Transition, Decoding and Heutagogy; A strategy for improving undergraduate learning in sport, health and exercise

Danny Buckley   d.buckley@herts.ac.uk

Abstract:

Heutagogy, an established concept in educational literature, puts an emphasis on the development of a student's ability to understand how they learn certain skills and abilities.

To gain a clearer understanding on the implementation of heutagogy within the higher education environment, the present study considered the adoption of heutagogical approaches with students at University. A review of the literature was conducted to understand the use of pedagogy and andragogy in higher education and how a heutagogical approach could create a self-directed learning experience. Contemporary research has evidenced that the implementation of heutagogy at higher education encourages students to develop highly employable skills such as determination and initiative. In contrast, it has been discovered that students find heutagogy to be challenging, therefore a progressive development from pedagogy to andragogy to heutagogy is required. Nevertheless, the beneficial outcomes are apparent to educators and students, and increase employability rates. The beneficial learning outcomes of heutagogical learning such as employability and self-directed learning is discussed.

1.0 Introduction:

In the modern society, educators are tasked with the development of lifelong learners with the ability to thrive in an ever-changing complex world. Thus, pedagogical methods are seen to be unsuitable for preparing learners for the modern workplace (Blaschke, 2012). It is suggested that a more self-determined and self-directed approach is required to enable the learners to understand how they have learnt a skill and to what extent an educator has taught them how to teach themselves (Kamenetz, 2010; Peters, 2004). With a similar opinion of andragogical education it seems a new pedagogical approach is required to utilise new teaching methods, learning resources and technology (Blaschke, 2012). Bhoyrub et al, (2010) also recognise the need for an updated approach aimed at students in higher education which could develop an autonomous learner.

In response to the revolution of teaching theory in higher education (Hennissen, Beckers & Moerkerke, 2017) the concept of heutagogy offers particular principles and practices which puts an emphasis on the development of a student's capability and capacity to learn

(Bhoyrub et al., 2010). Heutagogy has been defined as the study of self-determined learning (Hase & Kenyon, 2000) and has also been identified as a holistic approach which develops a learner's capabilities by making learning a proactive process (Blaschke, 2018). In addition, Hase and Kenyon (2007) suggest that heutagogical learners serve as "the major agent in their own learning, which occurs as a result of personal experience" (p.112) thus indicating that the modern-day student must take an element of ownership within their studies by becoming self-directed and self-determined.

Heutagogy has been praised for containing particular attributes such as autonomy and self-directedness (Blaschke, 2012) and is of particular interest with distance learning and education. Whereas pedagogy refers to the methods of practice and teaching as an academic subject at a lower level of maturity (Richardson, Byrne, & Liang, 2018) and andragogy transfers this practice to facilitate adult education (Canning, 2010). Blaschke (2016) recognises that self-determination is a key characteristic of distance education, thus, heutagogical education seeks to enable a self-directed approach to student development (Hase & Kenyon, 2001). As we consider the modern society, it is becoming increasingly important that graduates possess attributes such as; self-awareness, confidence, decision making skills, adaptability, problem solving and initiative (Jorre de St Jorre & Oliver, 2018) which all link to independence and the ability to think autonomously. Interestingly, proven benefits of heutagogical education such as self-determination, self-directedness and autonomous education all relate to the modern requisite of graduate employability (Blaschke, 2012, 2018; Hase & Kenyon, 2001).

In recent years there has been an evident shift within higher education which has directed academics and educators to an overly nourishing approach to learning (Nkuyubwatsi, 2016). Interestingly, research by Berger and Wild (2017) and Canning (2010) has also identified that 'spoon-feeding' students throughout their first year at University can have a negative effect on the rest of their undergraduate degree. Price (2014) identified that student autonomy is a developmental journey which requires a minor redundancy from the educator at the start of the learner journey. In relation, heutagogy has been recognised as a scaffolding procedure which gives the learner or practitioner a safe environment to make independent mistakes (Blaschke, 2018). It is understood that the learner eventually develops the ability to autonomously make decisions and increase their own capacity to learn. The purpose of this paper is to discover whether the implementation of heutagogical practice in higher education has the potential to improve the students' educational journey by creating self-directed and self-determined learners.

2.0 Research Methods:

This paper offers an extensive review of the previous and current research available on the practices and outcomes of heutagogy. In approaching the research, the author sought to establish the identified benefits of adopting a heutagogical approach in higher education

whilst discovering whether the student learner journey is then negatively affected by over-nourishing at Level Four. By reviewing current heutagogical literature and practice the author has used the pedagogical theory of Decoding the Disciplines (Pace, 2017) in an attempt to identify how heutagogy can be adopted and used in practice as an educator. A review of the literature initially defines pedagogy, andragogy and heutagogy, describing the connection of the three established educational concepts. This paper provides a basis for further research into heutagogy as a tool for student development in higher education.

3.0 Pedagogy:

Defined by the English Oxford dictionary as "the method and practice of teaching, especially as an academic subject or theoretical concept", pedagogy is the discipline which helps us understand how the theory and practice of teaching can influence student learning (Richardson, Byrne, & Liang, 2018). Pedagogy refers to teacher interactions and the social environment established by the educator (Dyson, Griffin, & Hastie, 2004). Pedagogic research aims to enhance human potential through the acquisition of specific skills.

Although pedagogy is defined as the practice and profession of teaching (Toetenel & Rienties, 2016), academics are now using this term to specifically describe children's learning (Blaschke, 2012) as the word 'Peda' originated in the Greek language and means child-leading. With a recent focus on the teaching techniques within higher education, an adult centred learning discipline was required (Hase & Kenyon, 2001), andragogy offered academics commonalities of theory and practice which also related to the education of adult learners.

4.0 Andragogy:

The literature has demonstrated that students may learn more and benefit from choosing their own case scenarios around which to base simulation activities (Valler-Jones, 2014; Baile and Blatner, 2014). Case studies are often used in many fields of higher education, particularly in business and management schools, as a way of creating real life situations to enable the students to develop employability skills (Fry et al, 2015, pp333). This concept is easily transferrable into nursing practice allowing students to "play out" clinical scenarios and think about how they would manage them in a practice setting, developing effective communication skills. As final year students, these skills may be of great benefit when attending job interviews. This approach would also empower students, and give them some autonomy over simulation style education, which has proven to be an effective approach when working with adult learners (Knowles, 1975, cited in Fry et al, 2015). However, this style of learning may not suit some students; cultural influences may mean some students feel uncomfortable with this style of learning or may view a case scenario differently because of their cultural background (Frambach et al, 2014; Levitt, 2016). Equally, those students who are quieter and do not engage as readily in the classroom, may feel excluded

if they find learning in this way a challenge, (Collins & Ting, 2010). Therefore, adequate preparation of students is vital to the success of simulation sessions. It should be considered that this is likely to increase preparation time for the lecturer and will need careful facilitation to ensure students are able to come forward with suggested scenarios. Care should also be taken to ensure patient and staff confidentiality when using "real-life" scenarios so the lecturer would need to set clear ground rules with students (NMC, 2015).

Alongside giving students the option to develop their own case scenarios for simulation training, the literature suggests that adequate preparation of the students is key to the success of the activities (Baile and Blatner, 2014; Warland, 2010). Some students may find this style of learning activity daunting, whilst others may embrace the opportunity to learn through practical experience. However, by adequate preparation, and consideration of which roles students may choose to play during the activity, there is opportunity to support learning for all students, regardless of their preferred learning style (Tutticci et al, 2016). Quieter learners or those who prefer to reflect on experience may learn better from taking on the role of observer during such activities (Honey and Mumford, 1986).

Several studies have used video-recording of simulation activities to use after the session to aid debriefing (Burden et al, 2014; Valler-Jones, 2014). This may be of benefit, not only to assist in debriefing, but also could be a valuable learning tool for students to revisit after the session. Debriefing after simulation activities is key for several reasons. It enables students the opportunity to come out of "role", and to pause and reflect on the situation (Warland, 2010). For simulation activities to be effective, it is important for students to be able to share thoughts, think about what worked well and what might be improved upon, and what they have learned for the session (Warland, 2010; Lavoie and Clark, 2017). Using a structured reflective model, such as Rolfe (2011), which asks "what", "so what", and "now what", may be of benefit to aid effective debriefing.

Three of the research studies reviewed demonstrated a reduction in student anxiety and increased confidence prior to practice placements following a simulation activity (Khalaila, 2014; Hope et al, 2010; Warland, 2010). This must be seen as a positive impact for the students, the lecturers and the university. When students go out to practice placements they are representing the University of Hertfordshire, which is an important factor. Enhanced communication skills when working with patients and families continues to be a high priority in healthcare (NHS England, 2012). Multiprofessional simulation exercises, which include nurses alongside other health professionals, have also been shown to increase confidence in communication skills, and therefore improve patient outcomes and quality of care (Truijens et al, 2015; Donovan et al, 2003; Ross et al, 2015). Therefore, providing simulation training that increases student confidence has to be a positive thing.

5.0 Heutagogy:

The literature suggests that using a more structured approach to simulation exercises for third year student nurses during their final practice module would be of benefit. Engaging with the students in terms of preparation for simulation activities appears to be key. For example, asking students to agree on case scenarios that could be used for simulation, particularly considering situations where they have experienced difficulties in communication or witnessed the difficulties of others. Alongside adequate preparation comes the need to create an environment whereby students feel comfortable with participating in simulation. As has been shown, using students to play all parts in a simulation exercise can have a positive impact on the experience; and could make the exercises less labour intensive for the teaching team, as fewer facilitators would be required. However, the facilitators would need to be very skilled and adequately prepared to be able to support the students to undertake all roles within simulation and additional time may be required to prepare the students in advance of the sessions.

The literature has also stressed the benefits of structured feedback following simulation sessions. Currently, there is limited time for this built into the sessions that are timetabled; but using a debriefing approach would allow the students to be able to clearly demonstrate their learning from the scenario-based simulation sessions and consider how they might be able to develop their communication skills to support the completion of their final management placement in practice. This may be facilitated by recording of the scenario activities and playing them back to prompt discussion. It may also support future employment, by improving skills required to be demonstrated in an interview situation.

Moving forward it might appear sensible to try and measure the impact of these sessions. This could be achieved by assessing students' confidence in communication skills prior to the simulation session, after the debriefing exercise, and at the end of their final management placement (three months later) to see whether the knowledge gained has been lasting and well applied in the practice setting. This would enable the lecturing team to effectively evaluate the learning gained from simulation activities. It would also demonstrate a commitment to the public, giving high priority to the development of effective communication skills amongst newly qualified nurses.

It is likely that simulation style learning activities and effective communication skills will continue to be high priority when the new Standards for Nurse Education (NMC, 2018) are published by the NMC in a few months' time. Therefore, it is imperative that further consideration is given to this style of teaching to ensure final year nursing students develop the best possible communication skills to support their practice.

6.0 Commonalities and Differential Aspects of Pedagogy, Andragogy and Heutagogy:

Pedagogy, Andragogy, Heutagogy compared.

Heutagogy: The management of self-managed learners

	Pedagogy Children's learning	Andragogy Adults learning	Heutagogy Self-directed learning
Dependence	The learner is a dependent personality. Teacher determines what, how and when anything is learned.	Adults are independent. They strive for autonomy and self-direction in learning.	Learners are interdependent. They identify the potential to learn from novel experiences as a matter of course. They are able to manage their own learning.
Resources for learning	The learner has few resources – the teacher devises transmission techniques to store knowledge in the learner's head.	Adults use their own and other's experience.	Teacher provides some resources but the learner decides the path by negotiating the learning.
Reasons for learning	Learn in order to advance to the next stage.	Adults learn when they experience a need to know or to perform more effectively.	Learning is not necessarily planned or linear. Learning is not necessarily based on need but on the identification of the potential to learn in novel situations.
Focus of learning	Learning is subject centred, focussed on prescribed curriculum and planned sequences according to the logic of the subject matter.	Adult learning is task or problem centred.	Learners can go beyond problem solving by enabling pro-activity. Learners use their own and others' experiences and internal processes such as reflection, environmental scanning, experience, interaction with others, and pro-active as well as problem-solving behaviours.
Motivation	Motivation comes from external sources – usually parents, teachers and a sense of competition.	Motivation stems from internal sources – the increased self-esteem, confidence and recognition that come from successful performance.	Self-efficacy, knowing how to learn, creativity, ability to use these qualities in novel as well as familiar situations and working with others.
Role of the teacher	Designs the learning process, imposes material, is assumed to know best.	Enabler or facilitator, climate of collaboration, respect and openness.	Develop the learner's capability. Capable people: * • Know how to learn • Are creative • Have a high degree of self-efficacy • Apply competencies in novel as well as familiar situations • Can work well with others.

Figure 1: The difference between pedagogy, andragogy and heutagogy (taken from Heick, 2018).

It is understood that the progressive link between all three of the 'gogies' enables learners to become active and then proactive in identifying how their learning needs will be met. Heutagogy is a form of self-determined learning where learners are highly autonomous and well prepared for the demands of dynamic complexity (Blaschke, 2018). It could be conceived from the continuum of 'gogies' that higher level learners who are more experienced and take greater responsibility for their own development will require less instructor control and more freedom or flexibility in course structuring. Canning (2010) suggests that students should be encouraged to develop learner maturity and self-reliance, however this can be affected if dependency and being directed by educators is within the course requirements (Bhoyrub et al., 2010) for example, professional nursing degrees. Figure 1 contrasts the different dependencies, resources, reasons, motivations and roles of the educator in each of the three approaches.

There is a clear shift from instructing students to learn, to facilitating students to understand how they learn but also, how the learner progressively sets the learning agenda more, which develops their own learning and identity (Heick, 2018). Figure 1 clearly displays that a progressive redundancy of teaching resources and the educator creates a richer focus and motivation for the students within the heutagogical learning environment. It is clear that heutagogy tends to develop capabilities rather than competencies (Price, 2014), and learners who are appropriately equipped for the complexities of the modern workplace (Toetenel & Rienties, 2016). Interestingly Kale and Singh (2007) describe capabilities as the capacity of learners to use competence in familiar, unfamiliar and changing situations. It can be criticised that grouping all child learning into pedagogy is inappropriate as education is varied between the ages of three and eighteen. Heick (2018) accepts this notion but acknowledges that child, and therefore pedagogic learning does encompass teacher-led education and is focussed on the progression of curricular requirements. When linking to Blaschke (2016) it is clear that learning is most effective when educators allow students to react to evolving circumstances, it could be suggested that the progression from pedagogy to heutagogy (as seen in Figure 1) facilitates this educational adaption.

7.0 Decoding the Disciplines:

Middendorf and Pace (2004a) define decoding the disciplines as the process of increasing student learning by tightening the gap between thinking as a novice and an expert. As seen in Figure 2, this theoretical model begins by identifying the 'bottlenecks' to learning, otherwise known as implications in the learning process (Sundt, 2010). This model then progresses by educators and specialists facilitating the models and practices required to overcome that particular implication. Interestingly, the review phases of this model are divided between an assessment of the student's mastery followed by the distribution of new knowledge (i.e. sharing experiences) with colleagues (Currie, 2017). Figure 2 is an adaption from the work by Middendorf and Pace (2004a) to better understand where a heutagogical approach can be implemented when educating students in higher education. As suggested by Blaschke (2018), the educator must first establish an area within the student's ability which requires attention before creating an appropriate task, this would be associated with the first three elements of Figure 2. Interestingly, this also links to the zone of proximal development (Vygotsky, 1980) as students cannot complete these tasks unaided, but can complete them with some guidance (Eun, 2017). Within the zone of proximal development, students are required to seek support before working autonomously. The fourth, fifth and sixth element of Figure 2 relates to the educator implementing a redundancy within the situation in order to allow the student to adopt a level of self-dependency. Finally, the educator and the student would distribute the acquired knowledge during this experience. Interestingly Bhoyrub et al. (2010) express that a circulation of what has been discovered during a self-directed experience gives the participant an additional opportunity to take control of their own learning. Pace (2017) also

acknowledges that considering the many ways we could share our results from the decoding process gives the educator another opportunity to decode and reflect upon the practice that has been undertaken.
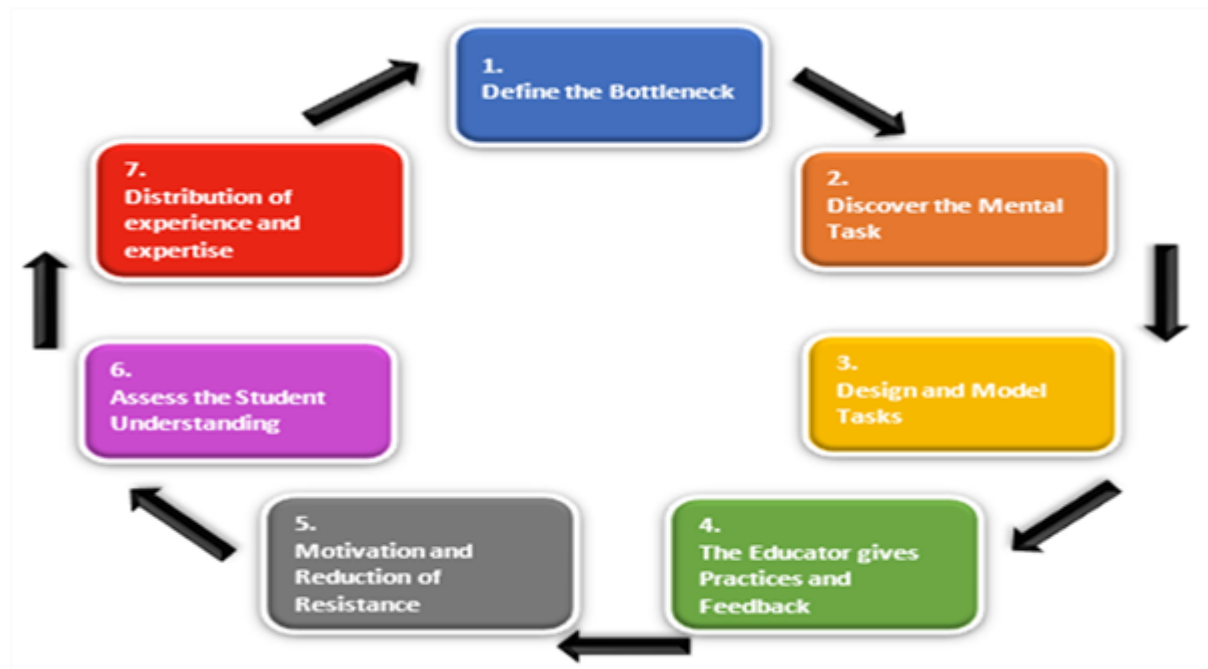

Figure 2: The Decoding the Disciplines Wheel. Adapted from Middendorf and Pace (2004a).

8.0 Discussion:

8.1 The Benefits of Heutagogical Learning

Until recently, there has been a lack of empirical evidence to suggest that a scaffolded learning practice for students is a beneficial approach to improving a student's educational capability (Price, 2014). Contemporary research has demonstrated a demand from employers, academics and even students which suggests that independency as a student is unique but valuable (Blaschke & Hase, 2016; Richardson et al., 2018; Sin & Amaral, 2017). However, Wood and Su (2017) have suggested that millennia students are blind and ignorant to the value of self-determination. Similar remarks are made by Nkuyubwatsi (2016) who suggests students are becoming more dependant.

Furthermore, Jorre de St Jorre and Oliver (2018) state that modern students as consumers demand more from their tuition fees, which involves nourishment and 'spoon-feeding' (Nkuyubwatsi, 2016) suggesting that students are ignorant to the importance of working autonomously towards their degree. Moving forward, Cassidy (2006) identifies a number of 'non-technical skills' which refer to common employability skills. These skills are; "learning skills, strategy, problem solving, decision making, dependency and responsibility, self-discipline, self-management and the ability to work without supervision." (Cotton, 2001.

Cited in Cassidy, 2006. p.509). Interestingly, when linking to a heutagogical perspective, Blaschke (2012) identifies that learners can become self-disciplined and self-directed by adopting responsibility and problem-solving traits, from working without supervision. It is clear here that giving students the ability to work autonomously gives them the opportunity to develop essential skills which are required by employers. It could be suggested that as an educator, you are having a negative effect on your students by over nourishing their learning journey (Andrewartha & Harvey, 2017).

8.2 Over Scaffolding and Removing Self-Determination

Contemporary research has identified that an over nourishment of students has a short-term benefit of success (Jorre de St Jorre & Oliver, 2018) with a long-term issue of dependency and an incapability of making decisions (Cassidy, 2006). By adopting a heutagogical approach to education and therefore accepting a temporary redundancy as the instructor towards a learning experience will provide students with unique, but employable attributes (Berger & Wild, 2017). As discussed previously, millennial students are ignorant to the long-term benefits of autonomous learning (Wood & Su, 2017) thus, it is important for the educator to understand the importance of producing scaffolded tasks for learners rather than over nourishing. Furthermore, from an employer's perspective, Chhinzer and Russo (2018) state, in order to create an employable student, educators must create a learning environment which enables the students to make decisions and solve problems individually or as a team. However, recent evidence has revealed that higher education students have become consumers and expect 'value for money' in terms of support with their studies (Bunce, Baird, & Jones, 2017). With this in mind, academics and educators must offer a level of support which additionally alleviates the student's ability to develop their ability to work without supervision. Empirical research has identified that heutagogy and therefore a self-directedness to learning has the ability to develop the student's essential employability skills (Blaschke, 2018), however there has been a dearth of research which establishes a best practice procedure in order to adopt this approach in practice. Moreover, Berger and Wild (2017) suggest there is a breadth of graduates who lack the essential criteria to become employable. Therefore, the importance of adopting a heutagogical approach to education is becoming more significant.

8.3 Heutagogy in Practice; The Transition

When linking heutagogy to practice, Figure 2 demonstrates seven essential steps which supports an educator attempting to scaffold their students learning. In the first phase, the educator must establish a 'bottleneck', described by Miller-Young and Boman (2017) as something the student briefly understands but cannot conduct perpetually. An example of this may be referencing. The educator's student has the ability to understand what referencing is but is unable to reference to a sophisticated standard. The second phase requires the educator to discover the mental task associated with this bottleneck. Explained

by Middendorf and Pace (2004b) as the hidden operations which an expert would conduct automatically, this requires the ability to question what you would do as the expert in order to understand the tacit knowledge from a learner's perspective. In relation to the current example, the educator must consider what step-by-step tasks are subconsciously completed in order to reference correctly. The educator and the student work together in the third stage by designing and modelling essential tasks to gain a greater understanding of the selected bottleneck. Pinnow (2016) describes the third stage as the educator's ability to show the student what they are required to do in order to complete the task. However, with heutagogy in mind, this third stage gives the student and the educator the ability to jointly design a model to develop the student's ability. When also considering Vygotsky's zone of proximal development (Vygotsky, 1980), there are some steps within the progressive stages where the students' needs some help from the educator in order to complete the task and progress autonomously (Eun, 2017). In this example, the educator would discuss the subjects referencing guide with the student to establish where the student is currently making consistent errors. It is important to allow the student to discover and then learn from their own mistakes (Price, 2014).

The fourth stage of Figure 2 relates to the educator's opportunity to set a task and provide feedback on the process (Middendorf, 2004). In relation to the current example, the educator at this point could create a formative task for the student which requires a minimum of three references, once submitted, feedback can be given on the identified bottleneck. When linking with heutagogy, the fifth stage becomes increasingly important. The level of motivation and support given to the student is the difference between autonomy and dependency (Nkuyubwatsi, 2016). As explained by Sundt (2010), the fifth stage of the model questions how you can motivate your learners, what is required to happen in order to address the affective side of learning? When linking with Vygotsky's zone of proximal development (Vygotsky, 1980), it is essential at this point that students begin to move towards what they can do for themselves, rather than seeking further support from their educator. At this stage, the educator will need to assess whether the student requires additional motivation, if this is the case, the educator can direct the student to the resources required without answering the questions addressed. The sixth stage of this model links with an assessment of the student's development and understanding throughout this decoding experience (Huber, 2006). At this stage the educator can link the progress to an assessment and check for the student's ability to reference in a written assignment. The final stage of Figure 2 relates to the distribution of expertise. The circulation of knowledge is an essential part of this model as it gives others the ability to learn from what has been decoded (Pace, 2017). From a heutagogical perspective, in this example the educator would initially discuss the outcomes of the assessment with the learner, and then explore the process with colleagues. Being heutagogical as an educator means a completion of the process by exposing new knowledge with other colleagues (Blaschke, 2012).

9.0 Conclusion:

Since its beginnings in the early 2000's, heutagogy has been identified as an extension from pedagogy and andragogy (Blaschke, 2012) however, until recently has received a limited amount of interest and attention from a higher education perspective. In practice a number of challenges of using a heutagogical approach have been identified such as, academic resistance to change (Blaschke, 2012), fear of redundancy, an increased financial pressure and a continued student focus on assessments (Hase & Kenyon, 2007). Common concern across the higher education sector is the wariness of placing full control of learning into the hands of the student. Whereas, from a student's perspective, there is a concern of disadvantage and a requirement of support (Scager, Akkerman, Pilot, & Wubbels, 2017) however, a shift is now required to alter the learner's attitude in an attempt to add a great emphasis on a scaffolding approach to learning which will develop the learner's autonomy skills. The present work explored the contemporary literature on the beneficial outcomes of developing a heutagogical approach in education. It is clear that employers are demanding more from University graduates and a shift is required by academics to enable their students to adopt the required skills and attributes to achieve employment post-graduation. Blaschke (2018) expresses that current practice within the education sector allows students to fall into a comfort zone where lecturers support the achievement of education. However, there is a breadth of research which evidences that students also require the ability to develop interpersonal and employable skills during their time on a degree (Berger & Wild, 2017). Therefore, educators are required to embrace heutagogy and allow their students to become autonomous thinkers, learners and graduates.

9.1 Future Research Recommendations

When considering emerging pedagogical theories in higher education, additional inquiry and research is required to establish links between heutagogy and other theoretical frameworks. Furthermore, there is a dearth of research which considers what practices and techniques are detrimental in the development of heutagogy in higher education which gives academics the support required to embrace such an approach. Therefore, future research is needed to explore the techniques used in current heutagogical practice in higher education across the United Kingdom.

10.0 Reference List:

Andrewartha, L., & Harvey, A. (2017). 'Employability and student equity in higher education: The role of university careers services'. *Australian Journal of Career Development.* 26(2). pp.71-80.

Berger, D., & Wild, C. (2017). Enhancing student performance and employability through the use of authentic assessment techniques in extra and co-curricular activities (ECCAs)'. *The Law Teacher.* 51(4). pp.428-439.

Bhoyrub, J., Hurley, J., Neilson, G. R., Ramsay, M., & Smith, M. (2010). 'Heutagogy: An alternative practice-based learning approach'. *Nurse education in practice.* 10(6). pp.322-326.

Blaschke, L. M. (2012). 'Heutagogy and lifelong learning: A review of heutagogical practice and self-determined learning'. *The International Review of Research in Open and Distributed Learning.* 13(1). pp.56-71.

Blaschke, L. M. (2016). 'Self-determined learning: Designing for heutagogic learning environments. Learning, Design, and Technology'. *An International Compendium of Theory, Research, Practice, and Policy*. 1(1). pp.25-40.

Blaschke, L. M. (2018). *Self-determined Learning (Heutagogy) and Digital Media Creating integrated Educational Environments for Developing Lifelong Learning Skills The Digital Turn in Higher Education* (pp. 129-140). United States: Springer.

Blaschke, L. M., & Hase, S. (2016*). Heutagogy: a holistic framework for creating twenty-first-century self-determined learners The future of ubiquitous learning* (pp. 25-40). United States: Springer.

Bunce, L., Baird, A., & Jones, S. E. (2017). 'The student-as-consumer approach in higher education and its effects on academic performance'. *Studies in Higher Education.* 42(11). pp.1958-1978.

Canning, N. (2010). 'Playing with heutagogy: Exploring strategies to empower mature learners in higher education'. *Journal of further and Higher Education.* 34(1). pp.59-71.

Cassidy, S. (2006). 'Developing employability skills: Peer assessment in higher education'. *Education+ Training.* 48(7). pp.508-517.

Chhinzer, N., & Russo, A. M. (2018). 'An exploration of employer perceptions of graduate student employability'. *Education+ Training.* 60(1). pp.104-120.

Currie, G. (2017). 'Conscious connections: Phenomenology and decoding the disciplines'. *New directions for teaching and learning.* 17(150). pp.37-48.

Dyson, B., Griffin, L. L., & Hastie, P. (2004). 'Sport education, tactical games, and cooperative learning: Theoretical and pedagogical considerations'. *Quest.* 56(2). pp.226-240.

Eun, B., (2017). 'The zone of proximal development as an overarching concept: A framework for synthesizing Vygotsky's theories'. *Educational Philosophy and Theory*/. pp.1-13.

Hase, S., & Kenyon, C. (2000). *From andragogy to heutagogy.* London: Ultibase, RMIT.

Hase, S., & Kenyon, C. (2001). 'Moving from andragogy to heutagogy: implications for VET'. *Graduate College of Management Papers*. 1(1). pp.142.

Hase, S., & Kenyon, C. (2007). 'Heutagogy: A child of complexity theory. Complicity'. *An international journal of complexity and education.* 4(1). pp.111-118.

Heick, T. (2018). *The difference between pedagogy, andragogy and heutagogy.* UK: Teach Thought.

Hennissen, P., Beckers, H. and Moerkerke, G., 2017. Linking practice to theory in teacher education: A growth in cognitive structures. *Teaching and Teacher Education, 63*, pp.314-325.

Huber, M. T. (2006). 'Disciplines, pedagogy, and inquiry-based learning about teaching'. *New directions for teaching and learning*. 6(107). pp.63-72.

Jorre de St Jorre, T., & Oliver, B. (2018). 'Want students to engage? Contextualise graduate learning outcomes and assess for employability'. *Higher Education Research & Development.* 37(1). pp.44-57.

Kale, P., & Singh, H. (2007). 'Building firm capabilities through learning: the role of the alliance learning process in alliance capability and firm-level alliance success'. *Strategic management journal.* 28(10). pp.981-1000.

Kamenetz, A. (2010). *DIY U: Edupunks, edupreneurs, and the coming transformation of higher education*. London: Chelsea Green Publishing.

Middendorf, J. (2004). 'Facilitating a faculty learning community using the decoding the disciplines model'. *New directions for teaching and learning*. 4(98). pp.95-107.

Middendorf, J., & Pace, D. (2004a). 'Decoding the disciplines: A model for helping students learn disciplinary ways of thinking'. *New directions for teaching and learning*. 4(98). pp.1-12.

Middendorf, J., & Pace, D. (2004b). 'Future of decoding the disciplines'. *New directions for teaching and learning*. 4(98). pp.109-110.

Miller-Young, J., & Boman, J. (2017). 'Uncovering ways of thinking, practicing, and being through decoding across disciplines'. *New directions for teaching and learning*. 17(150). pp.19-35.

Nkuyubwatsi, B. (2016). *Activating and nurturing the investment of heutagogical resources for equity and quality in self-determined, open, online and distance learning.* UK: The Centre for Learning Technologies and Innovation.

Pace, D. (2017). *The Decoding the Disciplines paradigm: Seven steps to increased student learning.* United States: Indiana University Press.

Peters, O. (2004). *Distance Education in Transition: new trends and challenges*. Oldenburg, Germany: Carl von Ossietzky Universität.

Pinnow, E. (2016). 'Decoding the Disciplines: An Approach to Scientific Thinking'. *Psychology Learning & Teaching.* 15(1). pp.94-101.

Price, D. (2014). Heutagogy and social communities of practice: Will self-determined learning rewrite the script for educators. *Experiences in self-determined learning*. pp.111-118.

Rachal, J. R. (2002). 'Andragogy's detectives: A critique of the present and a proposal for the future'. *Adult education quarterly.* 52(3). pp.210-227.

Richardson, G. M., Byrne, L. L., & Liang, L. L. (2018). 'Making learning visible: Developing preservice teachers' pedagogical content knowledge and teaching efficacy beliefs in environmental education'. *Applied Environmental Education & Communication.* 17(1). pp.41-56.

Scager, K., Akkerman, S. F., Pilot, A., & Wubbels, T. (2017). 'Teacher dilemmas in challenging students in higher education'. *Teaching in Higher Education.* 22(3). pp.318-335.

Sin, C., & Amaral, A. (2017). 'Academics' and employers' perceptions about responsibilities for employability and their initiatives towards its development'. *Higher Education.* 73(1). pp.97-111.

Sundt, J. (2010). 'Overcoming student resistance to learning research methods: An approach based on decoding disciplinary thinking'. *Journal of Criminal Justice Education.* 21(3). pp.266-284.

Toetenel, L., & Rienties, B. (2016). 'Analysing 157 learning designs using learning analytic approaches as a means to evaluate the impact of pedagogical decision making'. *British Journal of Educational Technology.* 47(5). pp.981-992.

Vygotsky, L.S., (1980). *Mind in society: The development of higher psychological processes*. United States: Harvard university press.

Wood, M., & Su, F. (2017). 'What makes an excellent lecturer? Academics' perspectives on the discourse of 'teaching excellence'in higher education'. *Teaching in Higher Education.* 22(4). pp.451-466.