Self-determined Learning (heutagogy): Where Have We Come Since 2000?

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Abstract

It has been sixteen years since Chris Kenyon and I wrote the first paper on heutagogy or self-determined learning. It is an idea built on the shoulders of giants of educational theory and practice in constructivism, humanism, capability and the idea of human agency. Since then, there has been an increasing interest in the theory and practice of heutagogy across the globe. This paper seeks to examine the evolution of the idea since 2000.

Advances in Theory

Human Agency

Heutagogy or self-determined learning was born in 2000 (Hase & Kenyon, 2000). Chris Kenyon and I were working on a postgraduate program for the RAAF—he was with the Royal Australian Air Force and I was an academic. In designing the program, we found some common interests in the factors we thought as critical for fostering learning. As it happened, none of these factors resonated much with what was being dished up as education by universities at the time. To be fair it was also true of much of education and training in general, with some exceptions perhaps in early school education and the occasional rebel and dreamer. Steiner and Montessori are also exceptions.

We were excited by the humanistic ideas of Carl Rogers, Vygotsky and constructivism, systems thinking, Stephenson’s notion of capability and complexity theory (see Hase & Kenyon, 2000; 2007; 2013; Hase, 2014a). These were used as the basis for the development of heutagogy or self-determined learning and remain central to subsequent theory and practice. However, connectivism has been more recently been associated with heugagogy as compatible theories (Blaschke, 2012; Dron & Anderson, 2014).

Since its inception, we have come to understand that the concept of human agency is central to both the theory and practice of heutagogy, as it is to humanism and constructivism (Blaschke & Hase, 2015; Hase, 2014a). The idea of human agency is that people make a contribution to their actions through the mechanisms of reflection, motivation, being creative and self-determination (Bandura, 1989). This is contrary to more deterministic views that humans are simply the product of what happens to them through external agencies.

In relation to learning, we think that people play an immediate and ongoing role in what, when and how they learn. Current learning is motivated by and builds on previous experience that is idiosyncratic to each individual learner. It occurs mostly at an unconscious level. We are only aware of the learning of others when their behavior is observed. The individual brain sorts out what is wheat and chaff, for it alone. It attends to and then keeps whatever is relevant. The determination of relevancy is worth an essay in its own right but doesn’t
necessarily have to concern value. We learn lots of things that have no value and that may even be harmful but learning them is still due to our own agency.

As the constructivists point out, people make sense of their experience in their own, unique ways. We cannot predict what a new learning an experience can provoke and the impact on the human brain through linking with previous learning. Nor can we determine when learning will take place. It can happen years later when information obtained previously suddenly makes sense due to some lived experience. There is no such thing as a standard learning outcome, despite the widespread determination among politicians and education policy makers to make it so.

In the context of educational systems, the idea of human agency is important in understanding how people think about change in what is an inherently conservative enterprise, mirroring as it does society in general. Some people, do not believe in the idea of human agency. Rather, they are inclined to believe that people need to be closely led and cannot be trusted to act by themselves, that relationships are transactional, that change is bad, control is important, and that humans need to be told what to do. A belief in human agency is critical in determining the extent to which educators are likely to adopt innovative practices, including learner-centred approaches. Policy makers and politicians who do not believe in human agency are less likely to embrace ideas such as self-determined learning or, for that matter, other innovations in education.

Advances in Brain Research and Heutagogy

It was the work of Norman Doidge (2007) on brain plasticity that first alerted us to what has since become an important contribution to our thinking about heutagogy. Recent advances in imaging technology has enabled researchers to study the human brain with increasingly accuracy. Not only has it been possible to map the anatomy of this highly complex organ but also to observe what is actually happening in the brain when people are behaving, experiencing emotions and thinking.

As well as having obvious advantages for medicine, this brain research has created a considerable leap forward for psychology, in particular, and the social sciences in general. The complexity of the human experience in social settings normally poses considerable problems for researchers wanting to understand human behavior. A great deal of imagination has to be used in experiential design to try to isolate variables and eliminate variance as much as possible. This results in the risk of simplifying the context so much that we end up not explaining much at all. It also has to be said that while there is a mass of interesting qualitative and anecdotal research in social sciences, it often falls short of being able to explain phenomenon.

This difficulty is also true for the field of education and training and, specifically, for this paper, learning. While there is a plethora of excellent research to support education and training practice, brain-based research has the potential to take our understanding of how people learn to a new level. If we can really understand how people learn best, then we can design educational experiences with much more confidence. The current findings of this brain research suggests that some of what we take to be good practice is ineffective. Much of the research on learning has previously concerned the educational process and found ways to measure outcomes. The measurement is very difficult, if not problematic. Learning is a complex interaction of myriad influences including genes, neuropsychology, physical state,
social experience and biology. Brain research provides the opportunity to see how people actually learn and then design process based on its observations. Arguably, brain research provides an opportunity to develop an evidence-based practice for educators.

Memory is a critical factor in learning and consists of the laying down of networks of neurons that can then be accessed (Benfenati, 2007). As more and more neuronal pathways are laid down, the result is a very complex matrix (Willis, 2006). New and old pathways influence each other through activation and association (Kahneman, 2011). From an educational point of view, it is hard to predict what these associations and influences might be in the individual learner. So, obtaining a new understanding or even a bit of information might result in quite complex cognitive leaps (Jung-Beeman et al., 2004), creating changes in behavior, and new questions arising in the face of new complexities. A learning leader needs to be constantly finding out where learners ‘are at’ by asking the right kind of questions. Not just questions that test knowledge but questions that find out what the learner is thinking, new understandings, new problems, and what is exciting them.

Learning often involves change, a shift in mental models, attitudes and beliefs. Humans find change difficult because the brain responds to it in the same way as it responds to a fearful situation (Rock & Schwartz, 2006). Getting someone to learn something may not be as straightforward as we think. Resistance may be occurring at all sorts of levels but not because the person is being consciously difficult. Rather, telling or showing someone something may not be enough, particularly if they are not motivated to change, or it is outside their experience.

Humans are pattern seekers, and there is no way of knowing what these patterns look like when they are formed except by observing behaviour. So, we run the risk, unless we use certain processes during the learning experience, of constraining the learner through the curriculum. The brain is incredibly plastic and changes dramatically depending on where the person is concentrating their attention (Swartz et al., 2005). We all see the world differently. Hence, curricula need to be flexible, able to move with the realization of new learning.

According to Sumara and Davis (1997, p.107) learning involves, “…a process of organizing and reorganizing one’s own subjective world of experience, involving the simultaneous revision, reorganization and reinterpretation of past, present and projected actions and conceptions”. People come to a learning encounter with different experiences, different neuronal pathways and patterns, and different interests. If we use one part of the brain more than another, say by playing the guitar for example, then those parts of the brain responsible for left and right hand fine movements become denser with neurons. The more we use different parts of our brain, the more it develops through the release of chemicals called neutrophins (Willis, 2006). Brain plasticity research (Doidge, 2007) shows that highly focused techniques targeted at specific areas of the brain assist learning.

All brains are different. People, even small children, come to learning encounters with different experiences, interests and motivations. Each person will have a unique perspective on new information, new skills and new experiences. The one size fits all metaphor doesn’t quite work with the human brain. And neither does a singular approach fit all, although I am not implying that learning styles plays a role in how we learn. Rather, different learning requires different approaches. However, given what we know about how people learn then exploration, and hypothesis building and then testing enables the individual brain rather than constraining and confusing it.
It is interesting that the more satisfying, engaging and perhaps exciting the education process, the more internally reinforcing it is to the learner through the release of dopamine (Willis, 2006).

Emotions play a vital role in learning, memory and decision-making (Damasio, 2003; Ingleton, 1999). The amygdala that is central to driving emotions is connected to areas of the cortex responsible for higher order cognitive functions and learning. Thus, emotions affect learning, as they do analysis, decision-making and action. Arousing positive emotions through effective relationships, motivation, vision and purpose, involvement and engagement, and exciting learning experiences is important in facilitating learning. Den Ouden et al. (2013) demonstrated that dopamine, the hormone that increases pleasure (Cools et al., 2009), reinforces learning in the long term while serotonin secretion, which is involved with negative reinforcement, enhances learning only in the short term.

It is my contention that the role of the learning facilitator in reinforcement is to create or at least enable these kinds of positive emotions. Closely linked to positive emotions, and perhaps even indistinguishable, is motivation. Motivation to learn is innate and linked to survival, which might explain why we are good at it right from the beginning of life. As pattern seekers, we attempt to make sense of our environment (Sousa, 2011). Survival is dependent on being able to attend to relevant stimuli in our environment, generate and test hypotheses, create patterns, and then act on this processing.

Patterns and associations are made by the learner and are dependent on previous experience that, as we have described already, is very individualistic. Not all brains are the same. And so it is for motivation for the same reason of relevance. Learners need to be involved in the design of learning and the learning process. They need to be able to share patterns they are creating, and be able to change the focus of their learning as their needs evolve.

Furthermore, when people solve a problem themselves they release a host of neurotransmitters such as adrenaline and dopamine in the brain, which create a sense of excitement (Stahl, 2002). Asking questions relevant to the learner has the same effect, which Socrates presumably knew well, although intuitively rather than from brain science. Persuasion has the opposite effect, releasing hormones that increase resistance (Sagarin et al., 2002; Tormala & Petty, 2002).

In ‘Self-determined learning: heutagogy in action’ (Hase & Kenyon, 2013, p. 38) we referenced an interesting story from Ackoff & Greenberg (2008) and it is worth repeating here:

This involved a group of students in a poor city neighbourhood with a high level of illiteracy and no interest in education (over 65% of households had no books). Knowing that these young people were incredibly street smart and not dumb a local university professor came up with a novel idea. He started to show old silent movies, which became very popular in a neighbourhood where entertainment was scarce. The interesting side-effect, however, was that the young people started teaching themselves how to read so that they could understand the captions.

Since 2000 brain research has advanced exponentially and continues to do so. What is most interesting is that much of this research into human learning is supporting the underpinning principles of heutagogy.
Principles of Self-Determined Learning

Gerstein (2014) proposes a number of attributes that children need to learn in order to survive in the 21st century and none of them include mathematics, science, and other competences measured by standardized testing. Gerstein’s attributes are worth listing here:

- be agile and adaptable,
- have good oral and written communication skills,
- be able to collaborate across networks, be curious, and be imaginative,
- be optimistic,
- have the capacity to frequently scan the external environment
- ability to foster participative democracy/collaboration decision-making and process
- a capacity to work in a team as leader and member- Ongoing internal and external
- analysis of effectiveness (continuous improvement)
- be able to filter information (research skills)
- have critical thinking and problem-solving skills,
- demonstrate initiative,
- be entrepreneurial,
- have vision,
- be resilient, and
- have empathy and a sense of global stewardship.

A number of these needs relate to the ability to learn.

While heutagogy suggests that the ability to learn is a natural human condition, there is still a need to learn process skills such as the use of technology, doing good research, differentiating the wheat from the chaff, working in teams, continuous improvement, problem solving and critical thinking. So, these skills are central to a self-determined learning educational environment, underpinned as they are by the notion of human agency. Learning how to learn is a critical life skill and is central to the principles of self-determined learning.

In 2000, we proposed a few ideas of what applying self-determined learning might mean in education and training settings. Since then, due to the work of lots of people playing with these ideas it has been possible to establish a set of principles of self-determined learning to guide practice. A summary of the contexts in which self-determined learning has been used is provided later.

The most recent list of the principles of heutagogy are (Hase, 2014a, p. 13):

- involve the learner in designing their own learning content and process as a partner;
- make the curriculum flexible so that new questions and understanding can be explored as new neuronal pathways are developed;
- recognize that learning is non-linear;
- individualize learning as much as possible,
- provide flexible or negotiated assessment;
- enable the learner to contextualize concepts, knowledge and new understanding;
- use experiential learning techniques;
- facilitate collaborative learning;
- facilitate reflection, and double loop and triple loop learning (metacognition);
- provide lots of resources and let the learner explore;
• develop research skills including how to be discerning about ideas and content;
• differentiate between knowledge and skill acquisition (competencies) and deep learning;
• recognize the importance of informal learning and that we only need to enable it rather than control it;
• have confidence in the learner; and
• recognize that teaching and teacher control can become a block to learning.

These principles challenge many of the holy cows of educational and training practice, mainly the curriculum, assessment and the role of ‘teacher’. With the learner at the centre of the learning experience and the learning leader (Hase, 2014b) as a partner, the process is dynamic rather than linear. The curriculum is flexible, although still important in directing the learner in a general sense and in the attainment of competence (knowledge and skills). Assessment is part of the learning process rather than a simple test of attainment and is negotiated.

Blaschke and Hase (2015) have illustrated how the learning leader may design heutagogic experiences as shown in Figures 1 and 2 below. These models are dynamic rather than static, as is learning in a heutagogic environment.
Figure 1: Heutagogic Design Process
Self-determined learning (heutagogy) Contexts

It is impossible to completely give justice to the literature that has unfolded since 2000, and it was not the intent of this paper to do so. However, I have tried to categorise this literature below for the interested reader to follow as an indicator of the developments of heutagogy since 2000. The categories are somewhat arbitrary as many articles span a number of areas.

Lifelong Learning

Given that autonomy and self-directed learning are central to the idea of self-determined learning, it is not surprising that those interested in lifelong learning have eagerly drawn the two together. Lifelong learners are self-determined learners. Blaschke and Hase (2015) make the point that the Internet means that people can freely access information, when and where they want it throughout their life. Not only that but is is relatively easy to find a mentor or a teacher when required to obtain guidance or learn a skill, to join a community of practice online or chat using social media.

Blaschke (2012, p.60) has offered a framework, which reflects the lifelong learning process. ‘Engagement’ indicates participation, while ‘cultivation’ refers to autonomous and self-
directed learning. ‘Realisation’ occurs when capacity is translated into capability. Similarly, Lukin et al. (2010) coined the PAH Continuum to describe how learners transition through Pedagogy to Andragogy and finally Heutagogy. In a clever application of this idea, Garnett (2013) described how the Beatles went through these phases in the progress of their music.

The idea that the learner transitions from pedagogy to andragogy to heutagogy (PAH continuum) has become popular among those investigating heutagogy. It is a seductive idea and has been observed in higher education (Tay & Hase, 2013), lifelong learning (Blaschke, 2012) and school education (Price & Andrews, 2014). Certainly, it appears useful in transitioning people from teacher-centric to learner-centred learning. However, it should not be assumed however, that children, or humans in general for that matter, are not self-determined learners. It appears that children are quite effective learners right up until they enter the education system, at which point they become teacher dependent rather than self-determined learners.

Canter (2012) describes the intersection of the advantages of e-learning and heutagogical principles for lifelong learning. Called e-heutagogy, these learners are guided to use e-learning to access what they need and in a way that suits their style of learning. Garnett and O’Beirne (2013) describe the development of a range of resources for community learning and conclude that heutagogy is, ‘…a key concept for developing learning in a Web 2.0 world’ (p. 141). Gerstein (2014) refers to Web 3.0, which is a more connected, user generated world due to advances in mobile technology and in which heutagogy is central.

Eberle (2013) claims that heutagogy is an approach for all ages that involves: creative thinking and problem solving; double loop learning; universal design for learning; and collaboration. Kanwar, Umar & Balasubramanian (2014) analysed the National Qualifications Framework (NQF) in South Africa in terms of lifelong learning. They suggest that there is a need to shift from pedagogical approaches to andragogy and heutagogy at a policy level in processes such as the NQF. Heutagogy has also been applied to community education (Foskey, 2013).

**Higher Education**

According to Blaschke and Hase (2015, p.75),

> A variety of economic, social, political and technological factors have come together to create a perfect storm of change in higher education…..People are now lifelong learners, learning their profession throughout life, in chunks and when they need it. Added to that, the explosive advancement of technology in the last decade has made learning readily accessible at any time, everywhere and in any form. The convergence of these factors has left higher education institutions scrambling and institutional, teacher and learner roles in a state of flux. Heutagogy, also called self-determined learning, offers a teaching and learning framework for navigating the oncoming storm.

A good deal of the literature about heutagogy is devoted in some way to higher education. However, Blaschke (2012) points out that higher education has been reluctant to adopt heutagogy because of the perceived impracticability of implementing it within existing and current educational arrangements. For example, McAuliffe et al. argue that, ‘the removal of educator makes the concept of heutagogy impractical in a credentialing institution’ (2008). This is an unfortunate overstatement of learner-centred learning and it is a shame that these
authors have fully followed the argument. Heutagogy does not advocate a curriculum free environment, just that the curriculum needs to be flexible as does the teaching approach.

However, heutagogy has been receiving support from various quarters, usually practitioners. According to Blaschke (2012), educators in the nursing, engineering and education professions have found heutagogy to be a credible response to the critical issues with which learners are faced and have designed their learning environments based on the approach (Parslow, 2010). For example; Hurley and Neilson (2013) and Bhoyrub et al. (2010) investigated heutagogy in clinical nursing practice; Gazi (2014) describes its use in engineering; Parslow (2010) has applied self-determined learning in medical education and Barton (2012) used a heutagogical approach to developing entrepreneurial competencies among small business enterprise managers. Oliver (2014, 2015) suggests ways to implementing self-determined learning in theology education, moving away from a teacher-directed approach.

The University of Western Sydney has implemented the heutagogical approach in its teacher education programme, which has resulted in improved teacher outcomes and more capable teachers (Blaschke, 2012). Others exploring the use of heutagogy in teacher education include Ashton & Elliott (2007 and Ashton and Newman (2006). Canning and Callan (2010) found in their research of UK institutions that reflective learning increased the capacity of students to take responsibility for their own learning.

Self-determined learning approaches have also been used successfully in postgraduate education (Dick, 2013; Kenyon & Hase, 2010; Kerry, 2013; Tay & Hase, 2004, 2013). Eichler and Dietz (2013) and Dietz and Eichler (2013) claim that heutagogical approaches to learning can meet the unique needs of participants in graduate education programs that is a complex learning environment for mature learners. Oprean et al, (2010) engaged their students in designing a doctoral program for computer science students.

Blaschke (2012) suggests that the heutagogical approach could be integrated into formal learning programmes through learner-defined learning contracts, flexible curriculum, learner-directed questions, flexible and negotiated assessments, and collaborative learning, for example. The learners are not seen as passive recipients of education but as active participants who can be engaged in their own learning.

E-learning, digital technologies and distance education

Many educators have examined heutagogy in relation to e-learning and distance education. Given the Internet, it is easier for people to fulfil their abilities as self-determined learners. Their learning is learner-directed rather than teacher-directed. It is possible that e-learning course designers actively seek effective ways to present their programs, given the perceived complexity of learning at an arm’s length and are more likely to be innovative than those involved in face-to-face teaching. In the latter the teacher has much greater perceived control of the learning experience and monitoring is much easier.

Having said that, e-learning, distance education and the availability of digital technologies does not mean that learning programs are always based on heutagogy. On the contrary, didactic teaching methods and teacher-directed learning are alive and well in the e-learning world, despite opportunities to do otherwise.
Nonetheless, heutagogy has been proposed as a framework for 21st century learners given the flexibility and access to digital technologies (Blaschke & Hase, 2009, 2015; Eberle, 2009; Jaakkola, 2015) and, specifically, social media (Blaschke, 2012; 2014; Cochrane et al., 2012; Cochrane & Narayan, 2013). Moreover, technology has the potential to drive educational innovation such as heutagogy (Gerstein, 2014).

What we are seeing in applying heutagogy to e-learning, in particular, is the awareness that there can be a much greater emphasis on sense-making (understanding, application, transfer) rather than focusing on delivery of content. What appears to be more obvious to the designers of e-learning programs is that the content is readily available and that there can be a concentration on learning. In any case, the learner is seen as a collaborator in their own learning (e.g, Blaschke, 2013; Chapnick & Meloy, 2005; Eberle & Childress, 2002; Hase, 2009; McNickle, 2003; Palaiologos, 2011).

However, it may not always be easy to apply heutagological approaches. Msilav and Setihako (2012) found that they had to nurture students and help them become more active learners. Similarly, Cochrane (2014) found that social media was valuable but that students needed to be motivated to use digital technology. A student, Brandt (2013), described the challenges of transitioning to a more heutagological approach in an online learning program. But then argued that it was even harder going back to a more traditional, teacher-controlled approach when she took a different graduate course.

It’s not surprising, given the increasing use of social media in learning, that Schuetz (2014) describes how blogs can be used to develop a learning legacy through sharing and support self-determined learning.

School Education

In something of a land mark for heutagogy Andrews (2014) describes how his school in Brisbane, Australia, has been implementing elements of heutagogy to guide the school curriculum.

Andrews developed the FACE model to describe the approach as shown in Fig 3.
Price and Andrews (2014) also applied the idea of the PAH Continuum to school education arguing that pedagogy is not sufficient in a curriculum that aims to challenge students.

**Teaching Practice**

Ridden (2014) found that one of the problems in implementing innovations such as heutagogy, is that senior managers sometimes don’t understand what their staff are trying to do. When it comes to appraisal time the staff member might want to talk about what they are doing in the classroom but the manager wants to ‘tick the boxes’ and is not interested in innovation.

According to Price (2014) teachers are taking control of their own development through social media and informal learning, and self-determined communities of practice. Northcote and Boddey (2014) investigated the use of heutagogy as the underpinning model to guide online professional development of university teaching staff. They found that heutagogy was
helpful in efficiently and effectively delivering professional development in a high demand environment.

Eberle and Childress (2006) claim that educators need to be courageous:

*Heutagogy is not for the feint of heart or lazy of mind. Instructors must be facilitators who have the confidence to be able to let go of the ownership of learning. Rigidly structured environments are not conducive to heutagogy. Heutagogy does allow instructors and students alike to be creative and to enjoy a mutual respect of ideas... In a world of rapidly evolving information, heutagogy can be the catalyst for students to explore avenues of learning in ways that help them to be capable people who are prepared for their roles in society* (p. 12).

The flipped classroom method that reflects heutagogical principles in action (Schlairet et al., 2014) has been an interesting innovation that has gained some traction among teachers. Collaborative and flexible assessment (Eberle & Childress, 2009; Oliver, 2015), that challenges the traditional ‘same size fits all’ is another heutagogical approach that engages the learner in their own learning. However, as Bull (2014) found in his study, it is possible to create self-determined learning in teacher-directed learning environments.

Blaschke and Brindley (2011) investigated the use of reflective practice through an electronic journal. Their findings supported the use of reflective practice in a heutagogical approach (Hase & Kenyon, 2000; 2007) to teaching and learning.

Assessment is an important aspect of any formal learning experience. From a heutagogical perspective assessment needs to be negotiated and flexible (Albon, 2006; Hase, 2009; Hase & Kenyon, 2000, 2007). As Booth (2014) says, assessment should be a learning opportunity and part of the learning process rather than an end point. Assessment can also consist of self-diagnosis for reflection and further development (Eberle, 2009).

One of the key issues in the adoption of innovative approaches to learning is educating staff and moving them out of their current mental modes of teacher-centric learning. Hexom and Marshall (2013) undertook a research study that successfully used a heutagogical approach to help staff adopt social media in their teaching.

Hase (2014b) and Blaschke and Hase (2015) suggest that there are new attributes necessary for the learning leader of the 21st century (they argue that it is time to stop using the title ‘teacher’, as it suggests outdated notions of control and teacher-directed learning). These abilities and related attributes and skills are described in four categories: the capacity to accept and manage ambiguity; the ability to foster engagement; the capacity to learn; and the ability to use open systems thinking. Price (2014) asks whether or not heutagogy has the capacity to challenge and change the script for educators. As yet, we are waiting an answer to this question.

**Workplace and professional education**

There have been some forays into using heutagogy in workplace and professional education and training programs. Cordon (2015) found that a heutagogical approach was very valuable to ontology nurses in their professional development by raising their confidence to take control of their learning and to solve problems in unfamiliar circumstances. Ramsay, Hurley
and Neilson (2013) also found self-determined learning to be helpful in developing problems skills of nurses when in clinical settings. Hase (2010, 2013) describes how heutagogical principles can be used in vocational education and training, using examples of programs he has conducted.

In her doctoral study, Bailey (2013) examined informal learning among HR practitioners and recommended that heutagogy could be used to enhance their capacity to be self-determined learning. Similarly, McIlveen (2010) suggests that career development learning in universities should shift from a teacher-centred approach to a learner-centred approach based on heutagogy. He calls this, transformative career development learning. Jaakola, (2015) discusses the importance of exposing teachers to networked technologies while helping them become facilitators of self-determined learning in their practice.

Conclusion

I am going to conclude this paper with a paragraph from a book chapter written by Lisa Marie Blaschke and myself (Blaschke & Hase, 2015, p.75) that I think cannot be bettered as a statement about self-determined learning:

*Change is no longer an exception in the current world we inhabit. It is the normal state and is discontinuous. The ability to learn, for both individuals and institutions, is critical to survival. While it has always been so, adaptation in the past could comfortably take place over a long period of time. Now, that is no longer possible. And we have the tools to be able to learn quickly and effectively: whenever and wherever we are. What needs to happen now is a concomitant shift in our thinking about educational and training systems that keeps pace with both the need to learn effectively and the technology that enables it. This change in our cognitive schema about how we learn needs to become based on the readily available science that tells us clearly about how people learn best rather than outdated models that were built for the industrial revolution. Learners, learning practitioners, policy makers and politicians, and managers of organizations need to be prepared to use this science and to adjust their thinking about learning in the twenty-first century. Heutagogy, or self-determined learning, provides them with a framework to think about learning in a revolutionary way.*

References


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