogy."

13 Vinayan and Harikirishanan, "Empowering Heutagogy for 21st Century Learning."

14 D'Souza, "Understanding Heutagogy: A New 'Gogy'.

15 Ibid.

Inquiry-Based Learning:

Research Projects: Promoting independent research projects where learners explore topics of personal interest.

Socratic Questioning: Open-ended questions for stimulating critical thinking and deepening inquiry.

Multimodal Learning Approach

Variety of Resources: Offering a diverse range of materials (videos, podcasts, articles, books) to cater to different learning styles.

Gamification: Integrating game elements to make learning more engaging and promote self-determined learning.

Another important characteristic of heutagogy is double-loop learning, where learners confront their values and beliefs and adapt them, accordingly, basing their decisions on the information available. In this process, learners 'try to find the most competent people for the decision to be made and try to build viable decision-making networks in which the major function of the group would be to maximize the contributions of each, so that when a synthesis was developed, the widest possible exploration of views would have taken place'. Furthermore, students not only think deeply about a problem and the actions they have taken to solve it but also reflect upon the problem-solving process itself. Rather than using a single-loop model of learning in which the learner identifies a problem, acts, produces an outcome and then begins again with a new problem, double loop learning encourages students to reflect on their learning and to assess how it has changed their beliefs and actions and how they can apply what they have learned to other areas. Teachers become facilitators, not only leaders who sit back and let the students 'discover' their learning, but leaders who provide appropriate guidance, resources and models. The idea is that students will begin to question their assumptions and gain insight into not only what they are learning, but also how they learn.

HEUTAGOGY AND WEB-BASED LEARNING

Hase and Kenyon claim that heutagogy may be viewed as a natural progression from earlier educational methodologies – from capability development – and may well provide the optimal approach to learning in the twenty-first century[16]. Stephenson and Weil describe capable people as those who know how to learn, are creative, have a high degree of self-efficacy, can apply competencies in novel as well as familiar situations, and can work well with others[17]. In a globalized world where citizens must collaborate to address worldwide challenges, it is crucial to start at an early age in preparing them to become effective and capable problem-solvers. At the time that Stewart Hase and Chris Kenyon first introduced the concept of heutagogy, technology and education were not sufficiently well aligned to fully support a self-determined approach to learning. Just over a decade later, it is a different story[18].

We have entered the era of open educational resources, social media, massive open online courses, and digital badges—an age where learners have far more control over what, how, and where they learn, and where the institutional con-

16 Stewart Hase and Chris Kenyon. "From Andragogy to Heutagogy." *UltiBASE RMIT* (2000).

17 John Stephenson and Susan Weil, eds., *Quality in Learning: A Capability Approach in Higher Education* (London: Kogan Page, 1992).

18 Stewart Hase and Chris Kenyon. "From Andragogy to Heutagogy." *UltiBASE RMIT* (2000).

trol over accreditation is beginning to loosen. A transformation of higher education is unfolding – 'a colossal shift, toward informal and nontraditional learning pursuits chosen by the learner where much of the content is free and open and new technologies are paving the way'. Heutagogy provides a theoretical framework for considering these systems in a holistic way. The latest technologies serve as the agents for extending and supporting the framework, triggering renewed interest in heutagogy and the modalities in which these technologies support heutagogical practice.

By prioritizing a learner-centered environment that empowers students to define their own learning paths, heutagogy also equips them with essential skills for transitioning into the workforce. Employers seek employees who possess a broad range of cognitive and meta-cognitive abilities, such as creativity, innovation, self-direction, and an understanding of their own learning processes, all of which are core elements of the heutagogic approach. A heutagogical learning environment facilitates the development of learner competencies as well as development of the capability and capacity to learn.

Self-determined learning is at the heart of heutagogy. The Internet plays a crucial role in supporting and enhancing this form of learning, as it allows learners to access vast amounts of information and choose their own learning paths. Online education further facilitates this by making learning accessible anytime and anywhere. Open educational resources (OERs), such as the MIT Open Courseware, Khan Academy, and Harvard's Open Learning Initiative, expand learning opportunities by providing abundant and easily accessible course content for both learners and educators. Additionally, various media platforms – such as YouTube, video tutorials, chat rooms, and online forums – offer learners the flexibility to decide where, how, and what they will learn.

Heutagogy is closely linked to group collaboration, a hallmark of Web 2.0. While Web 1.0 was focused on the passive consumption of information and the creation of knowledge, Web 2.0 emphasizes user-driven design and the development of dynamic content. This shift highlights active learning, where learners create their own content, leading to greater engagement in the learning process. Social and community-based tools now support the construction of both individual and group knowledge. For instance, Google Docs allows learners to collaborate on classroom projects, building new content and knowledge together. Platforms like LinkedIn groups and other social networks also facilitate group collaboration and problem-solving. In such environments, anyone can learn anything from anyone, anytime.

The integration of heutagogy and web-based learning creates an environment that empowers learners. By providing learners with autonomy over their educational choices, web-based platforms facilitate self-determined learning. For instance, learners can choose specific online courses that align with their interests or career goals, allowing them to take control of their learning pathways.

Web-based learning platforms often include tools for collaboration, such as discussion forums, group projects, and peer assessments. Heutagogy thrives in collaborative environments, as learners can share experiences, insights, and knowledge. This peer interaction not only enhances understanding but also fosters a sense of community among learners[19].

19 Amiruddin Amiruddin et al., "Structural Model of Pedagogy-Andragogy-Heutagogy Continuum on Pedagogical Competencies of Indonesian Vocational High School Teacher," in *5th International Conference on Vocational Education and technology* (Singaraja, Bali, Indonesia: EAI, 2023).

Online learning systems can provide immediate feedback through quizzes and assessments. In a heutagogy context, this feedback encourages learners to reflect on their performance and adapt their learning strategies[20]. Learners can assess their progress and adjust their goals, promoting a cycle of continuous improvement. Access to diverse online resources caters to various learning preferences, supporting the self-determined aspect of heutagogy. Learners can choose materials that resonate with their learning styles, enhancing engagement and retention of information. Additionally, the vast array of resources available online encourages learners to explore beyond their curriculum, fostering curiosity and intrinsic motivation[21].

Web-based learning platforms can utilize algorithms and learner analytics to tailor educational experiences. By analyzing a learner's progress and preferences, these platforms can suggest personalized content that aligns with their individual needs. This adaptability is a cornerstone of heutagogy, enabling learners to shape their educational journeys according to their interests and goals.

To benefit from web-based learning, students must possess a certain level of digital literacy. This includes the ability to navigate online platforms, critically evaluate information, and engage with digital tools. Educational institutions may need to provide foundational training to ensure all learners can participate effectively[22].

Heutagogy principles in ADL

Advanced Distributed Learning (ADL, https://www.adlnet.gov) is a U.S. Department of Defense (DoD) initiative launched in the late 1990s with the objective of modernizing military education and training. At its core, ADL seeks to leverage digital technologies and interoperable standards to deliver high-quality, reusable, and adaptive training across diverse military and civilian contexts. By moving beyond traditional classroom models, ADL provides a framework for anytime-anywhere learning, supporting the needs of a modern, globally distributed force. Its central philosophy lies in maximizing both the efficiency of training delivery and the effectiveness of learning outcomes through technology-enabled methods.

The military application of ADL is particularly significant because of the distributed nature of forces and the high demand for adaptable leaders. ADL enables cadets, officers, and non-commissioned personnel to access the same standardized materials across different locations, ensuring both consistency and adaptability. Officer cadets may complete modules on operational ethics, crisis decision-making, or leadership prior to engaging in field simulations.The system allows for rapid updates of training content, ensuring that emerging doctrines, technologies, or operational lessons are immediately reflected in educational curricula.

ADL is not a single system but an ecosystem that combines pedagogical innovation with technological infrastructure. Among its most notable features are:

Learning Standards and Interoperability: ADL developed SCORM (Sharable Content Object Reference Model), a widely used standard that ensures training modules are interoperable across platforms. More recently, the xAPI (Experience API) standard has enabled the capture of fine-grained learner activity data across simulations, mobile applications, and real-world tasks.

Distributed and Modular Content: Training is

20 Ibid.

21 Blaschke, "Heutagogy and Lifelong Learning: A Review of Heutagogical Practice and Self-Determined Learning."

22 Ibid.

Heutagogical principle	ADL feature supporting it
Self-determined learning	Learners can choose modules, learning pace, and sequence.
Capability over competency	ADL simulations and virtual exercises allow learners to practice applying knowledge in complex, dynamic situations.
Reflection & metacognition	xAPI and analytics provide feedback that learners can use to self-assess and adjust strategies.
Non-linear learning	Adaptive learning paths let learners explore topics as needed rather than following rigid sequences.
Collaborative learning	ADL supports team-based exercises, forums, and shared simulations.

Table 2. Heutagogical principles in ADL

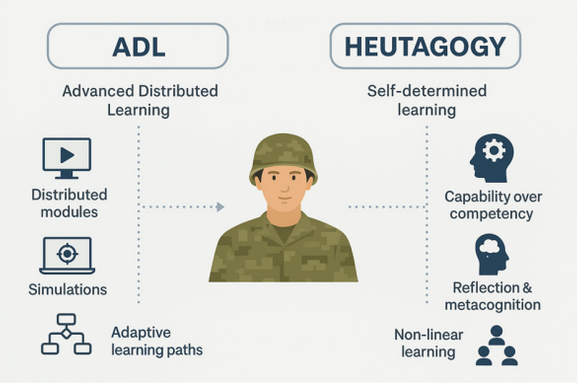

Figure 2. Heutagogical principles in ADL

delivered in smaller, reusable learning objects that can be assembled into personalized pathways.

Adaptive Learning Paths: ADL supports tailoring of instructional sequences based on individual learner performance, motivation, or prior knowledge.

Simulations and Virtual Environments: High-fidelity simulations, serious games, and immersive environments are used to train complex decision-making skills, particularly relevant in crisis and combat scenarios.

Learning Analytics: Data collected through ADL platforms enables instructors and institutions to measure progress, adapt content, and evaluate readiness.

Although ADL emerged from a technology-driven perspective, its design strongly aligns with the principles of heutagogy, emphasizing self-determined learning, learner autonomy, and developing capability rather than just competency. An overview of how heutagogy resonates with the ADL approach to learning is given in Table 2, and the parallel between the two is presented visually in Figure 2.

It should be recognized that, even though ADL supplements, it cannot fully replace experiential, field-based training, particularly in leadership and crisis decision-making. While it provides the technological scaffolding for implementing heutagogical approaches in military education, it doesn't replace the teacher or training officer but empowers learners to direct their learning and apply it in realistic contexts, which resonates

well with the heutagogy principles. Heutagogy requires highly motivated, self-directed learners, and ADL platforms are the tools that support self-directed environments. By fostering self-determined learning and capability development, ADL not only modernizes how training is delivered but also supports the cultivation of adaptive leaders prepared for the uncertainty and complexity of contemporary security environments.

PRACTICAL APPLICATIONS AND INSIGHTS

While web-based learning promotes flexibility, it can also lead to overwhelming options for learners. Institutions must help students navigate this landscape, encouraging them to focus on specific goals and avoid the pitfalls of information overload.

The SIDE model is considered the best practice for implementing a heutagogic approach in online learning. SIDE stands for Students, Instructors, Design, and Experiential Learning, offering a framework for transitioning from informal to formal learning contexts when necessary[23]. This model can be applied in all types of institutions, including military educational settings. By adopting the SIDE model, institutions, instructional designers, and educators can incorporate heutagogy into their learning environments, potentially im

proving retention rates in online education. The model outlines the evolving roles of students, the reassessment of instructor control, the core principles of heutagogic instructional design, and the experiential factors that should be considered when teaching and learning in this approach.

In a military context, the implementation of heutagogy could be applied in the planning and execution phases of a joint military exercise. Rather than following a traditional instructor-led model, the training could be designed to foster self-determined learning, where soldiers are given the responsibility to develop their own learning pathways based on the mission objectives.

Phase 1: Preparation

Instead of receiving a detailed, top-down instruction plan, soldiers could be tasked with researching various aspects of the operations such as tactics, technology, logistics, or cultural considerations of the region. They would be encouraged to explore resources on their own (e.g., military doctrine, case studies, and expert analyses) and create a personalized learning plan.

Phase 2: Collaborative Learning

During the planning phase, soldiers would collaborate in small teams to discuss their findings and propose solutions for potential challenges that might arise during the operation. The role of the instructor or senior officer would be that of a facilitator—providing guidance on key concepts, posing questions, and encouraging group discussions rather than delivering lectures.

Phase 3: Execution and Reflection

During the joint exercise, soldiers would engage in real-time decision-making, using their self-acquired knowledge to navigate unexpected situations. After the exercise, they would participate in reflective practices—assessing their learning experiences, discussing what strategies worked, what didn't, and how to adjust in future scenarios. The instructor's role would be to facilitate a post-exercise debrief, encouraging self-assessment and peer feedback. In this model, the soldiers' autonomy in learning and their ability to adapt and think critically under pressure are emphasized. This approach not only helps them acquire the necessary skills for military planning

23 Nurit Chamo, Liat Biberman-Shalev, and Orit Broza, "'Nice to Meet You Again': When Heutagogy Met Blended Learning in Teacher Education, Post-Pandemic Era," *Education Sciences MDPI* 13, no. 6 (2023).

but also nurtures a mindset of continuous learning and self-improvement, essential in dynamic and unpredictable combat environments.

Examples of Heutagogy in Web-Based Learning

Coursera, a leading online learning platform, exemplifies the principles of heutagogy by offering a plethora of courses from top universities. Learners have autonomy in selecting courses, determining their learning pace, and pursuing topics of interest. Furthermore, Coursera's peer review system fosters collaboration and critical reflection, aligning well with heutagogy principles[24].

Duolingo is a language learning app that effectively integrates gamification with self-determined learning. Users can set their own goals, choose their learning paths, and track their progress. The app provides immediate feedback, encouraging learners to adapt their strategies. Duolingo's dynamic and interactive platform exemplifies how heutagogy can thrive in a web-based environment.

Khan Academy offers a flexible learning platform where users can access a vast range of subjects and resources. The platform's mastery-based approach enables learners to progress at their own pace, fostering self-determination. Additionally, Khan Academy provides tools for tracking progress and reflecting on learning, supporting the principles of heutagogy.

Distance education aligns particularly well with the heutagogic approach due to its inherent focus on promoting learner autonomy, its traditional emphasis on adult learners, and its evolving relationship with technology—characteristics that are central to heutagogy. This alignment positions distance education uniquely to provide a sustainable environment for exploring, researching, and evaluating this teaching and learning method, as well as assessing the suitability of heutagogy as a foundational theory for distance education.

CONCLUSION

While pedagogy and andragogy provide structured frameworks for teaching children and adults, respectively, heutagogy expands the learner's agency, focusing on self-determined and autonomous learning, which is increasingly relevant in our rapidly changing, information-rich world. The integration of heutagogy into higher education can enhance the learning experience by promoting autonomy, collaboration, and relevance[25]. Institutions that embrace this approach can cultivate self-determined learners who are better prepared for lifelong learning and adaptable to the evolving demands of their professional environments. As education continues to evolve, heutagogy may play an increasingly critical role in shaping effective teaching and learning practices[26].

By providing a pragmatic understanding of andragogy and heutagogy and placing the PAH Continuum in a wider context, Pierre Bourdieu's 'theory of practice' can be associated and extended to the virtual world of learning. Heutagogy can be viewed as a crucial response to the affordances of Web 2.0, offering insights into new modes of learning within the evolving public context of our

24 Michael Lynch et al., "A Heutagogical Approach for Assessment of Internet Communication Technology (Ict) Assignments in Higher Education," *International Journal of Educational Technology in Higher Education* 18 (2021).

25 Victoria I Marín, "Student-Centred Learning in Higher Education in Times of Covid-19: A Critical Analysis," *Studies in Technology Enhanced Learning* 2, no. 2 (2022).

26 Vinayan and Harikirishanan, "Empowering Heutagogy for 21st Century Learning."

shift from social hierarchies to social networks[27]. To meet the demands of a networked digital society, we must design new approaches to learning and create learning environments that reflect this emerging reality, rather than the traditional, industrial model. Heutagogy, both as a learning approach and a way of thinking, serves as the missing link in this transformation[28].

By incorporating heutagogical practices, educators can better prepare students for the workplace and lifelong learning while fostering motivation and engagement. When students take charge of their learning, they become more invested in subjects that are personally relevant and interesting[29]. Soon, heutagogy will not only be a viable approach for higher education and scientific institutions but could also prove to be a highly practical model for military education.

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28 Linus Mwinakar and Jane-Frances Yirdong Lonibe, "Heutagogy as an Alternative in Teacher Education; Conceptions of Lecturers and Pre-Service Teachers at School of Education and Life-Long Learning," *Frontiers in Education* 9 (2024).

29 Stephen R Perchard, "Engagement through Emancipation, Empowerment, and Equity: Heutagogy and the 21st-Centiry Classroom" (Western University, 2022).

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