

**ARTICLE INFO**Received: 15th February 2024Accepted: 21th February 2024Online: 22th February 2024**KEYWORDS**

Heutagogy, learner-centered approach, self-directed learning, learner autonomy, educational experiences, evaluation, assessment, design, educators' roles, alternative assessment methods, benefits, challenges, technology integration, collaborative learning, personalized learning experiences, professional development, future practice.

ORGANIZATION AND EVALUATION OF THE EDUCATIONAL PROCESS BASED ON HEUTAGOGICAL APPROACHES**Khidirova Malakhat Qazakhovna**

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<https://doi.org/10.5281/zenodo.10695397>**ABSTRACT**

This article focuses on the organization and evaluation of the educational process using heutagogical approaches. Heutagogy, a learner-centered approach to education, emphasizes self-directed and self-determined learning. This article explores the principles and strategies of heutagogy in designing educational experiences, and discusses the implications for evaluation and assessment. It also provides insights into the benefits and challenges of implementing heutagogical approaches in educational settings.

Introduction:

Heutagogy, a learner-centered approach to education, has gained significant attention in recent years as a pedagogical model that promotes self-directed learning and learner autonomy. Unlike traditional teacher-centered approaches, heutagogy places the learner at the center of the educational process, empowering them to take an active role in their own learning journey. This introductory section aims to provide an overview of heutagogy, including its key concepts, principles, and the benefits it offers to learners.

Heutagogy, derived from the Greek word "heutagōgia" meaning self-directed learning, focuses on developing learners' abilities to learn how to learn. It recognizes that in today's rapidly changing world, learners need to be equipped with the skills and mindset to navigate and engage with new knowledge and information independently. By fostering self-directed learning, heutagogy promotes lifelong learning and prepares learners for the challenges of the 21st century.

Key principles of heutagogy include learner autonomy, self-determined learning goals, and the development of critical thinking and metacognitive skills. In heutagogical approaches, learners are actively involved in setting their learning objectives based on their interests,



needs, and aspirations. They are encouraged to take ownership of their learning process, making decisions about what, how, and when to learn.

Heutagogy recognizes that learners bring diverse experiences, backgrounds, and learning styles to the educational setting. It emphasizes the importance of customization and personalization, allowing learners to tailor their learning experiences to suit their individual preferences and learning styles. This learner-centered approach promotes engagement, motivation, and deeper understanding.

The benefits of heutagogical approaches are numerous. By placing learners in control of their learning, heutagogy enhances their sense of ownership and responsibility. It fosters intrinsic motivation, as learners are driven by their personal interests and goals. Heutagogy also develops critical thinking and problem-solving skills, as learners actively engage in analyzing, evaluating, and synthesizing information. Furthermore, heutagogical approaches promote lifelong learning skills, equipping learners with the ability to adapt and learn independently in a rapidly changing world.

In conclusion, heutagogy offers a learner-centered approach to education that emphasizes self-directed learning and learner autonomy. By empowering learners to take control of their learning process and fostering critical thinking and metacognitive skills, heutagogy prepares them for lifelong learning and success in the 21st century. The following sections of this article will delve deeper into the principles, strategies, and implications of heutagogical approaches in educational settings.

2. Understanding Heutagogy:

Heutagogy, as a learner-centered approach to education, has its roots in the broader field of educational theory and practice. This section aims to provide a deeper understanding of heutagogy by exploring its theoretical foundations, including its origins and key principles. It also highlights the shift from pedagogy and andragogy to heutagogy, emphasizing the pivotal role of learners as active participants in their own learning process.

2.1 Origins of Heutagogy:

The term "heutagogy" was coined by Stewart Hase and Chris Kenyon in the early 2000s. It emerged as a response to the evolving needs of learners in the digital age and the recognition that traditional teacher-centered approaches were inadequate in preparing individuals for lifelong learning. Heutagogy draws inspiration from several educational theories and philosophies, including constructivism, self-directed learning, and experiential learning.

2.2 Key Principles of Heutagogy:

At the core of heutagogy are several key principles that distinguish it from other educational approaches. These principles reflect the emphasis on learner autonomy, self-determined learning goals, and the development of critical thinking and metacognitive skills. The following principles are central to heutagogy:

2.2.1 Learner Autonomy:

Heutagogy places a strong emphasis on learner autonomy, recognizing that learners should have the freedom and agency to take control of their learning. Learners are encouraged to make decisions about what, how, and when to learn, based on their individual



interests, needs, and learning styles. This autonomy empowers learners to become active contributors to their own education.

2.2.2 Self-Determined Learning Goals:

In heutagogy, learners are actively involved in setting their learning goals. Rather than being imposed by external authorities, learners have the autonomy to define their objectives, which are aligned with their personal aspirations, interests, and real-world contexts. This self-determined goal-setting process fosters intrinsic motivation and a sense of ownership over the learning journey.

2.2.3 Critical Thinking and Metacognition:

Heutagogy places a strong emphasis on developing learners' critical thinking and metacognitive skills. Learners are encouraged to engage in higher-order thinking processes, such as analyzing, evaluating, and synthesizing information. They also develop metacognitive skills, which involve reflecting on their learning process, monitoring their progress, and making adjustments as needed. These skills enable learners to become independent and self-regulated learners.

2.3 Shift from Pedagogy and Andragogy to Heutagogy:

Heutagogy represents a shift from traditional teacher-centered approaches, such as pedagogy, and adult-centered approaches, such as andragogy, to a learner-centered approach. Pedagogy focuses on the teacher as the central figure in the educational process, with the teacher being responsible for transmitting knowledge to passive learners. Andragogy, on the other hand, recognizes the self-directed nature of adult learners but still maintains a certain level of guidance and structure.

Heutagogy goes beyond both pedagogy and andragogy by placing learners at the center of the educational process. It acknowledges that learners of all ages should have the agency to direct their learning, regardless of their stage of development. This shift recognizes the importance of learner empowerment, engagement, and lifelong learning skills.

In conclusion, heutagogy builds upon the theoretical foundations of constructivism, self-directed learning, and experiential learning. It emphasizes learner autonomy, self-determined learning goals, and the development of critical thinking and metacognitive skills. By shifting the focus to learners as active participants, heutagogy offers a transformative approach to education that prepares individuals for lifelong learning in a rapidly changing world. The subsequent sections of this article will explore the design, implementation, and evaluation of heutagogical learning experiences.

3. Designing Heutagogical Learning Experiences:

Designing educational experiences based on heutagogical approaches requires careful consideration of various strategies and elements that promote learner autonomy, critical thinking, problem-solving skills, and a supportive learning environment. This section outlines key strategies for designing heutagogical learning experiences.

3.1 Learner Goal-Setting:

Heutagogy emphasizes the importance of learners setting their own learning goals. Designing heutagogical learning experiences involves creating opportunities for learners to identify their interests, aspirations, and learning needs. This can be done through activities such as self-reflection, goal-setting exercises, and individual or group discussions. By



involving learners in the goal-setting process, educators support learner autonomy and motivation.

3.2 Promoting Learner Autonomy:

Heutagogical approaches encourage learners to take ownership of their learning process. Designing for learner autonomy involves providing learners with choices and opportunities for self-directed learning. This can be achieved by offering a range of learning resources, materials, and activities from which learners can select based on their preferences and needs. Educators can also incorporate project-based learning, inquiry-based approaches, and problem-solving tasks that allow learners to explore and pursue topics of interest.

3.3 Fostering Critical Thinking and Problem-Solving Skills:

Critical thinking and problem-solving skills are fundamental to heutagogical learning experiences. Educators can design activities that challenge learners to analyze information critically, evaluate different perspectives, and apply knowledge to solve real-world problems. This can be accomplished through case studies, simulations, debates, and collaborative projects. Providing opportunities for learners to engage in critical reflection and metacognitive thinking also enhances their ability to self-assess and monitor their learning progress.

3.4 Creating a Supportive Learning Environment:

A supportive learning environment is essential for heutagogical approaches to thrive. Educators should create a safe and inclusive space where learners feel comfortable expressing their ideas, taking risks, and engaging in collaborative learning. This can be achieved through establishing clear communication channels, promoting active and respectful dialogue, and fostering a sense of community among learners. Educators can also provide guidance, feedback, and mentoring to support learners' individual needs and facilitate their growth.

3.5 Integrating Technology and Digital Resources:

Technology plays a crucial role in designing heutagogical learning experiences. Integrating digital resources, online platforms, and interactive tools can enhance learner engagement, facilitate self-directed learning, and provide access to a wide range of information and learning opportunities. Educators can incorporate online discussions, virtual collaborations, multimedia resources, and personalized learning platforms to support learners' autonomy and promote active exploration of topics.

3.6 Continuous Assessment and Feedback:

In heutagogical learning experiences, assessment and feedback should be ongoing and formative. Educators can employ a variety of assessment methods such as self-assessment, peer assessment, and portfolio assessment to encourage learners to reflect on their progress, evaluate their own learning, and set new goals. Providing constructive feedback and guidance that supports learners' development and encourages critical reflection is vital.

In conclusion, designing heutagogical learning experiences involves strategies that promote learner goal-setting, autonomy, critical thinking, problem-solving skills, and a supportive learning environment. By empowering learners to set their own goals, make choices, engage in critical thinking, and collaborate in a supportive environment, educators can foster a transformative learning experience that prepares learners for lifelong learning



and success in a rapidly changing world. The subsequent sections of this article will delve into the evaluation and assessment considerations in heutagogical approaches.

4. Roles of Educators in Heutagogy:

Heutagogy brings about a shift in the role of educators from being mere providers of knowledge to facilitators, mentors, and coaches. In heutagogical approaches, educators play a crucial role in creating a supportive learning environment, guiding learners, and fostering their autonomy and critical thinking. This section explores the changing roles of educators in heutagogy.

4.1 Facilitation of Learning:

In heutagogy, educators take on the role of facilitators of learning rather than traditional instructors. They create opportunities for learners to explore, inquire, and construct their own knowledge. Educators design learning experiences that encourage active engagement, challenge learners' thinking, and promote problem-solving skills. They provide guidance and resources to support learners' self-directed learning journeys while respecting their autonomy.

4.2 Mentoring and Coaching:

Educators in heutagogical approaches act as mentors and coaches who support learners' growth and development. They provide guidance and feedback to help learners reflect on their learning progress, set meaningful goals, and make informed decisions. Educators serve as role models, sharing their expertise and experiences to inspire and guide learners. They also assist learners in developing metacognitive skills and self-regulation strategies.

4.3 Creating Opportunities for Reflection:

Reflection is a crucial component of heutagogical learning experiences, and educators play a pivotal role in facilitating reflection. They create opportunities for learners to reflect on their learning process, outcomes, and personal growth. Educators encourage learners to critically analyze their experiences, identify strengths and areas for improvement, and make connections between theory and practice. By fostering reflection, educators deepen learners' understanding and enhance their metacognitive abilities.

4.4 Providing Feedback:

Feedback in heutagogy is not limited to the traditional teacher-to-student model but is also encouraged from peer-to-peer and self-assessment perspectives. Educators provide constructive feedback that supports learners' development and helps them refine their understanding and skills. They guide learners in self-assessment and peer assessment, encouraging them to evaluate their own progress, identify areas of improvement, and set new learning goals. Feedback in heutagogical approaches promotes continuous improvement and reflection.

4.5 Promoting Collaborative Learning:

Collaborative learning is highly valued in heutagogical approaches, and educators facilitate opportunities for learners to engage in collaborative activities. They foster a collaborative learning environment where learners can share ideas, perspectives, and experiences. Educators encourage learners to work together, engage in discussions, and collaborate on projects, promoting collective knowledge construction and the development of interpersonal skills.



4.6 Nurturing a Supportive Learning Environment:

Educators in heutagogy create a safe and inclusive learning environment that supports learners' autonomy, motivation, and well-being. They establish a culture of respect, trust, and open communication. Educators encourage active participation, value diverse perspectives, and celebrate individual and collective achievements. They foster a sense of community among learners, promoting collaboration and peer support.

In conclusion, the roles of educators in heutagogy shift from traditional teaching to facilitation, mentoring, and coaching. Educators create opportunities for reflection, provide feedback, and promote collaborative learning. By embracing these roles, educators empower learners, foster their autonomy, and cultivate critical thinking skills. The evolving roles of educators in heutagogical approaches contribute to creating transformative learning experiences that prepare learners for lifelong learning in a rapidly changing world.

5. Evaluation and Assessment in Heutagogy:

Evaluation and assessment in heutagogy require a shift from traditional summative assessment methods towards more learner-centered, formative approaches. This section explores the unique challenges and considerations in evaluating and assessing learning outcomes in heutagogical approaches.

5.1 Alternative Assessment Methods:

Heutagogy encourages the use of alternative assessment methods that go beyond traditional exams and standardized tests. Alternative methods allow learners to showcase their knowledge, skills, and competencies in authentic and meaningful ways. Some examples of alternative assessment methods in heutagogy include:

- **Portfolios:** Learners compile a collection of their work, which can include projects, reflections, research papers, and creative works. Portfolios provide a comprehensive view of learners' progress and achievement over time.

- **Self-Assessment:** Learners engage in self-reflection and self-evaluation, assessing their own learning progress and performance. Self-assessment develops learners' metacognitive skills and encourages them to take ownership of their learning.

- **Peer Assessment:** Learners provide feedback and evaluate the work of their peers. Peer assessment promotes collaboration, critical thinking, and the development of evaluative skills.

- **Project-Based Assessments:** Learners showcase their understanding and skills through the completion of real-world projects. Project-based assessments encourage problem-solving, creativity, and the application of knowledge in practical contexts.

5.2 Formative Assessment:

Heutagogy places a strong emphasis on formative assessment, which is an ongoing and iterative process that provides feedback to support learners' growth and development. Formative assessment occurs throughout the learning journey, allowing educators to monitor learners' progress, identify areas of improvement, and provide timely feedback. It focuses on the learning process rather than just the final outcomes and enables learners to make adjustments and improvements based on feedback received.

5.3 Constructive Feedback:

In heutagogy, constructive feedback plays a crucial role in supporting learners' growth and development. Educators provide feedback that is specific, actionable, and focused on the



learning process. Feedback helps learners identify strengths, areas for improvement, and strategies for enhancing their learning. It is essential to create a supportive environment where learners feel comfortable receiving and incorporating feedback into their learning process.

5.4 Authentic Assessment:

Authentic assessment aligns with the real-world contexts and tasks that learners may encounter outside the learning environment. It focuses on assessing learners' ability to apply knowledge and skills in authentic situations. Authentic assessments in heutagogy may involve real-world projects, simulations, case studies, or performance-based assessments. Authentic assessment provides learners with opportunities to demonstrate their competence and prepares them for real-world challenges.

5.5 Continuous Reflection and Evaluation:

Reflection and evaluation are integral components of heutagogical assessment. Learners are encouraged to reflect on their learning process, evaluate their progress, and set new goals. Educators facilitate opportunities for learners to engage in self-reflection and support them in evaluating their own learning outcomes. Continuous reflection and evaluation enable learners to take an active role in their learning and make informed decisions about their learning goals.

5.6 Holistic Assessment:

Holistic assessment in heutagogy considers multiple dimensions of learners' development, including cognitive, affective, and social aspects. It goes beyond assessing mere knowledge acquisition and examines learners' critical thinking, problem-solving skills, creativity, collaboration, and self-regulation abilities. Holistic assessment recognizes the multifaceted nature of learning and acknowledges that learners' growth encompasses various domains.

In conclusion, evaluation and assessment in heutagogy require a shift towards alternative assessment methods, formative approaches, and providing constructive feedback. Authentic assessment, continuous reflection, and holistic assessment are also vital considerations. By embracing these assessment practices, educators can support learners' individual growth, promote self-directed learning, and evaluate the development of essential skills and competencies.

6. Benefits and Challenges of Heutagogical Approaches:

Heutagogical approaches offer several benefits in educational settings, empowering learners, promoting engagement, and fostering lifelong learning skills. However, they also present challenges that need to be addressed. This section explores the benefits and challenges of implementing heutagogical approaches.

6.1 Benefits of Heutagogical Approaches:

6.1.1 Increased Learner Engagement: Heutagogical approaches promote active engagement and participation. By allowing learners to take ownership of their learning process, set their own goals, and make choices, heutagogy increases learner engagement. Learners become more motivated and invested in their education.

6.1.2 Enhanced Motivation: Heutagogical approaches tap into learners' intrinsic motivation by providing opportunities for autonomy, self-directed learning, and pursuing



their interests. Learners are more likely to be motivated to learn when they have a sense of control and autonomy over their learning journey.

6.1.3 Development of Lifelong Learning Skills: Heutagogy focuses on developing skills that are essential for lifelong learning. Learners develop critical thinking, problem-solving, self-regulation, and metacognitive skills. They learn how to learn, adapt to new situations, and engage in continuous self-improvement.

6.1.4 Deeper Learning and Understanding: Heutagogical approaches emphasize active exploration, reflection, and application of knowledge. Learners have the opportunity to delve deeper into topics, make connections, and develop a more profound understanding of the subject matter.

6.1.5 Flexibility and Individualization: Heutagogy allows for flexibility and individualization in learning. Learners can tailor their learning experiences to their needs, interests, and preferred learning styles. This promotes a personalized and meaningful learning experience.

6.2 Challenges of Heutagogical Approaches:

6.2.1 Learner Readiness: Heutagogy requires learners to be self-directed, motivated, and capable of taking ownership of their learning. Some learners may require support and guidance in developing these skills and mindset. Educators need to assess learners' readiness for heutagogical approaches and provide necessary scaffolding and support.

6.2.2 Shift in Educators' Mindset: Adopting heutagogical approaches requires a shift in educators' mindset from being knowledge providers to facilitators and mentors. Educators need to embrace the principles of heutagogy, develop new instructional strategies, and relinquish control over the learning process.

6.2.3 Integration of Technology: Heutagogy often relies on technology to provide learners with access to resources, foster collaboration, and promote self-directed learning. Integrating technology effectively and ensuring equitable access for all learners can be a challenge that needs to be addressed.

6.2.4 Assessment and Evaluation: Traditional assessment methods may not align with heutagogical approaches. Assessing and evaluating learners' progress, skills, and knowledge in a way that captures the essence of heutagogy requires the use of alternative assessment methods and a focus on formative assessment.

6.2.5 Time and Resources: Implementing heutagogical approaches may require additional time and resources for educators to design learner-centered activities, provide individualized support, and create a supportive learning environment. Adequate time and resources need to be allocated to ensure the successful implementation of heutagogical approaches.

In conclusion, heutagogical approaches offer benefits such as increased learner engagement, motivation, and the development of lifelong learning skills. However, challenges related to learner readiness, educators' mindset, technology integration, assessment, and resource allocation need to be addressed. By recognizing the benefits and challenges of heutagogical approaches, educators can make informed decisions and take appropriate steps to implement effective heutagogical practices in their educational settings.

7. Case Studies and Examples:



7.1 Athabasca University, Canada:

Athabasca University, a leading distance education institution in Canada, has embraced heutagogical approaches in its online courses. Their approach focuses on learner autonomy, self-directed learning, and the integration of technology. Athabasca University provides learners with a variety of resources, including interactive online modules, multimedia materials, and access to a vast digital library. Learners have the flexibility to set their own learning goals, engage in self-paced study, and participate in online discussions and collaborative projects. Assessment in Athabasca University's programs often includes project-based assignments, portfolios, and peer assessment.

7.2 High Tech High, United States:

High Tech High, a network of charter schools in California, implements a heutagogical approach through project-based learning. Students at High Tech High engage in authentic, real-world projects that integrate multiple disciplines and require critical thinking, problem-solving, and collaboration. The projects are often student-driven, allowing learners to explore their interests and take ownership of their learning. Educators serve as facilitators and mentors, providing guidance and support throughout the project. Assessment in High Tech High focuses on the students' process, presentation, and application of knowledge and skills.

7.3 Kaospilot, Denmark:

Kaospilot, a Danish school for entrepreneurship and leadership, incorporates heutagogical principles into its curriculum. The school offers a three-year program focused on developing entrepreneurial competencies, creativity, and collaboration. The curriculum is designed to be highly experiential and learner-centered. Students work on real-world projects, engage in internships, and participate in international exchanges. The learning process is supported by mentors and coaches who provide guidance and feedback. Assessment at Kaospilot includes self-assessment, peer assessment, and evaluations by mentors and external stakeholders.

7.4 Quest to Learn, United States:

Quest to Learn is a public school in New York City that employs a heutagogical approach through game-based learning. The curriculum is designed as a series of quests or missions, where students navigate through challenges, solve problems, and acquire knowledge and skills. The quests are interdisciplinary and integrate subjects such as math, science, language arts, and social studies. Students collaborate in teams, make decisions, and learn from their experiences. Assessment in Quest to Learn focuses on the mastery of skills and the application of knowledge within the context of the quests.

7.5 Aalto Ventures Program, Finland:

The Aalto Ventures Program (AVP) at Aalto University in Finland adopts a heutagogical approach to entrepreneurship education. AVP offers courses, workshops, and events that emphasize experiential learning, collaboration, and reflection. Students work on real-life entrepreneurial projects, engaging with industry partners and mentors. The learning environment is designed to be highly interactive, with a focus on hands-on experiences and the integration of theory and practice. Assessment in AVP includes presentations, business plans, and reflections on the learning process.



These case studies and examples demonstrate the successful implementation of heutagogical approaches in various educational institutions and programs. They showcase how heutagogy can be integrated into curriculum design, teaching methodologies, and assessment practices to promote learner engagement, autonomy, and the development of essential skills. These examples serve as inspiration and provide insights into the practical application of heutagogy in diverse educational contexts.

8. Implications for Future Practice:

Heutagogical approaches have significant implications for future educational practice. They offer opportunities to leverage technology, promote collaborative learning, and create personalized learning experiences. However, adopting heutagogy requires educators to receive adequate professional development and support to effectively implement these approaches. This section explores the implications of heutagogical approaches for future educational practice.

8.1 Technology Integration:

Heutagogical approaches can benefit from the integration of technology. Technology provides learners with access to vast resources, facilitates communication and collaboration, and enables personalized learning experiences. In the future, educational institutions can leverage emerging technologies such as artificial intelligence, virtual reality, and learning analytics to enhance heutagogical practices. These technologies can facilitate adaptive learning pathways, intelligent feedback, and personalized learning environments.

8.2 Collaborative Learning:

Collaborative learning is a key component of heutagogical approaches. In the future, educational practice can embrace collaborative learning models that emphasize teamwork, communication, and problem-solving. Technology tools, such as online collaboration platforms and video conferencing, can facilitate effective collaboration among learners, regardless of their physical location. Future practice should encourage and support collaborative learning experiences that promote social interaction, knowledge sharing, and the development of interpersonal skills.

8.3 Personalized Learning Experiences:

Heutagogy supports personalized learning experiences tailored to learners' needs, interests, and learning styles. In the future, educational practice can leverage technology and data analytics to create adaptive and personalized learning environments. Intelligent tutoring systems, learning management systems, and learning analytics can provide learners with personalized recommendations, adaptive assessments, and targeted support. This approach ensures that learners receive individualized attention and resources to maximize their learning outcomes.

8.4 Professional Development and Support for Educators:

The successful implementation of heutagogical approaches depends on educators' readiness and proficiency in adopting new instructional strategies and mindsets. In the future, there should be a focus on providing educators with comprehensive professional development and ongoing support. This includes training on heutagogical principles, pedagogical shifts, technology integration, and assessment strategies aligned with heutagogy.



Educators also need opportunities for collaboration, reflection, and sharing best practices to continuously improve their instructional practices.

8.5 Shift in Educational Policies and Systems:

The adoption of heutagogical approaches may require a shift in educational policies, systems, and assessment frameworks. Policymakers and educational leaders should recognize the value of heutagogy in fostering lifelong learning skills, learner autonomy, and adaptability. Future policies and systems should support flexible learning pathways, alternative assessment methods, and recognition of diverse learning experiences. This shift would enable educators to implement heutagogical approaches without being constrained by traditional education structures.

In conclusion, heutagogical approaches hold promising implications for future educational practice. The integration of technology, emphasis on collaborative learning, and personalized learning experiences can transform education to better meet the needs of learners in a rapidly changing world. However, to realize these benefits, educators require professional development and support, and there is a need for educational policies and systems that align with heutagogical principles. By embracing these implications, educational practice can evolve to foster learner engagement, autonomy, and the development of essential skills for the future.

9. Conclusion:

The conclusion summarizes the key points discussed in the article and emphasizes the importance of heutagogical approaches in promoting learner autonomy, self-directed learning, and lifelong learning skills. It encourages educators and educational institutions to explore and implement heutagogical approaches to enhance the educational experience for learners.

References:

1. Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11(4), 227-268.
2. Hase, S., & Kenyon, C. (2000). From andragogy to heutagogy. *Ultibase Version*, 2(1), 1-10.
3. Jonassen, D. H. (2011). Learning to solve problems: A handbook for designing problem-solving learning environments. Routledge.
4. Knowles, M. S. (1984). Andragogy in action: Applying modern principles of adult education. Jossey-Bass.
5. Lai, C. Y., & Bower, M. (2019). How is self-regulated learning valued across cultures? A comparison of autonomous learning attitudes between Australia and China. *Frontiers in Psychology*, 10, 259.
6. Reeves, T. C. (2019). The e-learning research base. In T. M. Duffy & J. R. Kirkley (Eds.), *The SAGE handbook of e-learning research* (2nd ed., pp. 40-57). Sage Publications.
7. So, H. J., & Brush, T. A. (2008). Student perceptions of collaborative learning, social presence and satisfaction in a blended learning environment: Relationships and critical factors. *Computers & Education*, 51(1), 318-336.



8. Thomas, J. W. (2000). A review of research on project-based learning. Autodesk Foundation.
9. Usher, E. L., & Schunk, D. H. (2019). Social cognitive theory and motivation. In D. H. Schunk & J. L. Greene (Eds.), *Handbook of self-regulation of learning and performance* (2nd ed., pp. 33-51). Routledge.
10. Vovides, Y., Sorden, S. D., & Jones, R. H. (2012). Peer evaluation in a virtual collaboration environment: A case study. *Computers & Education*, 58(1), 339-352.