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A Comparative Study on Pedagogy, Andragogy, and Heutagogy in the
Walk Towards Education 5.0

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Abstract: Learning influenced by multitasking and the development of rapid search technology, social networking, artificial intelligence, robotics, automation, and big data are considered to be the influences of the major shift from Education 4.0 to Education 5.0. Therefore, it becomes important for teachers and students to understand the theoretical gaps that exist in Pedagogy, Andragogy, and Heutagogy to spearhead a broader discussion about how the teaching-learning process occurs in and will happen in the post-new normal. This paper is an attempt to compare and suggest ways to integrate Pedagogy, Andragogy, and Heutagogy in New Indian English Classrooms where connectivity is key to its success.

Key words: pedagogy, andragogy, heutagogy, connectivism

Abstrak: Pembelajaran yang dipengaruhi oleh cara multitasking dan perkembangan teknologi pencarian cepat, jejaring sosial, kecerdasan buatan, robotika, otomatisasi, dan data besar dianggap sebagai pengaruh dari pergeseran besar dari pendidikan 4.0 ke pendidikan 5.0. Oleh karena itu, menjadi penting bagi guru dan siswa untuk memahami kesenjangan teoritis yang ada dalam Pedagogi, Andragogi, dan Heutagogi untuk memelopori diskusi yang lebih luas tentang bagaimana proses belajar-mengajar terjadi dan akan terjadi pada pasca normal baru. Makalah ini adalah upaya untuk membandingkan dan menyarankan cara untuk mengintegrasikan Pedagogi, Andragogi, dan Heutagogi di Ruang Kelas Bahasa Inggris India Baru di mana konektivisme menjadi kunci kesuksesannya.

Kata kunci: pedagogi, andragogi, heutagogi, konektivisme

INTRODUCTION

The Indian educational ecosystem since March 2020 has seen one of the biggest causalities, as the entire process of teaching-learning has come to a halt due to the pandemic that had distorted the traditional chalk-talk teaching method. This timely and temporary stopgap has led to a paradigm shift in the educational sector that has propelled technology-driven pedagogy which is reshaping the global educational scenario. This emergency landing on digital classrooms had given way too many theoretical terms and techniques that were once considered way too far. Learning post-pandemic re-emphasizes the requisites of a newer learning ambiance with the skills required for 21st-century instructors and learners. Thus, it becomes necessary to delineate the

past and present and move towards future-ready phygital classrooms that support the digital ecosystem within and outside classrooms that have become the new normal. In this context, it becomes essential for both the teacher and the taught to understand the theoretical divide that exists within Pedagogy, Andragogy, and Heutagogy to spearhead the broader discussion of how teaching-learning happens and will happen in the post-apocalyptic era. With the Western concept of 'generations' playing a crucial role in influencing the teaching-learning process together with the rapid propagation of digital technology, the fundamentals of education are in a transitional phase.

THE PARADIGM SHIFTS

The social shifts along with economic and technological discoveries have led to the transformation of education across centuries. The article, *Leapfrogging to Education 4.0: Students at the Core* published by The Federation of Indian Chambers of Commerce & Industry (FICCI) in 2017 detailed information on Education 4.0 and its evolution down the ages. Education 1.0 belongs to the early stage, namely during the Ancient and Middle Ages of the 14th century around which education was restricted to a small group of students. It comprised personalized education, low literacy rates, and informal methods of education that focused on rote learning. Here religious and spiritual education was the objective. Education 2.0 emerged and marked a tremendous shift in the traditional education system with the invention of the printing press in the mid-15th century. The breakthrough in Education 2.0 was that the process of knowledge sharing was from one to many and it developed the education ecosystem globally. Education 3.0 was a massive breakthrough in every aspect of life during the 19th century. The Internet stormed the world with innovations and explorations. Education 4.0 is an epoch of technology and creativity, following the evolutions of the previous era of learning. With the advent of smartphone classrooms, online exams, and robotic house help, Education 4.0 arrived. Education 4.0 puts the learner at the center of the ecosystem and empowers the learners with a focus on the outcome. This aids in personalized learning and focuses on addressing an individual's goal. Emerging technologies including social media, mobile, analytics, and cloud computing (SMAC) are impacting all areas of education. In India, this unprepared transfer towards Education 4.0 is the paradigm shift that the Indian education system has long been waiting for. With countries like Zimbabwe already progressing towards adopting Education 5.0, it calls for a comprehensive effort to plan, design, and promote appropriate curriculum in the world heading towards Extended Reality (XR) which forms the bottom line of Education 5.0.

A COMPARATIVE STUDY ON PEDAGOGY, ANDRAGOGY, AND HEUTAGOGY

The Indian education system that operated on an outdated system according to the agrarian calendar and the requirements for the industrial age of the 19th century until March 2020 is no longer the fate of Indian students of the 21st century irrespective of the digital divide that exists in the nation. With post COVID-19 lockdown, the schools and colleges have had a techno lift and the guidance to drive instructional change that is being planned and processed by the government. This aroused a compelling question to compare the Indian classrooms pre- and post-pandemic. In this context, it becomes essential to have an overview of the theoretical foundations of Pedagogy, Andragogy, and pedagogy.

The Center for Online Learning, Research and Service of the University of Illinois, (2022) has stated that “Pedagogy is the teaching of children or dependent personalities. Andragogy is the facilitation of learning for adults, who are self-directed learners. Heutagogy is the management of learning for self-managed learners.”

Knowles (1973) defined pedagogy as the art and science of teaching children. This term comes from the Greek words *paid* and *agogus* which means leader of a child (Holmes & Abington-Cooper, 2000). Knowles (1970) defined andragogy as the art and science of helping adults learn. However, andragogy was first defined by Alexander Kapp in 1833 to describe the teaching style of Plato who formalized Socratic principles (Nottingham Andragogy Group, 1983). Andragogy was then further discussed in the seminal work on heutagogy that was done by Hase and Kenyon of Southern Cross University in Australia in 2000. In line with this, Halupa (2015) mentioned that Heutagogy is a much more holistic approach that teaches students how to learn and gain the competencies and skills they need for their selected field. Andragogy and heutagogy in 21st-century classrooms are essential for understanding adult learning and fostering self-directed learning respectively. They enhance adaptability and critical thinking which are the key skills of this century. Also, they promote autonomy and lifelong learning skills that help educators to create supportive environments where adult learners thrive and engage actively in one’s innate learning journey and lifelong retention.

Theories on learning date back to 500 BC and the study of learning can be traced from an assortment of standpoints. The most important of them are behaviorism, cognitivism, and constructivism. Behaviorism is built on the principle that learning happens with behavior change. “The behavioral change is both observable and relatively permanent” (Olson & Hergenbahn, 2013). Cognitive theory focuses on “how people perceive, interpret, remember and in other ways think about environmental events” (Ormrod, 2012, p.141). Constructivist conceptions of learning have their historical roots in the work of Vygotsky (1962), and Piaget (1967). They have proposed several implications of constructivist theory for instructional developers stressing that learning outcomes should focus on the knowledge construction process and that learning goals should be determined from authentic tasks with specific objectives. These theories over the years have been of tremendous support for the teaching-learning process and from them theories of instruction design and methods of teaching have emerged; all of which have a significant role to play in understanding the learners and their learning styles. These theories especially focused on how the brain of the learner gains and processes information and hence played a pivotal role in enhancing the pedagogical approach in teaching.

Earlier, the shift from pedagogy to andragogy was typically a need to reach out to the ‘Y’ or ‘Millennial’ generation who are hyper-connected and hyper-social and who are born into a zero-degree delay and instant world. They prefer T20, fast foods, pro-kabaddi, and metro reads to a 50-over match, full meal, and novels. Andragogy is an approach to learning and a system of concepts that is focused on the learner. The teacher, otherwise referred to as the andragogue, is the facilitator of learning rather than the historical figure of utilizing a preset curriculum with rigid guidelines. The experience is learner-centred with the learner participating in the planning of the learning experience. Using the andragogy approach, the andragogy, thus, needed to devise the classes to suit Gen Z and others of the new age classrooms.

According to Boggs (1981) adult educational experiences should enhance personal growth and make it easier for adults to adapt to internal and external changes until the end of life. Boggs considers adult education as life enhancing when it meets the following criteria:

1. Promotes skill development and positive self-concept.
2. Helps alleviate fears, prejudice, and illusions, and promotes critical thinking about stereotypes, cultural myths, and biased thinking.
3. Fosters creativity
4. Assists the individual to move toward personal goals.
5. Helps the individual become more tolerant, generous, sensitive, discerning, and understanding.
6. Provides access to greater opportunity.
7. Contribute toward the revitalization of positive cultural ideals and traditions.

A close comparison of the major tenets of pedagogy and andragogy as pointed out by Halupa, (2015) is given below:

**Table 1:
Major Tenets of Pedagogy and Andragogy**

Concept	Pedagogy	Andragogy
Role of Learner	Dependent	Self-Directed
Role of Faculty Member	Delivers knowledge	Facilitates Knowledge
Experiential	No	Yes
Primary Activities	Lecture-Based; Objective Testing	Experiential Strategies: group work, case studies, simulations, field experience; varied types of testing
Readiness	Are told when they are ready	Decide what additional knowledge is needed
Sequencing	Step-by-step uniform progression	Based on learner skills and readiness
Learning	Facts that will only be useful later	Process-oriented for future potential
Curriculum	Simple to Complex	Competency-based or categorical
Age Group	All age groups; but primarily K-12	Higher education (although concepts can apply to K-12)
Motivation	External	Internal
Knowledge	Done without question	Must understand why it is important
Readiness to Learn	What is required	When content is relevant
Focus	Subject-centered	Life-centered

From the above table it is inferred that pedagogy emphasizes teacher-centered instruction, catering to children's learning needs, using step-by-step uniform progression and direct guidance and the focus is subject-centered; on the other hand, andragogy focuses on adult learners, emphasizing self-directed learning and fostering autonomy and competency-based curriculum. Andragogy prioritizes learner-centered methods, acknowledging adults' readiness to learn and their diverse motivations and goals with a life-centered focus.

In the pre-covid classrooms of the 21st century, andragogy has been transformed into self-directed learning. This was earlier theorized by Houle in 1961 and Tough in 1971 along with Knowles. It is to be understood that it is here that self-directed learning intersects with transformational learning, where critical thinking is quintessential. In self-directed learning,

content is the focus; it is instructor-led lead and favors competency development. Post-covid classrooms, however, are beyond self-directed learning. It is here that heutagogy plunges in. The shift from self-directed learning towards self-determined learning is process-focused, learner-directed and supports capability development all of which is based on double-loop learning. Today, heutagogy is more natural in online classrooms in India irrespective of the existing digital divide.

Self-determined learning is a process in which learners take the initiative to identify learning needs, formulate learning goals, identify learning resources, implement problem-solving strategies, and reflect upon the learning processes to challenge existing assumptions and increase learning capabilities. (Blaschke, 2012). A heutagogical design includes a flexible curriculum and assessment and learner-centered questions. This approach can free up in-class time for teachers to focus on learning more than on teaching. In this way, it supports students in activities, leads discussions, and facilitates engagement. It further encourages learners to be active participants in the learning process and assists learners to reach their highest intellectual. Within heutagogy, students are encouraged to take responsibility for the learning design and pathway, while instructors facilitate learning and encourage learner action and experience in a supportive, non-threatening environment (Hase & Kenyon, 2000). Heutagogy takes andragogy a step further, moving learners along a continuum from more structured, less autonomous educational environments to environments of high autonomy with little or no structure (Blaschke, 2012). The key principles of heutagogy – learner agency, self-efficacy and capability, reflection and metacognition, and non-linear learning – provide a foundation for designing and developing learning ecologies, the potential of which can be further maximized through the use of digital media.

CONVERGENCE OF LEARNING THEORIES

Emerging educational theories such as complexity (Kauffmann, 1995), connectivism (Siemens, 2004), and rhizomatic learning (Cormier, 2008) have in them elements of heutagogy all of which support online environments. Gerstein (2013) defines Education 3.0 as a “connectivist, heutagogical approach” (p. 1). The originators and proponents of connectivism are George Siemens and Stephen Downes. Siemens proposed that the existing theories of learning – behaviorism, cognitivism, and constructivism cannot comprehend the fundamentally changed conditions of learning brought in by the dawn of digital technology and that these three theories were propagated in an age that did not know the blooming of digital content and technology supported learning materials. The teaching methodology commonly associated with behaviorism is direct instruction where the work of the teacher is to ensure that the students have taken down the correct notes of the class and there is no critiquing involved. However, it must be understood that all the theories were in a way linked to technology. Behaviorism was linked to teaching machines, cognitivism in terms of the information processing model, and constructivism about technological artifacts.

Considering the 2020 lockdown scenario of learning, connectivity has played a key role as technology has been rewriting the human brain and thereafter altering thinking to an extent as well. Connectivism as a theory has in it the pedagogical roots of networked learning. Also, it must be noted that connectivism has been closely associated with chaos and complex theories. Connectivism according to Siemens has stressed the importance of two elements – the ability to

seek out information and the ability to filter information. With the explosion of available information, it must be understood that the greatest challenge was to segregate information that is most needed from that which was not. Unlike the other theories, the learning theory of the digital age is bound to be considered as a continuous process within a complex environment. Here knowledge is acquired through connections that are open to interpretations and understanding of new knowledge. In the digital age, Connectivism has evolved in the blogosphere with educationalists interacting through open online networks to discuss the theory and its development. Massive Open Online Courses (MOOCs) are a perfect example to understand the transfer of learning based on the Connectivity theory. MOOCs are designed to be utilized by learners across the globe who wish to enroll in the learning process. The course is supported by software that wires the same and hence learning happens online that is supported by various media for a particular period. Here, facilitators and participants interact when needed and learning happens when the participants are ready and open to accept the materials taught or shared.

In a connective approach to learning, we create networks of knowledge to assist in replacing outdated content with current content. We offload many cognitive capabilities onto the network so that our focus as learners shifts from processing to pattern recognition. When we off-load the processing elements of cognition, we can think, reason, and function at a higher level (Siemens, 2005.).

In the process of designing a curriculum, all these educational theories from pedagogy through heutagogy are required to cater to a learner-based curriculum addressing the various learning styles of the new generation of learners. In the walk towards Education 5.0, real-and-virtual combined environments and human-machine interactions are the key. The future of education will be all-encompassing - Augmented Reality (AR), Mixed Reality (MR), and Virtual Reality (VR). The learners will experience physical world objects in the digital world and a heutagogical approach to learning will enable all such rapid transformation in the education ecosystem. In considering Education 5.0, it is mandatory to consider the closed and open networks where teaching is embedded within physical and digital networks as the modern pedagogy focuses on information literacy, which is an essential 21st-century skill.

The emergence and adaptation of learning tools and other learning spaces for authentic experiences that curate and store knowledge also serve as platforms for collaboration, which is another 21st-century key skill. Digital citizenship will also predict and personalize the domains of teaching-learning in a heutagogical approach. Adaptable patterns of inquiry - critical thinking, rational thinking, and creative thinking will remain one of the domains of heutagogy.

Practical Suggestions for Moving Towards Heutagogical English Classrooms

It is in the hands of an expert teacher to shift gears from andragogy to heutagogy within the English classroom without leaving aside the pedagogical approaches that is involved in teaching English. In the process of doing so, there are three important phases in the class. They are:

1. Evocation - how the class begins / introduction to the subject/topic
2. Knowledge Sharing - Repetition/Association
3. Formative Assessment; also Summarizing/Concluding Remarks

For phase I - Evocation, the teacher can include Role Plays, Demonstrations, Analogies-Comparisons, Case studies, Newspaper cuttings, Google Doodle, Inshorts, Infographics, and other forms of visuals to introduce the content; gamification also helps. For phase II - Knowledge Sharing, retention-based teaching is the best, and monotonous lectures should be avoided; classification, diagrams, tables, examples, pre-reading, and questioning will also help. Under Phase III- Formative Assessment, the learners can be allowed to have a discussion or present a summary. Online tools can be used to summarize the topics dealt with in class. Such simple and practical classroom techniques will enhance critical thinking, problem-solving, and collaboration within and outside the classroom premises.

In carrying out the class exercises, however, it is essential to consider statistical evidence from Professor John Hattie, professor of education and director of the Melbourne Education Research Institute at the University of Melbourne, Australia. His experiments on visible learning and others provide the essence of any research on teaching and learning. It is essential to consider statistical evidence from Professor John Hattie, professor of education and director of the Melbourne Education Research Institute at the University of Melbourne, Australia. In his book *Visible Learning*, Hattie (2012) mentions about ‘passion in education’:

The key components of passion for the teacher and for the learner appear to be the sheer thrill of being a learner or teacher, the absorption that accompanies the process of teaching and learning, the sensations of being involved in the activity of teaching and learning, and the willingness to be involved in deliberate practice to attain understanding. Passion reflects the thrill, as well as the frustrations, of learning; it can be infectious, it can be taught, it can be modeled, and it can be learned. (p.16)

In the words of John Hattie, it is in the hands of an “Expert Teacher” to achieve the intended outcome within the classroom. According to his research, in “5 Dimensions of Excellence of Expert Teachers” - the difference in effect between a high-effect teacher and a low-effect teacher is about 0.25 which means that a student in a high-impact teacher’s classroom learns about a year more than his or her peers in a lower-effect teacher’s classroom. It is understood that Expert Teachers identify the most important ways to represent the subjects they teach. The research in *Visible Learning* showed that teachers’ subject-matter knowledge did not improve student achievement. However, expert teachers do differ in how they organize and use this content knowledge. They know how to introduce new content knowledge in a way that integrates it with students’ prior knowledge because they can relate the current lesson to other subject areas, and they can adapt the lessons according to students’ needs. Because of how they view their approach to teaching, they have a greater stock of strategies to help students and they are better able to predict when students will make errors and respond when they do. They seek out evidence of who has not learned, or who is not making progress, and they problem-solve and adapt their teaching in response.

Expert teachers create classrooms in which errors are welcome and learning is cool. Expert teachers monitor learning and provide feedback. Expert teachers know that a typical lesson never goes as planned and they are skilled at monitoring the status of student understanding. They are excellent seekers and users of feedback about their teaching – that is, they see student progress as feedback about the effect they are having on learning. To do this they must regularly gather information to know who is not understanding. Expert teachers influence students in a wide range of ways: encouraging students to stay in school, helping them to develop deep and

conceptual understandings, teaching them to develop multiple learning strategies, encouraging them to take risks in their learning, helping them to develop respect for themselves and others, and helping them develop into active citizens who participate in our world.

CONCLUSION

With the COVID-19 pandemic changing the face of education forever, a non-linear shift towards Education 5.0 will improve the knowledge repository of the student force irrespective of the geographical and digital divide. Embracing technology has paved the way for blended learning. Flipped classrooms, hybrid models, BYOD- Bring Your Device (Ballagas, 2004) and other future-ready technologies support the teaching-learning process. It is in the hands of the teacher to shift gears between pedagogical and andragogical practices and be flexible towards making the students aim to reach the pinnacle of heutagogy through effective classroom practices that best support learning and relearning the 21st-century skills. With heutagogy in vogue, it will be interesting to note how the role of digital technology in Indian classrooms will evolve because of BYOD classroom inventiveness and the implications of Education 5.0 for future study.

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