Heutagogy in Postgraduate Education: Cognitive Advantages for Higher Degree Online Students

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Sue Gregory, Michelle Bannister-Tyrrell, Jennifer Charteris, and Adele Nye

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Abstract

As the nature of postgraduate education changes with the inclusion of diverse groups of students who may live at a distance (sometimes in remote areas) and new and emerging technological affordances, shifts are signaled in relationships with peers, teaching staff, and higher education organizations. Heutagogy, as a self-directed approach to learning, supports higher-level cognitive function, double-loop learning, and a shift from educator centered to learner initiated and driven learning. Provided is an account of heutagogy in the form of three case studies that illustrate heutagogy in the teaching, learning, and supervision of online postgraduate education students through a variety of traditional, immersive, and engaging

S. Gregory (✉) · M. Bannister-Tyrrell · J. Charteris · A. Nye
School of Education, University of New England, Armidale, NSW, Australia
e-mail: sue.gregory@une.edu.au; mbannist@une.edu.au; jcharte5@une.edu.au; anye@une.edu.au

R. Erwee et al. (eds.), *Postgraduate Education in Higher Education*, University Development and Administration, https://doi.org/10.1007/978-981-10-5249-1_32

emerging online tools. By discussing the use of both traditional and emerging innovative ICT tools, provided is an overview of how postgraduate students can demonstrate heutagogical approaches to learning, offering readers ideas and alternatives to use in their profession as online educators.

Keywords
Heutagogy · Andragogy · Postgraduate student · Distance education · Online learning · Technologies

Introduction

Higher degree research students are important to all universities, and it is imperative that these students are supported throughout their postgraduate journey. With the increase of technology across education delivery services, tertiary educators need to reconsider pedagogical practices for learning pathways for all online students, particularly postgraduate students. Traditional learning models use a pedagogical approach to content delivery where the role of educator is to design and control the learning process. Yet with increasing diversity of the student corpus with the massification of higher education (Teichler 1998) and new forms of technology, it is important to consider shifts in how learning is being shaped and constituted. This is particularly pertinent to educators who are responsive to a range of student needs and take up a resonant approach to foster higher-order learning in our practice. It is noted that approaches to learning have shifted in higher education over the last five decades from andragogy to heutagogy.

Andragogy, or self-directed learning, has been the model of choice for adult learning since the mid-1970s (Knowles 1975). Online learning often reflects an andragogical approach where the academic supports self-directed learning principles showing students where and how "to find information, relat(ing) information to learner experience and plac(ing) a focus on problem-solving within a real-world situation" (Blaschke 2012, 58).

In this chapter, case studies are presented that articulate a heutagogical approach to a technology-rich learning design in postgraduate settings that demonstrates self-determined learning. Heutagogy (Hase und Kenyon 2001) is gaining popularity for postgraduate studies as it positions the learner at the center of his or her own learning (Blaschke 2012). Heutagogy can be seen as an effective online learning theory for two reasons: (1) it is considered by some to be a "net-centric" theory that complements today's technologies; and (2) it supports postgraduate students who already possess industry-based competency, to build and develop learner capabilities (Blaschke 2014).

Postgraduate study, particularly through distance education, can be a lonely time for students, and it has been shown that isolation and lack of connection are two factors that influence student drop-out rates (Angelino et al. 2007; Kanuka und Jugdev 2006). Importantly, it has been demonstrated that students learn more effectively and are more engaged when they can perceive teaching, social, and

cognitive presence (Garrison 2007). A strategy for providing students with a sense of connectedness is through the use of innovative online learning technologies.

Developing research ideas with students who are located great distances from the university, who may be holidaying, traveling, working, or simply lead transient lives, brings new challenges to online higher education for postgraduate students. For some postgraduate students, access to online teaching is limited particularly when one is on the move or living in remote communities in Australia. New and emergent scholars may find themselves in isolated locations, which can bring a unique richness to their research but also technical and logistical challenges. As technical problems are overcome, the real challenges come to the fore, in particular fostering opportunities for "postmodern emergence" in academia (Somerville 2007) and very personal work of individuation (Dirkx und Mezirow 2006). One needs to create the right moment and space for in-depth theoretical and philosophical discussions that disperse seeds of creative thought, theory, and imaginative wondering. Through the use of immersive environments, one has the capacity to develop greater connectedness between an individual student and his/her supervisor including between peers.

Of particular interest is the spontaneous use of the elearning spaces by students as a parallel platform to formal education spaces afforded through learning management systems (LMS). In addition to the structured use of digital technologies instigated by universities, students also spontaneously engage in self-selected communities of practice, "groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (Wenger-Trayner und Wenger-Trayner 2015, 1).

In distance education contexts, various digital technologies can be likened to a cyber coffee shop, the virtual equivalent of on-campus face-to-face spaces where peer conversations occur and relationships flourish when lecturers are not present. These relaxed conversations break down boundaries between peers. Online teaching spaces can be seen as constrained within their written (and unexpressed) protocols around appropriate professional communications. Some of these digital technologies afford a place for students to vent frustrations and speak candidly with one another. They can also provide students with immediacy in their potential for instant peer feedback when they post questions. When students do not feel their pastoral needs are met through the more formal learning structures, they turn to their online community to have these needs met. Although there can be hostility when misunderstandings occur, these peer groups can also provide support and encouragement for members.

The chapter commences with an account of our context as four educators from an Australian university. The definition and differentiation of the notion of androgogy and heutagogy in postgraduate education settings are provided in this chapter. Consideration is then given to the significance of double-loop learning (Blaschke 2012) and high-level cognitive connections as aspects of heutagogy. In the latter section of the paper, presented are three case studies of postgraduate students undertaking a *Graduate Certificate in Education (Grad Cert Ed)*, *a Master of Education (MEd)*, and a *Doctor of Philosophy (PhD)*. Analyses of heutagogy

are provided with each case and a discussion is leveraged on the relevance of a heutagogical approach to learning for postgraduate education.

Context

These case studies were drawn from composite student experiences studying at the University of New England (UNE), a regional university in New South Wales, Australia. There are approximately 19,200 students studying at UNE with 77% studying in off-campus mode (Password protected citation.) (University of New England 2016). This means that these students choose to study totally online. Between 4,000 and 5,000, students enroll in the School of Education, with 12% enrolled to study on-campus. These numbers have declined in the past 3 years, from 15%. The School of Education has the highest number of online students across the university with 88% choosing to study via this mode (As above.) (University of New England 2016).

Literature Review

The following review looks briefly at the historical and contextual literature surrounding andragogy and how this concept proved insufficient when explaining the higher adult learning. With the introduction of heutagogy as a way of addressing the learning needs of highly competent adults, it has become clear that this approach also requires elements of high-level cognitive function for successful engagement.

Andragogy

In Knowles (1970) seminal book *The Modern Practice of Adult Education: Andragogy Versus Pedagogy*, he introduces the term "andragogy" for adult learners for whom the simple model of transmitting knowledge and skills was not sufficient.

Contrary to what is often reported, Knowles did not create the term "andragogy," instead he was introduced to the term by a Yugoslavian adult educator in the mid-sixties. "They coined the label 'andragogy' which is based on the Greek word aner (with the stem, andr), meaning 'man, not boy' or adult" (Knowles 1970, 42). Knowles' writing reflected 1970 understandings of pedagogy such as "the experience learners bring to a learning situation is of little worth" and "people are ready to learn whatever society (especially the school) says they ought to learn, provided the pressures on them (like fear of failure) are great enough" (44). As with most things in education, pedagogy has evolved significantly since the 1970s.

Andragogy, or s*elf-directed learning*, has been the model of choice for adult learning since the mid-1970s. Knowles summarizes andragogy as based on four assumptions characterizing learners as they move from dependency to self-directedness; accumulating experiences that can be drawn on for learning; a readiness to

learn based on social roles, and understanding learning as performance-centered (1970, 44–45). According to McAuliffe et al. (2008, 2), while pedagogy is a teaching theory, andragogy is a learning theory. The authors also state that while pedagogy is based on transmitting content, andragogy focuses on "facilitating the acquisition of the content". In contrast to pedagogy, andragogy is seen as an active process where adult learners are expected to identify their needs and plan how to meet these learning needs. Online learning today often reflects an andragogical approach where the educator is designer, manager, and provider of much of the content and resources available to students.

This review will now explore the next level of adult learning where the student becomes the center of their own learning experiences.

Heutagogy

With the availability of technologies and the requirements of the twenty-first century societies for intellectually agile digital literate citizens, in this chapter heutagogy is viewed as a key aspect of learning in the twenty-first century. The concept has its origins in the work of two Australian academics Hase und Kenyon (2001) who, recognizing that *andragogy* did not go far enough in separating the teacher/educator-learner relationship for adult learners (2001, 1), coined the term *heutagogy.* Once again, the term was appropriated from "the ancient Greek for 'self' with some adjustments and the 'agogy' added" (2007, 112). "Agogy" means insights to action (Collins English Dictionary 2016). Hase and Kenyon observed that in contexts where technology enables almost limitless information "we should be looking at an educational approach where it is the learner... who determines what and how learning should take place" (2001, 1). The primary tenet of heutagogy being *self-determined* learning.

A heutagogical approach to learning design, otherwise known as *self-determined learning*, is gaining popularity for postgraduate studies as it places the learner at the center of his or her own learning. Heutagogy is seen as an effective online learning theory for two reasons: first, it is considered by some to be a "net-centric" theory that compliments today's technologies (Anderson 2010); and second, it supports post-graduate students who already possess industry-based competency, to build and develop learner capabilities (Blaschke 2014).

There are significant differences between andragogy to heutagogy that are relevant to postgraduate education. Andragogy utilizes single-loop learning theory, which at its simplest involves a linear progression of problem – action – outcome. In contrast, heutagogy requires double-loop learning where informed choices require "deeper thinking and challenges the underlying assumptions and premises that support our stated goals, values and strategies" (Synnott 2013, 126). Blaschke (2012) highlights a model that demonstrates the difference between single- and double-loop learning in Fig. 1.

Hase und Kenyon (2007) also highlight another important difference between andragogy and heutagogy in the field of adult education. The world today requires

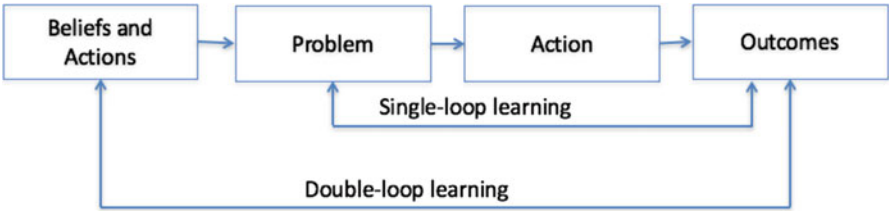

Fig. 1 Single- and double-loop learning (Blaschke 2012, 60)

capable people who can adapt quickly and creatively to changing environments (Hase und Kenyon 2001). Andragogy, to a large extent, focuses on developing competencies, or skills and knowledge. Hase and Kenyon (2007, 112) argue that for deep learning to take place it requires "an integrative experience where a change in behaviour, knowledge or understanding is incorporated into the person's existing repertoire of behaviour and schema." Where competency only requires knowledge and skills to be repeated or retrieved, capability "is a holistic attribute" requiring skills and knowledge to be reproduced in unfamiliar or novel situations (Hase und Kenyon 2007, 113). Blaschke interprets heutagogy as requiring a dual focus on competencies and capabilities which in turn "addresses the needs of adult learners in complex and changing work environments" (2012, 60).

Being true to Hase and Kenyon's (2001, 5) model where "assessment becomes more of a learning experience rather than a means to measure attainment," McAuliffe et al. (2008) highlight the problems associated with adopting a heutagogical approach within credentialing institutions. This can be problematic in tertiary institutions where measuring attainment is at the heart of gaining accreditation for a profession. Hase and Kenyon state that educators "should relinquish any power we deem ourselves to have" and concern ourselves with "developing the learner's capability not just embedding discipline based skills and knowledge" (2001, 5). These authors also acknowledge that tertiary and vocational education should be about "developing people who can cope with a rapidly changing world, a flexible workplace and uncertainty . . . be proactive rather than simply reactive in their thinking, and who can be more involved citizens" (2000, 6). Hase and Kenyon also state that education needs to go beyond the teacher, academic, and the intuition's self-interest. Figure 2 demonstrates McAuliffe et al.'s interpretation of Hase und Kenyon's (2001) seven key principles of heutagogy that are reflected in many postgraduate programs today.

In today's world at the postgraduate level, where competent professionals return to study, a heutagogical approach is not only essential but also desirable for a positive and productive outcome for these higher degree students. At this level, it is not about the academic supervisor being in charge of, or dominating the learning process, but instead guiding and assisting the student to negotiate the world of higher learning to enable their self-determined professional goals. It can also argued that the high-level cognitive connections required of self-determined learning have not yet been explored within the heutagogical frame.

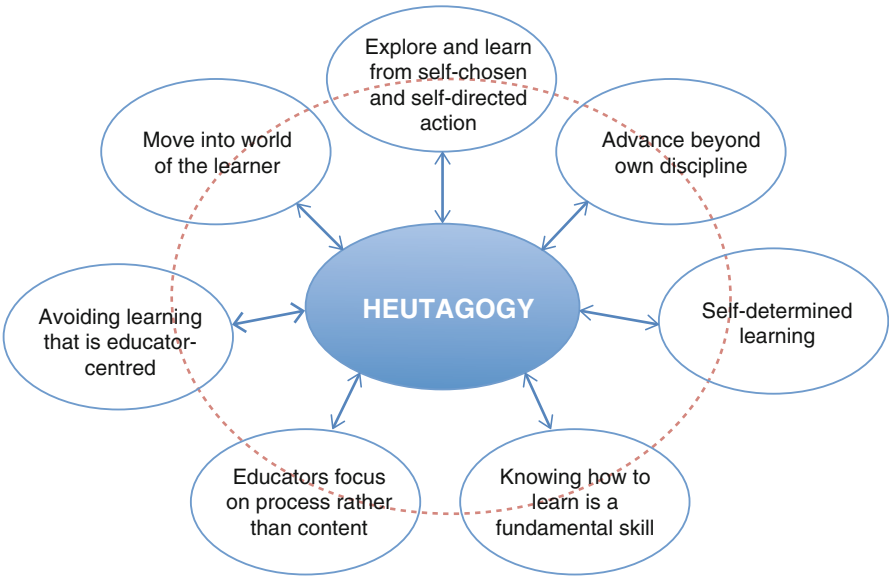

Fig. 2 Principles of heutagogy (McAuliffe et al. 2008, 4)

Hase und Kenyon (2001, 2007) situated Heutagogy within complexity theory moving away from simple cause-and-effect or linear models. Where andragogy takes a self-directed, linear approach to learning, heutagogy focuses more on a learner-centered philosophy encouraging autonomous learner practices. As such, heutagogy is recognized as an important characteristic of online and distant learning and can be aligned with the affordances of post Web 2.0 (for instance, the potential of mobile social media to support communities of practice) (Cochrane et al. 2012). In discussing the role of heutagogy in open and distance learning, Jakobsdottir et al. (2010, 108) observe "online professional learning communities hosted within social networking platforms have become the sites that support interdependent self-directed learning".

In Yilmaz und Keser's 2016 critical review of elearning environments that supported online education programs, motivation and the development of higher-order thinking skills have been determined as essential to students remaining in distance education courses. The integration of critical, metacognitive, and reflective thinking enables students to take an active role in their online learning. These higher-order cognitive skills assist students in improving their learning through the purposeful construction of knowledge where the students are required to consider their own learning and cognitive processes.

A heutagogical approach also aligns with a more fluid perspective on transitions within higher education. Gale and Parker identify three types of transition in higher education research: firstly, transition as induction via identified pathways; secondly as trajectoral development through distinct stages; and finally focusing on the whole life of the student; "transition as becoming" (2014, 738). Like Gale and Parker,

identified with the third approach is the most useful and effective position, specifically acknowledging the multiplicity of narrative and subjectivities of students' experiences and the need to devise flexible strategies, varied points of access to resources, provide alternate modes of study, and acknowledge diverse ways of knowing (Gale und Parker 2014). Research, Gale and Parker argue "needs to be cognizant with student's lived reality, not just institutional and/or systemic interests" (2014, 747). Not taking up this challenge risks assigning some students to marginal positions, devaluing types of knowledge and ways of being and is therefore counterproductive for all involved. Thus, heutagogy is in alignment with both the use of existing and emerging technologies and can be embedded in postgraduate education contexts, particularly those that require high-level cognitive connections.

High-Level Cognitive Connections

The development of high-level capabilities necessary for self-determined learning requires advanced skills of critical reflection and critical thinking that come from well-developed self-awareness and self-knowledge. Heutagogy is a complex problem-solving process for the student as they tussle with ways and means to enable their end goal. To be successful, students must engage in critical reflection requiring the advanced cognitive tools of metacognition and self-regulation. Metacognition includes knowledge of one's cognition including declarative and procedural knowledge, as well as being able to self-regulate the process through continual monitoring, self-correction, and controlling the learning process. These elements developed and created through "interactions with others, instigating change and critical problematisation" (Tarricone 2011, 44). Interaction with others, including peers and supervisors, provides postgraduate students the necessary scaffolded support and opportunities to verbalize the problem-solving process required within this complex learning environment. Self-knowledge and self-efficacy impact on purposeful reflection and the problem-solving process and are strong predictors of achievement (Schunk und Zimmerman 2007).

Self-determined learners must be highly self-regulated and with the ability to plan, monitor, and control the strategies necessary for a heutagogical-learning journey. Self-efficacy and personal agency (Bandura 1997; Zimmerman 1995) can be negatively impacted on this challenging journey and therefore interaction with others including peers who are either going through the process or supervisors who have walked this path before can mitigate self-doubt and low self-efficacy that can impact on the learning process. While Hase und Kenyon (2001) state that education needs to go beyond the teacher, academic, and the intuition's self-interest, it can be argued that in the online environment the educator and peer are pivotal in assisting postgraduate students in navigating a pathway towards self-determined goals and learning.

A further iteration of this process was highlighted by Somerville (2008) who developed a "pedagogical process" known as postmodern emergence that was designed to meet the needs of postgraduate students. Somerville was particularly

concerned "for those students for whom there was no choice but a radical alternative methodology, no other way to ask the questions or generate the knowledge with which they were so deeply entwined" (2008, 209), addressing the needs of students who, for some reason, are not perceived to, or perceive themselves to fit, a hegemonic student status. Postmodern emergence offers latitude and space for students in different circumstances to engage in academia in a generative and supportive fashion that responds to the rhythms of the student and their life.

Methodology

Educational case studies have been described as "bounded" texts suggesting that there are definitive edges of the narrative (Smith 1978; Stake 1995; Merriam 1998). Researchers acknowledge that while there is a sense of limitation or restriction in this approach, there is recognition of the multiplicity of every case including the context, the background, and the diversity of the individual experience (Johnson und Christensen 2010, 395). In this chapter presented are collective or multiple case studies to demonstrate not only the varied experiences of the postgraduate student but the different ways in which supervisors can meet their needs through alternative technologies.

In keeping with Stake's approach to analysis of case studies and desire for validation through investigator triangulation, engaged was a collaborative approach bringing together the four researchers (1995, 107). Each researcher brought different levels of postgraduate supervisory experience, epistemological standpoints, and disciplinary backgrounds to the analysis process.

Case Studies

Case Study 1: Heutagogy Through Facebook (Graduate Certificate)

The ubiquitous and vigorous use of social media influences our lives and seeps into spheres of higher education. Over time the "needs, capabilities and interests" of student populations shift and change and it possible that demographics raised exclusively on text media alone may think and learn differently to those immersed in social media, such as Tumblr, Instagram, and Facebook (Downes 2010, 28). With its capacity to increase social connectedness, social media has been described as "the new black" in higher education settings (VanDoorn und Eklund 2013, 1). By far the biggest influence is Facebook, a social media monolith, with on average 1.04 billion daily users reported in 2015 (Facebook, Inc 2016).

Although there is literature on the widespread use of Facebook in student populations (Whittaker et al. 2014), the educational potential of this social media software in promoting collaborative learning practices (Goodband et al. 2012) and its use in formal learning settings (Magogwe et al. 2015) there is still much to explore in relation to postgraduate students' purposeful engagement in Facebook in higher education academic contexts (Goodband et al. 2012). Of particular interest is

the heutagogical use of the Facebook by postgraduate students as a parallel platform to the formal education spaces afforded through learning management systems (LMS). In addition to the structured use of Facebook instigated by universities, postgraduate students also spontaneously engage in self-selected communities. For many students combatting the tyranny of distance, Facebook pages or groups can be likened to the on-campus face-to-face spaces where peer conversations take place around lesson content and relational trust is built.

For postgraduate student communities to thrive in social networking sites, there needs to be the facility for collective action, shared rituals, and social regulation. In addition, participants must create and visit their profiles with some regularity (Parks 2011). As Facebook is often used for other forms of social communication and students may already be using the software during the day, its ease of use lends itself to the development of group belonging and attachment to a higher education community (Parks 2011). When peers connect with each other via Facebook, they post and comment on messages and share information online in a range of media formats without spatial and temporal constraints (Hou et al. 2015).

The popularity of Facebook over formal meet and greet spaces in the lecturer designed LMS space suggests the importance of "technological agency" where the creation of a profile leads to friendships and meaningful social connections (Parks 2011, 119). Technological agency is embedded in the learner-driven process of heutagogy and is demonstrated in the case study of Kelly below. The following vignette highlights how, running alongside learning management software, Facebook can afford a place for students to speak candidly with one another, ask for assistance to find resources, and engage with peers to learn context and about themselves as learners.

Kelly is a high achieving student from coastal New South Wales (NSW). She is undertaking a post-graduate Graduate Certificate in Education course and aspires to be an English teacher when she graduates. Kelly's Facebook group started when students from one of her units commenced contributing ideas together on a closed Facebook group without lecturer presence. The group has grown as the members progressed on to new units and other students have joined. In the early stages, the participants began by asking questions such as: "I need the reading, where do I find it?" or "I can't find the text. Where do I find that?" But now the group members are posting regularly and messaging each other to share ideas and offer support.

The peer feedback in this group is immediate. Because Kelly's Facebook group are studying the same unit, postings are usually responded to with an answer or advice within a few minutes. Because of the timeliness of this social media, Kelly participates more on Facebook than she does in the LMS forums. Kelly uses Facebook on her mobile device and receives instant notifications. Although the LMS dispatches emails that Kelly can access through her smartphone, this avenue makes it a lot more difficult to obtain the immediate feedback available through Facebook due to having to sign into the LMS to access the information.

Ideas are tossed back and forth in this Facebook group. This specific assistance with assignments is very helpful for Kelly when she is struggling with a particularly challenging concept. She takes opportunities to express her own ideas and listen to others, thus broadening her own understandings. These dialogic opportunities both challenge and extend

her thinking. Through this online experience, Kelly has begun to recognise that she may commence her studies without completely understanding all of the aspects of an assignment question. She knows that she can draw conclusions too fast; reading the question quickly without dissecting it and, as a consequence, launch in prematurely. In Facebook, Kelly sees how others interrogate the assignment material and is alerted to task-related aspects that initially she did not consider were important. Through this peer interaction, she has learned that she can improve her study skills and develop more effective ways of approaching assessment tasks.

Kelly's peers also elaborate on assignments when she does not understand the lecturers' explanations and asks for their help. Sometimes draft writing is spontaneously exchanged. In a reciprocal relationship, Kelly reads and provides feedback on assignments with others. Kelly is mindful that the articles she finds and contributes in Facebook may be used by peers leading to her work appearing unoriginal to a marker. Careful to avoid being questioned about plagiarism, Kelly assists others who are struggling, but only provides starter text resources. Kelly is also aware of the peril of disseminating incorrect information as she has seen students receive incorrect information from their peers. Kelly is therefore cautious when she discusses an assignment or particular activity. Kelly enjoys the freedom of Facebook and is wary about the exposure of LMS forum posts. Kelly is concerned that the lecturers judge the quality of her LMS posts and may be influenced by these perceptions when grading her assignments. Therefore, Facebook, for her, is a more relaxed and safe way to communicate with peers.

Analysis

This case study uses an enactment of complexity theory through spontaneous nonlinear development of heutagogical learning via the software platform. The students use Facebook for both pastoral and academic purposes, demonstrating technological agency through their learning oriented social connections. As illustrated by Kelly, the coconstruction of more academic participatory practices that target double-loop learning (Blaschke 2012) evolves over time in an emergent way. While the site initially performs a functional purpose for locating resources, the students began engaging in deeper learning practices of exchanging ideas through online dialogue, reading peer material carefully to provide feedback, and challenging personal understandings of how to undertake academic study.

Kelly displays heutagogical capabilities in promoting learner-driven learning. She critically deploys metacognitive processes to engage with information, experiences, and ideas as she reflects on her learning with others in the group. She executes cognitive control using the dialogue to deconstruct assignment questions and evaluating her approach to assignments. In this way, she self-monitors, self-corrects, and self-regulates (Bannister-Tyrrell et al. 2014). The inter-reflection that supports Kelly's self-regulation is particularly important for postgraduate students who may need to build relational trust in online contexts before more substantive metacognitive interchanges take place. The immediacy of responses afforded through Facebook promotes interdependence that is less fluid in the LMS site. Kelly is able to ask questions and check her assumptions and perceptions quickly.

Kelly's experience also illustrates a reflective component of heutagogy. Kelly controls, monitors, and regulates her learning strategies (Tarricone 2011) through her

reflection on both Facebook and the LMS. She modifies how she approaches peer feedback on the basis of the misinformation she has seen disseminated by peers in Facebook. She is careful to avoid posting material that could suggest plagiarism when appropriated by others and submitted for assessments. She is aware of the judgments of lecturers in the LMS and therefore posts judiciously, using Facebook for forum posts that may appear ignorant or suggest a lack understanding by others.

Kelly and her peers use Facebook to address the tyranny of distance. Where Kelly uses social media technology to participate in heutagogical relationships with peers, in the next case Chaz relies on Cloud technology to access the organizational infrastructure of the university. Unlike Kelly, Chaz demonstrates heutagogy through the use of technology to mitigate the issue of studying in an area separated from both higher education institutions and ready access to internet technology.

Case Study 2: Heutagogy Through Cloud Technology (Masters)

Cloud technology is a time-saving tool that provides an online storage space for documents, videos, and other forms of data. It is a composite of software and infrastructure located beyond the individual user's computer (i.e., in the cloud – on a computer located elsewhere). First made available in 2008, cloud technology is low cost, easily accessible, and requires little maintenance (Yang und Tate 2012). It is an apt tool for collaborations accessible to nominated users and provides easy and fast access to documents that might otherwise take time to be emailed or sent in some other fashion (Wiegand 2009). In higher education, networks of researchers have often used cloud technology as a means for sharing resources (McWhorter und Julia Delello 2015). In this case study, cloud technology was deemed the most appropriate tool for disseminating readings to a geographically isolated postgraduate student.

Chaz is mature aged, enrolled in a Master of Education and living in the remote regions of Australia. His goal is to complete a 50,000 word thesis on political and spatial relations in education. It is a contentious and relatively unmarked field that sits on the periphery of the discipline. It is original and exploratory scholarly work that may lead to a PhD.

Driven by his life experiences, Chaz talks of his desire to set an example to his children and grandchildren. Chaz is of quick wit and sharp intellect. He has robust political views and a healthy suspicion about theoretical positions of a neoliberal and postcolonial academia. Like many post graduate students, however, he struggles to articulate these theoretical and conceptual frameworks in the text. Chaz is, however, committed to meeting his goals and has demonstrated a capacity for self-directed learning in his undergraduate studies. His supervisors are convinced of both his intellect and his practical capacity to undertake original research.

The transitory life Chaz leads at this time is what marks him apart from many of his peers. He leads an isolated and solitary life, working in remote areas of Australia and moving regularly. There is often limited and intermittent internet access in such areas. When Chaz is able, he engages in enthusiastic supervision sessions and regularly demonstrates a thirst for readings that will challenge him.

The challenge for Chaz's supervisors is to develop a flexible learner defined procedure. In this case, they need to be at the ready to respond to Chaz's robust theoretical debates and

ensuring a ready supply of multiple and diverse readings. His capacity to download books and articles is precarious and irregular. The solution is to provide 'readings dumps' on 'clouds' so that whenever he is in a location that can cope with large downloads, he can access them.

Given Chaz cannot predict when he will have such access to the internet, the supervisor needs to be ready to respond at short notice. Given too that Chaz is in a state of productive theoretical and conceptual exploration, the supervisors need to have multiple readings at hand. Supporting Chaz has required a willingness to be flexible, responsive and open to the unexpected.

Analysis

In this case study, the rhythms of a life in a remote landscape direct the relationship between supervisors and student. As Somerville (2007) notes, there are some cases in which the "radical alternative" is the most fitting method. In Chaz's unusual circumstances, marked by isolation and intermittent contact, fluidity is required and a willingness of the supervisors to be "at the ready" to respond to Chaz's requirements. Chaz is, however, not a needy student. On the contrary, he consistently demonstrates an heutogogical approach to his studies through a willingness to work with and around the challenges of undertaking postgraduate studies while following such a nontraditional student lifestyle (Blaschke 2012). Chaz emanates the qualities described by Hase und Kenyon (2001) through his adaptability to a transient life while still engaging in high order educational undertakings.

In supporting Chaz's postgraduate research, the university and the supervisors decenter the mechanisms of the institution by employing the principles of heutagogy (McAuliffe et al. 2008, 4). In utilizing specific times of engagement through cloud technology, the university moves into the world of Chaz. By making the readings and literary guidance available in a cloud, at his convenience, he is able to continue his research unchained by the burden of proximity to facilities. He can continue his unique and original research in the most appropriate space, unshackled by temporal restraints of the very distant urban world of the university.

One might, from the comfort of a university office, lean toward romanticising Chaz's existence but this would ignore the commitment to self-directed and self-determining learning he demonstrates. As McAuliffe et al. (2008) note, a heutagogical approach requires a firm hold on process and on knowing how to learn. To succeed, Chaz demonstrated a steady commitment to critical reflection, problem-solving, and resilience. As Schunk und Zimmerman (2007) determine, such qualities and the ability to regulate one's own learning is crucial. For Chaz, his intermittent engagement to the multiple resources of the "reading dumps" is a small but essential part of his educational journey. The larger challenge is the self-efficacy and willingness to develop his own strategies to develop his research thesis.

While many aspects of distance education may be shared among postgraduate students, it is evident from the next case study that the choices and tools required can be radically different. Where Chaz prefers a reflective and often solitary approach to his studies, Jordi has come to prefer the immediacy and personal engagement

of Skype and Second Life. These two approaches to study are marked by their difference and a reminder of the multiplicity of the preferences and pathways of students.

Case Study 3: Heutagogy Through Innovative Technologies (PhD)

The following case study follows Jordi, a PhD student located in another country who has access to innovative and immersive technologies to assist in her studies and access to supervisors. Although traditional communication via email is still used, synchronous technologies such as Skype, Adobe Connect, and the use of a virtual world such as Second Life are also utilized. Through this selection of communication tools, Jordi is able to select the tool that is most suitable to her at that particular time. If she just wants to share a document, then email is the best solution (or sharing a Dropbox folder). If she wishes to demonstrate something through a drawing tool and text, then Adobe Connect is used. If she wishes to talk, she can use Skype. However, her preferred method is through the use of Second Life as she finds this more immersive and engaging. She feels like she is really there with her supervisors (Gregory und Tynan 2009). Second Life is a 3D immersive virtual world where Jordi and her supervisors meet, in a virtual space, to discuss Jordi's studies and research, through the use of avatars. Jordi animates her avatar to provide the body language that is missing in most other communication tools. She also uses lip sync so that it appears as if she is really speaking to her supervisors.

Jordi is a PhD student in her third year studying part-time (usual time to complete is six years). She lives and works in a large community in New Zealand. Jordi has access to a fast speed internet connection and a high powered computer. She has had access to some of the academics at UNE through her various online communities and decided to study in Australia with these potential supervisors. Although New Zealand has a lot to offer Jordi, she chose to study in Australia for personal reasons.

Jordi use various means to communicate with her PhD supervisors. She has tried email (asynchronous communication), Adobe Connect, Skype and Second Life (a 3D virtual world), all synchronous communication methods, although all have the ability to leave asynchronous messages.

Other than her supervisor's expertise, Jordi also has access to academics in the Australian and New Zealand Virtual Worlds Working Group (see, for example, http://www.vwwg.info) who have set up a PhD group where students (past and present) and supervisors get together on a monthly basis to discuss issues they are having and various methodologies and analysis tools. Jordi has found this invaluable because she not only has her two supervisors, but access to a plethora of other experts in the field. these include the supervisors and other higher degree research students. As the students in the group are at various stages in their candidature, it has been a great place for support both academically and personally for motivating her to keep going, even when things get tough.

Jordi has displayed independence through her journey as a PhD candidate. She interacts with her supervisors, but she also uses her initiative to interact with her peers through the Australian and New Zealand Virtual Worlds Working Group PhD group. As her peers have had similar experiences, it is easy to discuss, relate and to share. Their interactions with virtual worlds and the research journeys provide a common ground on which to discuss

issues. Jordi has also found it invaluable to gain input from other supervisors who may provide different perspectives to issues she may be facing.

Analysis

This case study offers an overview of innovative technologies used by Jordi to engage and liaise with her supervisors and peers. Jordi demonstrates a high level of self-directed learning, which is a requirement of this level of study/research. Jordi and her supervisors use a variety of technological platforms to communicate. Jordi requires her supervisors have the expertise that she has to be able to engage in this level of interaction and communication. Jordi goes beyond this to interact with other academics and peers with similar interests and experiences. She is able to glean different perspectives and continue to stay motivated through this interaction and sharing. Jordi is the epitome of a heutagogical learner.

Summary of Analyses

Across these three case studies, each student has adopted a heutagogical approach to their learning regardless of the structure of the postgraduate degree. Through a range of self-selected technologies, each student not only overcomes the many difficulties of studying online, including the tyranny of distance and isolation, but evidences the development and refinement of higher-order cognitive processes required to meet their self-determined learning needs. In each example, double-loop learning is clearly evident as the three students move beyond a linear progression model of learning, adapting their beliefs and actions as required to meet their individual learning goals.

While Kelly has undertaken a highly structured graduate certificate that is primarily "educator-centered," the students in this course have chosen a social media platform, i.e., Facebook, to move their learning beyond the "sight" of their lecturer. This decision not only puts them at the center of their own learning and learning process but also ideally moves their learning beyond the intension of the content of the unit. Through this medium, Kelly demonstrates evidence of growing self-awareness, self-regulated, and self-directed learning behaviors. These behaviors include the identification of perceived weaknesses in her learning regime. The opportunity to interact with other learners highlights for Kelly her unsophisticated approach to ask questions and the need for her to refine her declarative, procedural, and strategic knowledge and approach, including what is shared and not shared with her peers.

Not only is Chaz challenged by the high-level requirements of a research Masters degree, his journey is additionally made even more difficult by the learning environment he chooses to work within. This vignette demonstrates that Chaz's ultimate success in completing his degree rests on his ability to remain highly motivated, self-aware, and self-regulated in his learning to overcome the many self-imposed challenges his goals must endure. However, this case study also challenges the original definitions of heutagogy in which learning and education move beyond the teacher

or academic through a highly flexible and capable learner who certainly reflects an ability to adapt to his challenging environment. Without the support, flexibility, guidance, and resilience of his supervisors who are willing to meet his demanding learning regime with minimal notice, his ultimate success might not eventuate on his self-selected terms.

Finally, Jordi's vignette offers a glimpse into the future of online learning. A PhD could be considered the epitome of self-directed learning, as part of the process of enrolling in this degree requires proof of higher learning competencies and capabilities that are usually developed and demonstrated in prior degrees. Jordi uses a wide variety of technology platforms to access multiple sources of expertise beyond her own supervisors, including other academics and peers with similar interests and experiences on which she can draw. Jordi clearly reflects a highly flexible and proactive learner who is using both simple and advanced technologies to gain the knowledge and interactions her work requires for its ultimate success.

Discussion

> No man is an island, entire of itself; every man is a piece of the continent, a part of the main.
> – John Donne.

Postgraduate students undertaking their studies demonstrate how technological agency is embedded in the learner-driven process of heutagogy. These learners are not just proactive in the learning process but part of an online community of learners that includes their peers and other experts including their supervisors. While the original designers situated heutagogy as a student-centered approach in this chapter, it has been argued that online self-directed learning for postgraduate students requires higher-order cognitive processes that are enabled through the essential interaction with others.

Rather than binarizing the roles of educator and learner in regard to their participation, mapped are online landscapes as heutagogical environments across these three case studies. Whether postgraduate students leverage new critical ideas from engagement with the disciplinary communities of practice that form the basis of their studies, or connect in virtual spaces with social media or LMS communities, learning is a process of emergence through interactions with others.

Self-directed learning at the postgraduate level requires high-level cognitive competencies and capacity to learn, as these three case studies demonstrate. For example, each student faced challenging problems in their learning and through collaborations with peers and other experts including their supervisors they were able to negotiate positive outcomes through a series of higher-order cognitive processes.

These processes included critical thinking and reflection, metacognition, and self-regulation. Metacognition relies on critical reflection such as students drawing on their self-awareness, self-knowledge, and experience to perform inductive thinking and reflective judgments. However, critical thinking is only metacognitive when it is

evaluative and purposefully reflective. Practices of self-correction and advanced levels of self-awareness that contribute to a successful and appropriate solution to a problem demonstrate high-level metacognition (Tarricone 2011) as reflective in the three case-studies presented. In each case study, the interaction of self-knowledge, interaction with others, and critical reflection the necessary re-evaluation, reconsideration, and restructuring of knowledge can lead to transitional learning (see, for example, Fig. 3).

Heutagogy requires students to have a solid and firm hold on the learning process (McAuliffe et al. 2008), they must evaluate and highlight the knowledge known, and that to be known for the successful completion of their self-determined learning goals. To this, they must analytically reflect on prior knowledge, beliefs, and understandings; know where to find the information required; and then regulate the learning environment. In the online environment, the interaction with others is pivotal to this process.

Future Directions

The small qualitative study reported highlights the conceptual nuances of heutagogical practices in higher education. The authors suggest a further area for fruitful investigation could include using the dimensions outlined in Fig. 3 as a priory set of codes to investigate heutagogical practices in higher degree research teaching and learning.

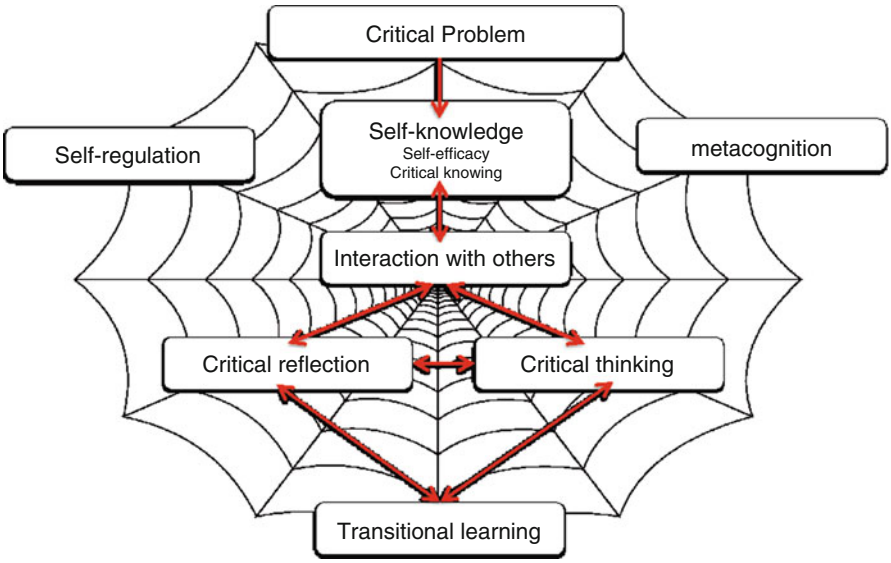

Fig. 3 Higher order cognitive processes enabled through a heutagogical approach to postgraduate online study

Particular attention could be paid to educator self-regulation and metacognition. It is our assertion that practitioners in higher education enhance their own practice when they critically evaluate and critique their ontological and philosophical beliefs and values. This scrutiny requires close examination of perspectives of the world and in particular one's declarative knowledge as knowledge about oneself and the influences on one's learning. Research becomes a generative practice of peeling back layers to consider understandings that influence practitioner decision making and have a significant flow-on impact on students.

Closer examination of heutagogical practices can enable better understandings of student. A more intensive, longitudinal look at specific experiences of a cohort of higher degree research students would furnish evidence on the dimensions alluded to in this chapter. In particular, there is scope for close scrutiny of self-regulation and professional identity development in relation to student heutagogy. Many higher degree research students enter higher education settings as established experts with competencies in their respective fields. Yet, in higher degree research work, they also take on new knowledge frameworks and embed academic literacies and procedures to cope with the demands that students regulate their own learning. They may come into academia with high levels of capability or confidence, and they are required to build and adopt skills required for academia. Further studies could shed light on these complex and contested processes.

Postgraduate study in a heutagogical framework implies that students have to be able to investigate their own beliefs in relation to those of peers, supervisors, and the structural shape of the institution. Students locate the self within academia and the broader discourses of society. Online learning requires different teaching practices to be successful, particularly at the postgraduate level. Leveraging diversity, research that targets heutagogical awareness, addresses the notion of life-long learning, an attribute associated with both a social justice and economic imperative. The impact of this chapter in its signaling of possibilities for ongoing research, capacity to inform practice and make shifts in social justice with access for a diverse student population.

Conclusion

A heutagogical approach to online learning requires the support of, and access to peers, mentors, and experts to encourage and develop the deep reflection necessary for meaningful learning. This, in turn, enables students to navigate the treacherous waters of postgraduate study, where students might otherwise find themselves isolated and lacking a community of like-minded peers. At this level of study, online students require opportunities for reflective and collaborative learning opportunities required by self-directed learning. As these case studies demonstrate, access to online social networks, virtual worlds, and technologies that can give synchronous access to supervisors when facing technology challenges are highly effective support mechanisms for the heutagogical approach to learning. All postgraduate students require the opportunity to question self-beliefs, values, and attitudes that impact on

critical and higher-order thinking, therefore access to a variety of platforms must be accessible for those students undertaking postgraduate study.

The case studies presented in this chapter add to the research that Hase and Kenyon stated in 2007 confirms the validity of heutagogy as a concept. Online postgraduate study operates within "complex adaptive systems" (115), and these students require a new level of support if they are to develop into autonomous and effective self-determined learners. Entering postgraduate study students bring with them a high level of professional and domain-based knowledge, competencies, and capabilities associated with their field of expertise. However, pursuing further study and research requires another layer of competencies such as academic skills and knowledge, while developing a level of capability or confidence that will drive and support this new knowledge as students make the necessary connections with prior knowledge to support the direction of their self-determined study. Technology enables the necessary connections with peers, experts, and mentors for collaborative learning and reflective practices that assist the development of higher-order cognitive competencies and capabilities for postgraduate students.

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