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***Shoehorning old pedagogies into new technologies:
A literature review of technology-enhanced
learning and teaching in higher education and its
effects on learner autonomy***

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Abstract

Rapid technological development in recent decades has led to higher education institutions incorporating technology into their teaching and learning provision, with students expected to pursue their studies largely independently and to acquire the necessary skills for autonomous, life-long learning. This dissertation seeks to investigate how technology-enhanced learning and teaching (TELT) can be employed to foster learner autonomy in higher education and what specific learner-, instructor- and institution-focussed issues have been established in this respect. An extended literature review using a narrative summary approach formed the methodology, and heutagogy, the study of self-determined learning, served as a theoretical framework through which the findings were analysed. The research suggests that for effective implementation of TELT, with the aim to foster learner autonomy, a paradigm shift away from content- and teacher-focussed learning approaches towards a truly learner-centred, heutagogic approach needs to be adopted by higher education institutions and their teaching staff. Simultaneously, educators need to scaffold students' effective use of technologies for self-determined learning purposes. To achieve this, teaching staff need curricular freedom, time and training in heutagogic use of technologies. Furthermore, heutagogic principles need to be made inherent in TELT design, whilst TELT use must be thoroughly integrated into curricula and assessment if students' autonomy is to be fostered. Technology-use merely for technology's sake is unlikely to instigate a move towards innovative educational practices that embrace learner autonomy, but rather result in the same old pedagogies, merely with screens. It is therefore vital for the higher education sector to recognise the need for innovative educational practices with regards to TELT, with further research required to develop the specific frameworks to achieve this consistently and equitably throughout the higher education sector.

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Chapter 1 Background and research rationale

Our globalised and technology-driven world, affected by ever-increasing levels of complexity, has changed the historic scope of higher education (HE). Information is now easily retrievable by virtually anyone at the click of a button, rendering the traditional concept of learning by which experts impart factual or procedural knowledge on novice students an outmoded approach (Gash, 2015). Demands on HE graduates entering the workforce have changed significantly (Hase and Kenyon, 2013a) and professions of the future are predicted to require ever-higher skill levels (Universities UK, 2017). Graduates are expected to be able to apply their knowledge independently and creatively in order to solve pressing and complex problems, as well as continually updating their skillset in order to cope with the multifaceted demands of a globalised society and the future job-market. This requires learners to know how to learn, and how to organise their own learning process (Blaschke and Hase, 2016). This ability to be an autonomous learner throughout one's lifetime has also been promoted by the European Commission (2013) and the United Nations Educational, Scientific and Cultural Organization (UNESCO) (2015). With HE as one of the sectors at the forefront of adult education, it needs to address such challenges. Higher education institutions (HEIs) need to support learners in developing the ability to learn autonomously, by embedding appropriate practices in their educational approaches, in order to equip students for a future of continuous learning.

Rapid technological development in recent decades has not just initiated a process of dissecting and reformulating a 'future-proof' graduate skillset and the subsequent HE curricula but has also had a direct impact on teaching and learning practices in the HE sector. Educational policymakers have pushed towards the digitisation of HE, i.e. the use of technology for learning, teaching and assessment, with HEIs offering courses taught entirely online or in blended-learning formats with online and face-to-face components combined, in addition to using technology to facilitate traditional on-campus learning in an attempt to improve the flexibility and accessibility of HE to a broader student population (Universities UK, 2012; Department for Digital, Culture, Media & Sport, 2017). However, this push for the digitisation of HE has also been interpreted as being driven by a managerialist agenda seeking the reduction of cost-intensive face-to-face teaching arrangements (Clegg et al. 2003). The associated propagation of learner autonomy as

necessary in order to cope with this resource-diminished educational experience has been argued to risk catering only to prototypical students and subsequently propagating an inequitable HE system (Leathwood, 2006).

Despite the motivating factors behind the rapid adoption of digital educational solutions in HE, the question of its effective implementation remains. That is, whether HEIs have been able to realise the full potential of technology-enhanced learning and teaching (TELT) to foster learner autonomy, and through this offer ‘educational experiences that fit with the students’ potential future life experiences’ (Gash, 2015, p.7), or whether the implementation of TELT has been a continuation of traditional educational approaches, but with screens.

With the aim to further investigate the issue of effective use of TELT, an extended literature review of contemporary research into the effects of TELT in HE on learner autonomy was conducted, with the objective to:

1. determine a theoretical framework, based on contemporary research into technology-use in education and the learner’s role in the learning process, through which to examine the findings from the literature review.
2. complete an extended review of the existing research pertaining to the connection between learner autonomy and TELT in the HE context.
3. critically analyse, collate and synthesise findings from the literature review.
4. make recommendations with regards to what HEIs and teaching staff should consider in terms of the effective implementation of TELT in order to foster learner autonomy.

This dissertation is comprised of five chapters. Chapter 2 first reviews several theoretical concepts in relation to learning and teaching and the learner’s role in the knowledge acquisition process, before presenting the theoretical framework that serves as a basis for this research project. The notion of learner autonomy is then discussed critically in the context of HE, before an overview of the terminology in relation to technology-use in HE is given. Chapter 3 presents the design of the research project, elaborating on research questions, methodology and limitations of the study. In chapter 4, the findings of the literature review are synthesised in a narrative fashion, before a summary of the findings answering the research questions is given and recommendations for HEIs and their teaching staff are made in chapter 5.

Chapter 2 The path to learner autonomy – A review of theoretical concepts

For both areas of interest for this research project, i.e. educational technology-use in higher education (HE) and the learner's role in their own learning process, there are many conceptual terms that overlap or are used interchangeably. This chapter will provide a delineation of concepts related to learner autonomy and educational technology-use in HE, adding the groundwork for the establishment of a framework through which to analyse the findings of the narrative literature review.

2.1 Traditional and progressive approaches to knowledge, learning and teaching

Traditionally, education has often tended towards objectivist ideas of knowledge and behaviourist or cognitivist approaches to its acquisition (Jonassen, 1991). With an objectivist worldview, a single, objective reality is assumed. In educational contexts, a teacher attempts to transmit this 'true' body of knowledge to students. The teacher, based on their interpretation of reality, decides which aspects of this knowledge are to be taught in which order, i.e. the curriculum, and subsequently the assessment of students' learning, represented by their successful memorisation of the taught curriculum (Jonassen, 1991; Gash, 2015). The behaviourist approach 'sees learning as the result of conditioned responses, reinforced by extrinsic rewards or imposed sanctions', with a strong focus on '[t]eacher approval and praise' (Sharp, 2012, p.1470), whilst cognitivist approaches to knowledge acquisition believe human information processing to be similar to that of computers. Both behaviourist and cognitivist learning theories assume that mental constructs, or schemas, can be transferred from one person to the other, and that learning has occurred when the novice student has the same schemas as the expert teacher (Sharp, 2012, p.1470). This educational approach has been dubbed 'banking education' (Freire, 1994), because knowledge is considered to be deposited into the student as money is in a bank or depicted as 'that of a teacher pouring knowledge into the empty vessel of the learner' (Schweisfurth, 2013, p.10). It is also referred to as a 'teacher-centred', 'teacher dominated', 'frontal', or 'didactic' approach to education, because of the strong focus on the actions of the teacher (Schweisfurth, 2013, p.10).

While the traditional objectivist worldview posits that the learning process must be undertaken in a systematic way, i.e. that there is a fixed body of knowledge that must be transmitted from the teacher to the student and that it will be received by the student in the intended way, educators in the constructivist tradition assume that learning and knowledge construction does not happen in such a linear fashion. Based on advances in psychology and philosophy starting in the 1960s, educational theory has seen a paradigm shift from objectivism towards constructivist, humanistic approaches. A constructivist approach of the nature of knowledge and its generation suggests that meaning comes from the interpretation of lived experiences, schemas, and beliefs. Learning therefore does not equal the transmission, absorption and retention of information but is rather knowledge constructed by each individual through active interpretation and organisation of information in the context of their lived experience (Patton, 2002). There are many approaches within constructivist theories of learning, differing in emphasis with regards to the exact mechanisms of knowledge construction, e.g. cognitive or social constructivism, but all assume that knowledge is individually or socially constructed, and not – as objectivists and behaviourists maintain – transmitted from one person to another (Gogus, 2012). Therefore, instructional concepts in line with constructivist learning theory ‘should consist of experiences that facilitate knowledge construction’ (Jonassen, 1999, p.217).

Humanistic approaches to education assume that individuals have the ability and freedom to act and shape their own destiny, are inherently good, and are capable of unlimited personal development and growth. That is, humans have an intrinsic motivation to learn, develop, and become all that they can be (Madsen and Wilson, 2012), and their motivation for learning is based on one’s urge for self-actualisation (Maslow, 1987). This in turn means that humanistic approaches to learning assume an individual’s responsibility for their own learning, as well as the learning of their fellow human beings (Madsen and Wilson, 2012).

In line with constructivist assumptions about the knowledge acquisition process, psychologists in the humanistic tradition, e.g. Rogers (1969) and Maslow (1987), posit that ‘learning has to centre on the personal learning experiences and needs of the learner’ (Sharp, 2012, p.1470), and have coined the terms student-, learner- or person-centred learning and teaching, or education. In a student-centred educational context, the aim is to ‘consider the needs of the students, as a group and as individuals, and encourage them to

participate in the learning’ while ‘the teacher’s role is more that of a facilitator [...] than instructor; the students are active participants in the learning process’ (Jones, 2007, p.2).

Related to student-centred educational approaches is Deci and Ryan’s (1985) self-determination theory, which posits that in an educational context, in order to be intrinsically motivated to learn, three basic psychological needs must be met: *autonomy*, *competence*, and *relatedness*. That is, a learner is more likely to feel a sense of self-determination if they experience agency or perceive that options are given in a learning situation (*autonomy*). Learners also need to feel confident in their ability to carry out tasks (*competence*) and experience a connection with others (*relatedness*) in their learning activities (Hsu et al., 2019).

With regards to mustering and maintaining the intrinsic motivation to learn in a student-centred educational context, Bandura’s (1982) concept of self-efficacy describes an important mechanism. Self-efficacy is defined as an individual’s belief in their ability to succeed at a given learning task. A learner’s notion of self-efficacy, sparked by initial mastery experiences, can have a positive effect on their sustained engagement with the behaviour necessary to be successful in that learning endeavour.

Self-efficacy and self-determination theory are both aspects that find expression in the humanistic tradition of education, which focusses on enabling learners to determine their own learning process and has been seen as ‘an expression of human personal agency’ (Bouchard, 2012, p.2997). Rogers (1969), for example, claims that an educated person is one ‘who has learnt how to learn’ (p.104) and Knowles (1975) promotes self-directed learning with his concept of andragogy which defines self-directed learning as the process in which individuals initiate their own learning journey, identify their individual learning needs and goals as well as available resources for learning, select and apply learning strategies, and subsequently evaluate their learning outcomes.

That is, in self-directed learning, learners decide on their own learning goals and processes. This is similar to the concept of self-regulated learning, where learners might have been prescribed a learning goal but have the freedom to define their own learning processes (Saks and Leijen, 2014). Saks and Leijen (2014) raise the issue that self-directed and self-regulated learning have often been used interchangeably in educational literature, although

they relate to slightly different concepts. Zimmerman (2002) defines key self-regulatory processes with regards to learning as:

(a) setting specific proximal *goals* for oneself, (b) adopting powerful *strategies* for attaining these goals, (c) *monitoring* one's performance selectively for signs of progress, (d) *restructuring* one's physical and social context to make it compatible with one's goals, (e) managing one's *time use* efficiently, (f) *self-evaluating* one's methods, (g) *attributing* causation to results, and (h) *adapting* future methods (p.66, emphasis in the original)

This notion of learners exerting autonomy over their learning goals and processes is used throughout self-directed and self-regulated learning literature, however, the term 'learner autonomy' appears to be used primarily in literature relating to foreign language learning (Ribbe and Bezanilla, 2013). Holec (1981) defines learner autonomy as a state reached if the learner is 'capable of taking charge of his [sic] own learning' (p.3), including activities such as determining the learning objectives, defining content and progression, selecting methods and technique and monitoring and evaluating the learning. Little (2004) interpreted Holec's conception of learner autonomy as a more radical form of self-directed learning. For the remainder of the paper the term 'learner autonomy' will be used in reference to the concepts of self-directedness, self-determination and self-regulation, as I perceive it to be the broadest, most encompassing term in the context of learning.

This chapter illustrated a range of closely related ideas and educational concepts to do with the role of the learner in the knowledge construction and skills development process. These concepts will be synthesised into a workable research framework in the following chapter, before looking at critiques that have been made with regards to the societal value that is ascribed to learner autonomy, in order to establish the rationale for the desirability of this educational approach in chapter 2.4.

2.2 Heutagogy – A framework for self-determined learning

Chapter 2.1 describes theories about and deliberations on what knowledge is, how it is constructed, and how individuals can be best and most efficiently supported to construct new knowledge. This forms the basis for a recent framework incorporating constructivist, humanistic and learner-centred approaches to education – 'heutagogy' (Hase, 2009). Hase and Kenyon (2000) derive the name from the ancient Greek word for 'self', which indicates the framework's concern with the concepts of learner agency and autonomy, self-efficacy, self-directedness and self-determination (Hase and Kenyon, 2000). Heutagogy sees

‘the learner as the major agent in their own learning, which occurs as a result of personal experiences’ (Hase and Kenyon, 2007, p.112). In short, heutagogy has been conceived as ‘the study of self-determined learning’ (Hase and Kenyon, 2013b, p.21).

While heutagogy is rooted in the concept of andragogy, or ‘the art and science of helping adults learn’ (Knowles, 1970, p.38), in which curricular and assessment-related decisions are made by the educator based on the learners’ needs, heutagogy takes the learner-centred approach of andragogy even further (Hase and Kenyon, 2007). In heutagogy, it is assumed that ‘the power to learn is firmly in the hands of the learner and not the teacher’ (Hase and Kenyon, 2013b, p.20). That is, ‘learning occurs when the learner is ready rather than when the teacher expects or intends for it to occur’ (Hase, 2009, p.44). This entails letting learners take control over their own learning process, from decisions on curriculum, learning strategies and resources, to assessment (Hase, 2009). With heutagogy’s focus on the individual learner determining their own learning process, ‘the role of the instructor becomes that of a guide and a mentor in the learning process’, or a ‘learning leader’ (Blaschke, 2018, p.130), whose task it is to assist the learner in determining ‘how the desired learning might take place’ (Hase and Kenyon, 2013a, p.7) and to ‘empower, not control students’ (Blaschke, 2018, p.132). Consequently, in terms of assessment, Hase (2016) stresses that ‘[t]here is no such thing as a standard learning outcome’ (para. 6) and that decisions about learning outcomes and assessment are negotiated between learners and the learning leader.

Heutagogy was initially conceived due to

an increasing frustration with rather conservative approaches to education prevalent in the higher education sector, and the recognition of the need to acknowledge learning as being an extremely dynamic experience occurring in a world that was (and is) highly complex, non-linear and ever-changing (Hase, 2009, p.43).

This quote conveys several of the approach’s underlying concepts and key characteristics, in addition to the constructivist and humanistic notions of learning and teaching it is based on (Hase, 2009; Hase and Kenyon, 2013b). As a basic assumption about the world, Heutagogy employs complexity theory, positing that the modern world cannot be explained by simple cause-and-effect relationships, but is rather a ‘turbulent, complex and unpredictable’ system (Hase, 2009, p.45) consisting of many interdependent and interacting parts (Szekely and Mason, 2018). The implications for learning conceptualised

by Hase and Kenyon (2007) result from ‘stress on the system’ and the realisation that ‘people only change in response to a very clear need’, usually involving ‘distress such as confusion, dissonance, and fear or a more positive motive such as intense desire’ (Hase and Kenyon, 2007, p.112). Learning processes are viewed as highly individualised and context dependent, with learning outcomes regarded as unpredictable, and therefore, not to be caused or forced by an instructor, but only facilitated (Hase, 2009).

In heutagogic approaches to education, learning leaders assist learners in the acquisition and development of not only competence, a concept considered to be based in andragogy (Blaschke, 2012), but also capability. Competencies are defined as knowledge and skills, whereas capability describes the learner’s ability to apply these competencies in new contexts. As Blaschke (2018) puts it: ‘Competency can be considered a steppingstone in one’s learning, capability – or the ability to demonstrate competency in new environments – is the intended goal’ (p.130). Related to this notion of developing learners’ general capability instead of focussing solely on knowledge and competencies, is heutagogy’s emphasis on fostering peoples’ ‘desire and the skills to be better and more active learners’ (Hase and Kenyon, 2013a, p.10) – in other words, fostering learners’ learning capability and meta-cognition skills (Blaschke, 2018), i.e. helping them ‘learn how to learn’ (Hase and Kenyon, 2013a, p.10).

In order to achieve that, Blaschke (2018) defines some fundamental design elements of a heutagogy-based education, which they summarise as ‘exploration, creation, collaboration, connecting, reflection, and sharing’ (p.133). Blaschke (2012) gives examples to illustrate practical implications of heutagogic education, for example

- setting up learner-defined learning contracts, helping learners to determine and put down in writing their learning goals and plans;
- a flexible curriculum that is defined by the learner and evolves with them as their learning needs progress;
- negotiated, flexible and learner-defined assessment tasks;
- collaborative and reflective learning;
- guiding learners to formulate questions in relation to the course content that inspire discussion and self-reflection, and techniques and tools to support reflective practice, such as the learners keeping a reflective learning journal or portfolio, facilitating

action-based learning, and opportunities for feedback through formative and summative assessment that encourages reflective practice.

Due to its comprehensiveness with regards to incorporating aspects of humanistic and constructivist principles in one framework, and its strong focus on learner autonomy, heutagogy will serve as the framework used to analyse the findings from the literature review of this research project. Before discussing the relevance of heutagogic principles for HE and their connection to TELT, critiques that have been raised with regards to the societal value ascribed to learner autonomy are considered.

2.3 Critiquing the notion of learner autonomy and independence

Educational policy was quick to adopt the praise of and call for the fostering of learner autonomy and independent learning stemming from the academic fields of education and psychology. It has been argued that this enthusiasm, especially in HE, stems from contemporary challenges in HE regarding limited funding and resources in an increasingly commodified sector (Leathwood, 2006). Distance learning, as well as self-study phases in face-to-face settings form opportunities to reduce staffing costs for higher education institutions (HEIs) but require students to have the ability to independently organise their learning activities. Leathwood (2006) argues that the concepts of dependence and independence are not neutral, but embedded in notions of gender, class and race, and are also predominantly based on Western philosophies. Traits such as independence, ambition and discipline are valued in HE settings, and have typically been ascribed to white, middle-class males, i.e. those individuals for whom the HE sector has traditionally been reserved.

Today, in a massified HE system that is striving to widen its access and be open for individuals throughout the social strata, this traditional notion of a HE student no longer applies (Tight, 2019). Students who do not conform to this prototype, because they are from a culture or community where, for example, authority and hierarchies or the individuals' place within a community are more significant than individual autonomy, are more likely to struggle in a system that idealises personal independence, and neglects students who require assistance and encouragement in order to thrive in a HE setting (Leathwood, 2006).

In addition, the emphasis on independence and its individual and societal value, is often rooted in a narrative about a vital requirement for independent, life-long learners due the swift pace of technological development and its impact on production, the economy and

the labour market. This narrative is putting the onus of perpetual upskilling to ensure employment and through this personal independence on the individual, reflecting a neoliberal worldview that promotes little societal and governmental responsibility towards the individual (Clegg et al., 2010). The potential consequences of such approaches need to be recognised.

However, an educational strategy that strives to empower learners to determine their own learning process is also one that considers the realities of the modern world, such as the rapid development and impact of digital technologies on HE. The rise of powerful technologies with which factual knowledge can be retrieved by anyone in only seconds creates a demand for truly human skills, e.g. creativity, problem-solving, critical thinking, meta-cognition and collaboration. These skills are arguably best acquired in constructivist-humanist educational frameworks, such as heutagogy, which focus on fostering capabilities, and not dependence on an instructor who imparts knowledge.

Furthermore, if education is viewed from a constructivist-humanist stance as discussed in chapter 2.1, then the notions of learner autonomy and self-determination follow logically, as knowledge is regarded as constructed within the individual, and cannot simply be transferred from teacher to student. In addition, Heutagogy's strong focus on meta-cognition and self-reflection provides opportunities for emancipatory processes to occur (Blaschke, 2018). By acquiring the capability to take ownership of their individual learning goals, processes and resources, learners become independent of teachers and educational institutions, thus laying the foundations for effective life-long learning.

With heutagogy having its roots in Knowles' (1975) concept of andragogy, in which 'individuals take the initiative, with or without the help of others, in [...] formulating learning goals [and] identifying human and material resources for learning' (p.18), it becomes clear that fostering learner autonomy does not imply learners being left to their own devices, but it rather advocates learners' taking responsibility of their own and others' learning, and fostering in learners the capability to determine the degree to which their learning process will involve the help of and the collaboration with others. This is for example expressed by collaborative and cooperative learning activities (see chapter 2.2), such as creating supportive Communities of Practice (COP), which will be elaborated on in chapter 4.4. As Morgan (2012) points out, 'it is one of the great misconceptions of learner

autonomy that it is about learning alone’ (p.169), while Hsu et al. (2019) stress that ‘[l]earner autonomy does not mean independence or having to learn without guidance’ (p.2161). In addition, as illustrated by the discussion about the Pedagogy – Andragogy – Heutagogy (PAH) continuum, as expanded upon in chapter 2.4 and 2.5, heutagogy implies fostering learners’ development towards autonomy, and not that learners can be expected by HEIs to already possess this ability.

It is important to consider the potential for learner autonomy to be misinterpreted to suit an agenda that strives to maximise profits and transfers educational responsibilities to the individual under the guise of empowering students, especially in commoditised and massified HE systems. Since heutagogy and its related concepts have the potential to impact on the quality, as well as equity, of HE if implemented poorly, it is vital to investigate how this concept is applied in HE research and to establish factors that contribute to its successful implementation in combination with TELT. This research project strives to do just this. The next chapter will discuss how heutagogy is specifically relevant for HE, before looking at challenges that might arise from its implementation, and its role in combination with TELT.

2.4 Relevance of promoting heutagogic principles in HE contexts

When looking at the development of learner autonomy, as briefly touched upon in chapter 2.3, the educational concepts of pedagogy, andragogy and heutagogy have been interpreted as occurring on a continuum, with learners moving through stages, depending on the level of sophistication. While younger learners are perceived as benefitting most from learning within a pedagogic framework with more guidance, learners tend towards learning best under andragogic principles as they mature, until they can eventually take full advantage of learning under heutagogic principles (Blaschke, 2018). The main features of these three modes of education are summarised in the following table:

	Pedagogy	Andragogy	Heutagogy
<i>Locus of control</i>	teacher	learner	learner
<i>Education sector</i>	schools	adult education	doctoral research
<i>Cognition level</i>	cognitive	meta-cognitive	epistemic
<i>Knowledge production context</i>	subject understanding	process negotiation	context shaping

Table 1: The PAH continuum (Luckin et al., 2010, p.78)

Conversely, it has been argued that self-determined learning is innate, however, it is unlearned due to years of teacher-centred schooling (Hase and Kenyon, 2013b). Therefore, HE would be the ideal context to re-engage learners in their arguably innate mode of learning. Both interpretations of the place that heutagogy takes in the hierarchy of educational principles provide sound arguments as to why heutagogy lends itself particularly well as a framework for use in HE settings.

The implementation of heutagogic principles would be of relevance to, and have many desirable effects on, HE contexts, especially with regards to an ever-increasing level of complexity in a globalised, and technology-driven world. As Gash (2015) points out:

In this twenty-first century it is evident that knowledge is available in so many ways, including the web, that the idea that learning is dependent on one expert imparting information in traditional ways is outdated. [...] In a changing world where the ability to cope with change is what is important and where what is important are the processes of investigation and ways of finding solutions, then alternative ways of finding solutions become more important than knowing what worked in the past (p.10–11).

In Hase and Kenyon's (2013a) view, heutagogy offers a framework to address these new challenges in education as raised by Gash (2015). They see society benefitting from 'having people who are more knowledgeable, more skilled and more capable of learning' (Hase and Kenyon, 2013a, p.15).

Heutagogy as a framework for education focusses on developing learners' ability to become self-determined, capable, life-long learners, as opposed to merely transmitting knowledge and skills that might become quickly outdated in a fast-paced environment. According to Hase and Kenyon (2000), heutagogy 'looks to the future in which knowing how to learn will be a fundamental skill given the pace of innovation and the changing structure of communities and workplaces' (para. 7). Heutagogy can therefore be considered a particularly sustainable approach to education, one that acknowledges rapid developments and an ever-changing environment, as well as an individual's need to adapt to this level of continuous change. As humans will spend most of their adult lives learning without teachers, HE can be identified as playing a vital part in developing and supporting lifelong learning capabilities.

2.5 Challenges of implementing heutagogic principles in HE contexts

Although heutagogy was conceived as a counter-model to what was perceived as an insufficient educational approach in HE, its uptake as a framework for learning and teaching in HE has been limited (Blaschke, 2012). This chapter will summarise the challenges that researchers have anticipated or experienced with regards to the implementation of heutagogic principles in HE.

A major challenge for the implementation of educational frameworks that foster learner autonomy, like heutagogy, lies in the assumptions about learning and teaching processes of HEIs and their teaching staff. They might perceive an approach to education that promotes a learner's emancipation from the institution and its teaching staff as a threat to their very existence. After all, if the learner is in control of every step of their learning process, then the role of the instructor can be perceived as severely diminished (Hase and Kenyon, 2013a). Blaschke (2018), however, argues that the opposite is the case, as

a learning leader needs to be constantly finding out where learners 'are at' by asking the right kind of questions. Not just questions that test knowledge but questions that find out what the learner is thinking, new understandings, new problems, and what is exciting them (p.133).

Considering this, the vital role educators play in learners' achievements in heutagogic settings becomes clearer. It is not the role of a mere knowledge transmitter, but that of a learning leader that guides, coaches and consults the learner in their self-determined learning journey.

The implementation of heutagogic principles in HE is also hindered by its approach to assessment. From a heutagogical perspective, there are no standardised learning outcomes, as each learner defines their own learning outcomes or they are negotiated between learner and facilitator (Hase, 2016). Facilitating this may involve a higher workload for instructors, since individual, negotiated learning outcomes and valid ways of assessing learning will likely require more and lengthier conversations with students. Time constraints are therefore a considerable hindrance to the implementation of heutagogic principles at an institutional level (Hase and Kenyon, 2013a). The heutagogic approach to assessment also makes standardisation and comparability of performance more difficult, which has an impact on the ability to rank HEIs based on their students' performance, which is vital in a

HE system that is dependent on relative-performance credentials (Blaschke, 2012; Hase and Kenyon, 2013a).

Hase and Kenyon (2013a) also raise the issue that heutagogic learning might not be universally applicable, for example when acquiring skills that involve risks, or are dangerous to the learners themselves or others if not mastered, e.g. medical procedures or handling hazardous materials. However, as heutagogy can be regarded as an extension of pedagogy and andragogy, located on the Pedagogy – Andragogy – Heutagogy continuum, employing heutagogic principles need not be seen as mandatory at every stage of the learning process, but as the target mode of learning as learners mature and become more proficient in their area of expertise (Hase and Kenyon, 2013a), or as a circular process with learners moving through stages of increased support and increased self-determinacy (Blaschke, 2019). Similarly, Morgan (2012) argues that ‘it is much more useful not to think of autonomy *per se*, but rather the process of autonomisation’ (p.169, emphasis in the original) that the educator guides learners towards.

However, even if teaching staff and institutions support the implementation of heutagogic principles, there might still be challenges with regards to the learners themselves. Considering that in HE most learners will have experienced years of schooling and will therefore have developed a clear picture of what learning and teaching should entail, it might be difficult to warm learners to heutagogy, especially given the individual effort that is required (Hase and Kenyon, 2013a). Learners might refuse to accept learning under heutagogic principles, as they might be unfamiliar with this approach and possibly overwhelmed by the required level of freedom in and responsibility for their own learning (Brandt, 2013; Blaschke, 2018).

Irrespective of the challenges to the implementation of heutagogic principles in HE contexts, the concepts of learner autonomy and independence are becoming increasingly pertinent in the face of an increase in TELT in HE, as discussed in chapter 2.4. The following chapters will first discuss current developments with regards to TELT, before arguing for the need for more innovative pedagogy due to the popularity of TELT in HE.

2.6 The role of technology-use for teaching and learning in HE

According to Blaschke (2018), ‘[c]ombined with today’s technologies, the theory [heutagogy] provides a framework for designing and developing learner-centered

environments that have the potential to equip learners with the necessary skills for a lifetime of learning' (p.129). The interplay between learner-centred, self-determined educational approaches and the use of technology is the focus of this research project. The following chapter will provide an overview of the development of technology-use in HE, examine typical technologies that are used, and address the terminological discrepancies in this fast-paced field.

Traditionally, HE has taken the form of predominantly face-to-face, on-campus teaching and learning. Since the 1970s, options for distance education have developed, where students and instructors do not meet face-to-face, but teaching and learning is facilitated by media. Initially, this was print and then later audio-visual materials, sent out via postal services (Moore et al., 2011). The fast-paced developments in information and communication technology (ICT) in recent decades have brought about concepts such as digital learning, online learning, e-learning and m-learning (i.e. e-learning via mobile devices such as laptops or mobile phones). These are all terms used to describe distance education formats applying various forms ICT, enabling new modes of delivery, interaction and participant collaboration (Holmberg, 2008).

But also in traditional face-to-face HE, the use of digital technology to support learning and teaching was adopted at a fast pace, with the UK Digital Strategy 2017 explicitly stating that one of the aims of the Department for Digital, Culture, Media & Sport (2017) is to increase digital skill provision in HE. HEIs have also been incentivised to find alternative delivery modes for their courses in order to provide students with non-academic commitments and responsibilities (e.g. care, earning) with more convenient access to effective, high-quality learning contexts other than the traditional, full-time, on-campus model. From this demand, blended-learning offerings have sprung, involving the integration of traditional face-to-face and online approaches to HE (De George-Walter and Keeffe, 2010; Universities UK, 2018). For this, HEIs normally rely on Learning Management Systems (LMS) or Virtual Learning Environments (VLE), which provide an online space to store learning materials, communicate content and administrative information, as well as tools for collaboration.

However, alongside this positive interpretation of higher education's shift towards TELT as a means of fulfilling students' requests to allow for more flexible modes of study

(Gordon, 2014; Universities UK, 2017), this push for digitisation of the HE sector has been interpreted by some researchers as driven by the need to reduce teaching overheads (Clegg et al., 2003). It has been associated with HEIs' call for learner independence so that students can cope with a resource-diminished educational experience. It has also been linked to the risk of creating a sector that caters only to prototypical students, thus propagating an inequitable HE system (Leathwood, 2006).

2.6.1 Terminology around technology-use in HE

An issue with such swift-paced technological development is that terminology also develops and changes at a fast pace. This has led to inconsistent use of terms for TELT in the literature and in practice, making it difficult for researchers to keep track of the latest research in the field of educational technology design (Moore et al., 2011). The Encyclopedia of the Sciences of Learning (Seel, 2012) for example lists the terms 'digital learning', 'e-learning', 'web-based learning', and 'technology-enhanced learning' as synonyms, with Wheeler (2012, p.1109) claiming that 'digital learning' is the most current term being used for 'a set of technology-mediated methods that can be applied to support student learning and can include elements of assessment, tutoring and instruction'.

This research project seeks to establish how current technologies can be used in the HE context to foster aspects of heutagogy, as described in chapter 2.2. This study therefore takes into consideration any digital technology used for learning and teaching purposes in HE contexts, and may include institutionally sanctioned and funded technologies, as well as disruptive technologies, i.e. the unsanctioned use of technology for learning and teaching purposes by students and staff due to better functionality, availability or lower costs than the institutionally sanctioned varieties (Flavin, 2016). To reflect the broad scope of the research with regards to the types of technologies considered, the term 'technology-enhanced learning and teaching' (TELT) is employed throughout this research project, unless a specific type of technology is addressed. This is in line with Flavin's (2016) use of the phrase, differentiating between information and communication technology (ICT) to refer to the equipment itself, and technology-enhanced learning and teaching (TELT) which 'refers to pedagogical practice, using ICTs to support learning and teaching' (Flavin, p.633).

2.7 The relevance of innovative pedagogy for TELT in HE

The use of technology for educational purposes within HE, as well as the need for people to be able to employ digital technologies effectively in their professional and private lives, is likely to continue to play a significant role in the future. But despite a push towards the digitisation of learning and teaching by governments and HEIs, teaching staff are often still catching-up with regards to pedagogical frameworks for the effective use of technology to support learning and teaching. This notion is supported by Bonk's (2009) statement that '[t]echnology by itself will not empower learners. Innovative pedagogy is required' (p.33). Flavin (2016) takes this criticism one step further and argues that the ubiquitous use of VLEs or LMSs like *Moodle* and *Blackboard* in HE has been counterproductive, by saying that '[f]ar from changing pedagogical practices, VLEs have reaffirmed traditional, transmissive modes of teaching' (Flavin, 2016, p.638). This suggests that there is an urgent need for HEIs and their teaching staff to become up-to-date and informed about best-practice approaches to TELT.

On the other hand, there appears to be an awareness of educational technology's potential to reform pedagogical practice in HE. In their 2014 publication on technology-enhanced learning, the former *Higher Education Academy* (now *Advance HE*) cites the opportunity to support flexible pedagogies with regards to the 'where, when and how' of learning, as well as learner-centred pedagogies as one of the main benefits of technology-enhanced learning (Gordon, 2014).

At present, some research has been done on the interplay between TELT and learner autonomy, but in the fast-paced field of educational technology, ongoing monitoring is vital to stay up to date with the latest developments (Bray and Tangney, 2017). That is, HEIs need to understand the latest research in order to provide students with the most effective TELT possible, and to assist them in becoming autonomous learners capable of dealing with the increasingly complex and volatile world of tomorrow. This research project draws upon the latest research findings through a review of recent literature in this space, in order to understand what aspects of TELT in HE to-date have contributed most to the effective development of learner autonomy and the implementation of other heutagogic aspects.

Chapter 3 Research design

This research project aims to bring together the educational framework of heutagogy and its related aspect of learner autonomy, and technology-enhanced learning and teaching (TELT). It investigates how heutagogic teaching approaches are reflected in the practice of TELT in higher education (HE), and what issues HE practitioners, institutions and students working with TELT encounter that might foster, complicate or inhibit the development of learner autonomy.

3.1 Research questions

This research project will address the following research questions (RQs):

RQ1: How does the implementation of TELT in HE affect learner autonomy?

RQ2: What learner-focussed issues exist with regards to fostering learner autonomy using TELT in a HE context?

RQ3: What instructor-focussed issues exist with regards to fostering learner autonomy using TELT in a HE context?

RQ4: How can HEIs and their teaching staff foster learner autonomy by means of TELT?

3.2 Methodology and research paradigm

This research project aims to explore aspects of learning and teaching, specifically means of fostering learner autonomy in HE contexts with the help of TELT. The research is rooted in the social sciences, due to its focus on studying humans' attitudes, motivation and behaviour and the ways in which these can be influenced, and thus takes a constructivist ontological stance. That is, the researcher assumes a conception of reality that argues that all concepts and phenomena are socially constructed based on individuals' experiences and beliefs (Bryman, 2001). In order to inform the methodology to be applied to this research, I have combined this constructivist ontological stance with an interpretivist epistemology, i.e. a conceptualisation of knowledge-gathering that argues that these social constructs can only meaningfully be accessed and studied through the interpretative lens of the culture and lived experience of the researcher (Hammersley, 2013). These general considerations about the nature of knowledge and its generation informed my decision to apply qualitative methods to this research project, as described in the following chapter.

3.3 Research method

The method employed for this research project was derived from the RQs as well as my constructivist and interpretivist worldview described in chapter 3.2. I therefore employed a qualitative approach in the form of a narrative literature review, which ‘involves the selection, chronicling, and ordering of evidence to produce an account of the evidence’ (Dixon-Woods et al., 2005, p.47), allowing for a detailed review of existing research and distillation of the analysis into ‘reflective commentary and higher levels of abstraction’ (Dixon-Woods et al., 2005, p.47). For this research project, the research questions and the theoretical framework were used as guidance with regards to the selection of evidence and the themes discussed in the review. According to Dixon-Woods et al. (2005), a literature review employing such a narrative synthesis method is interpretive in nature. This implies that for this method,

the emphasis is on the interpretative role of the reviewer in making sense of the finding of different studies to construct a holistic picture of the field, a picture that may well reflect the particular interests and sensibilities of the reviewer (Hammersley, 2004, p.578).

The choice of method was therefore in line with my constructivist-interpretivist paradigm outlined in section 3.2.

In reflecting upon the suitability of the methods selected, the research was also guided by the rapid pace of (educational) technology development and the relatively recent development of the theoretical framework of learning – heutagogy – used for this research project. That is, the aim of the research was to understand the status quo of educational research into TELT and its use to employ aspects of heutagogy in HE contexts, rather than acquiring in-depth insight into a specific institution or context. The use of a narrative literature review provided research findings to inform recommendations with regards to good practice for TELT and its implementation at HEIs, rather than using alternative qualitative methods, such as a case study, to analyse situation-specific results. A further strength of the narrative literature review was its ability to cope with relatively large amounts of data, which is desirable in order to gain a meaningful overview of the status quo of the area of research and build a stronger argument based on a larger set of findings (Dixon-Woods et al., 2005).

3.3.1 Scoping review, search parameter and literature search

In order to narrow down the studies to be reviewed, an initial, iterative ‘scoping review’ (Petticrew and Roberts, 2006) was conducted, based on concepts in relation to the heutagogy framework, as established in chapter 2. Databases’ thesaurus function was also used to generate alternative search terms. Truncation of search terms was employed to widen the scope of the keywords used, as well as account for international spelling differences (Cronin et al., 2008). With heutagogy as the study’s framework, the scoping review was also used to first gauge the number of research projects done on heutagogy in relation to TELT in HE. Few research articles (9 in total) were identified, which was unsurprising due to the relatively recent development of heutagogy as a concept in the early 2010s. However, because heutagogy is an umbrella concept that subsumes several aspects of learner autonomy, I decided to broaden my search, incorporating terms and phrases related to the heutagogy framework that were established through the scoping review and the research to develop the theoretical framework. These terms and phrases were compiled for the Boolean search in the databases selected for use in the literature search. The databases used for the literature search were four of the key databases in the field of education as per definition of the University of Glasgow’s library, as they were expected to yield the most relevant results. These included: *Australian Education Index* (via *ProQuest*), *British Education Index*, *ERIC*, *Teacher Reference Center* (all via *EBSCOhost*).

The Boolean search terms used for the literature search were:

“e-learning” OR “digital learning” OR “web-based learning” OR “online learning” OR “technology-enhanced learning” OR “technology-enhanced teaching” OR “technology enhanced” OR “technology” OR “digital” OR “blended learning” OR “blended teaching” OR “technology use” OR “computer-assisted” OR “technology-mediated” OR “virtual learning environment” OR “learning management systems” OR “social media” OR “social network” OR “internet” OR “information communication technology” OR “m-learning” OR “mobile learning” OR “web chat” OR “web conferencing”

AND

“self-directed learning” OR “self-directedness” OR “self-determined learning” OR “self-determination” OR “learner autonomy” OR “autonomous learner” OR “autonomy” OR “self-efficacy” OR “self-regulation” OR “self-regulated” OR “self-regulatory” OR

“heutagogy” OR “heutagogic” OR “learner cent*” OR “learner cent* teaching” OR “learner cent* learning” OR “learner cent* education” OR “person cent*” OR “student cent*” OR “learner generated” OR “self-reflection” OR “meta-cognit*” OR “motivation”

AND

“higher education” OR “university”

3.3.2 Selection and critical appraisal of studies

Exclusion and inclusion criteria for the selected studies were based on the aim of choosing studies expected to deliver answers to the RQs, i.e. studies conducted in HE contexts, published between 2010 and 2019 due to the swift pace of technological development, published in English, are peer-reviewed, and look at either courses taught entirely online, courses taught using blended-learning, or face-to-face courses with TELT component(s), and that investigate the effects of technology-use on learner autonomy or any other aspect of a heutagogic educational approach. Where possible, the databases’ search tools were used to filter for these studies. The remaining studies were then appraised with regards to their relevance for this research project, i.e. their potential to answer this project’s RQs. Due to the large number of studies that were sourced through the database search, a staged appraisal process was applied (Cronin et al., 2008). In an initial appraisal round, all of the sourced papers (2,473) were judged by a cursory reading of the titles and keywords in the database results list. In a second appraisal round, a remaining 98 papers’ abstracts were read cursorily in order to identify papers to study in-depth. Finally, additional studies were sourced manually, through the references in papers found during the database search. Completion of the three appraisal rounds led to the inclusion of 28 research papers for detailed analysis in the narrative literature review. References for these papers are marked with an asterisk (*) in this dissertation’s list of references.

3.3.3 Analysis and synthesis of findings

The 28 papers selected for the in-depth review were read thoroughly in order to produce a narrative summary. After the reading of each paper and assessing of its findings with respect to their suitability for answering this project’s RQs, a summary of each article was compiled in tabular form (Cronin et al., 2008), with the categories *title*, *author(s)* and *year*, *full reference*, *context*, *data collection method*, *technology used*, *major findings*, *comments*. This data formed the basis for the narrative summary of the findings presented in chapter 4.

3.3.4 Ethical considerations

As the research was entirely document-based, working only with documents sourced from the public domain, no ethical issues were identified. Nevertheless, I am committed to upholding the standards to educational research as outlined in the British Educational Research Association's (BERA) ethical guidelines with regards to research integrity. In this research project I therefore strove to apply the highest methodological standards by making my research methods and processes transparent and aiming for critical and constructive analysis as well as clear communication of findings that seek to contribute to the improvement of educational practice and broadening of the knowledge base in the field of education (BERA, 2018).

3.3.5 Limitations of the study

Narrative literature reviews are often criticised for being selective in their choice of literature to review (Cronin et al., 2008) and that the selection process often lacks transparency (Dixon-Woods et al., 2005). This research sought to mitigate this and strove to limit bias by using a systematic and transparent search protocol. However, the possibility of bias cannot be eliminated entirely, as the search, selection, appraisal and synthesis of findings were conducted by an individual and are thus impacted by interpretations that are shaped by the individual's lived experience and cultural background (Creswell and Creswell, 2018). As a white female from a middle-class, Western background, who has extensively worked in the field of HE in several countries and has experienced the development and rise of TELT as a student as well as teaching staff, I am aware that the conclusions drawn from the analysis may have been influenced by my personal experiences, professional expertise and educational philosophies. A further factor limiting the findings of this study stems from the research method, with the research literature reviewed limited to articles published in English. Although this did not lead to a noticeable focus on research papers generated in the English-speaking world, as a considerable number of studies reviewed were conducted in non-English speaking countries, an inclusion of research published in other languages than English could have affected the findings. Finally, this research project limited its literature search to databases for the field of education. An inclusion of databases from other fields related to this project's topic (e.g. psychology, computer sciences) could have delivered literature with more or different

insights. However, due to the scope of this research project, in order to make this project manageable, these two limiting factors were not addressed further.

Chapter 4 Shoehorning old pedagogies into new technologies – Findings from the literature review

The research project set out to analyse and synthesise current research literature in relation to TELT and its role in supporting learner autonomy and other heutagogic principles in HE settings. Its aim was to identify how the implementation of TELT affects learner autonomy, and how HEIs and teaching staff can foster autonomy by means of TELT. Through the analysis of the research, several narratives emerged with regards to issues or challenges surrounding heutagogic principles and TELT in HE. While the research questions were geared towards identifying student-, instructor- and institution-centred issues individually, through the analysis of the literature it emerged that they cannot be pinned down to these categories. Rather, the issues and challenges facing these three groups are strongly interconnected. In this chapter, the findings will therefore be summarised under five narrative headings that emerged through the literature review, synthesising issues, challenges and best-practice examples with regards to the fostering of heutagogic principles using TELT. The research questions will be addressed in chapter 5.

4.1 A necessary paradigm shift

One of the most prevalent narratives was not primarily related to technology, but rather to the pedagogical-conceptual underpinnings prevalent in HE more generally. Cabero-Almenara et al. (2019) surveyed 640 teaching staff working at a Chilean HEI on their technical and pedagogic knowledge about and practical use of their institution's virtual learning platform (VLE). They found that, even though the VLE offered a range of tools that would enable student-centred and collaborative educational approaches, the surveyed lecturers made only little use of activities that involved heutagogic principles, e.g. collaboration, feedback, discussion or critical reflection. The use of the platform was 'mainly administrative for the delivery and collection of student homework; in other words, it is mainly used as a repository for materials and information' (p.31). From this, the researchers infer that while teaching staff have good knowledge of the technical aspects of the platform – as they use it effectively as an administrative instrument for e-mailing, delivering and collecting student assignments and uploading resources – they lack a thorough understanding of an effective pedagogical use of the learning platform. The researchers assume that this is because these instructors' educational practices 'are based mainly on content transmission' (p.31), i.e. a traditional, content-centred and cognitivist

understanding of education that fosters students' passive role in the learning process. The authors conclude that the mere existence and use of technology in HE does not necessarily lead to a transformation of pedagogical practices because an educator's practice reflects their beliefs about the nature and mechanisms of learning and teaching. Therefore, 'what transforms education is not the incorporation of ICT in teaching processes but how it is used' (p.27).

Similar conclusions were made by Bedoya (2014), who conducted a case study in an English as a foreign language virtual reading comprehension course for graduate students at a Colombian university, investigating their development as autonomous learners. The participants were struggling to develop self-determined learning strategies, attitudes and behaviours. The researcher put that down to the fact that 'neither the teacher nor the students [had] participated in the construction of the syllabus' (p.94), all content and activities had been established in advance and were inherently lacking 'opportunities for students to exercise autonomy' (p.94). Bedoya argues that an online course that only asks students to 'do and submit assignments does not open possibilities to interact and construct knowledge' (p.93). Instead, they needed to 'focus on proposing activities and tasks that promote the development of reflection, self-government, decision making, collaboration, and creativity' (p.94). This study also stresses the need for a shift in pedagogical convictions in the teaching staff. The course instructor displayed behaviours and beliefs not conducive to fostering learner autonomy, for example providing extensive answers to content-related questions – instead of encouraging students to discuss them in the online forum and research answers themselves. The instructor also expressed their concern that students needed their guidance, support and supervision, because of students' inability to succeed in set tasks on their own. The researcher argues that this kind of attitude not only affects the way instructors design their classes, but that it is also likely that they pass these beliefs onto their students. The author maintains that '[t]eachers and course designers who do not create opportunities for helping students think, interact, and construct [...] reflect learning assumptions far from autonomy, since they still want to take control over students' learning' (p.94). These findings support the notion of a thorough review of pedagogical underpinnings at staff and institutional levels as necessary when designing learning contexts supported by technology.

Dintoe (2018) criticises a further aspect that can prevent HE instructors from integrating innovative pedagogical approaches, such as heutagogy, into TELT. The author conducted a case study at the University of Botswana and found that pressures from the institution to teach the prescribed syllabus and prepare students for examinations was leaving teaching staff with little time to develop a more learner-centred teaching practice using the available technology. This occurred even though most staff were experienced lecturers aware of the value of learner-centred education who desired to incorporate these ideas into their teaching. However, 'student-centered approaches, faculty felt, took time they did not have' (p.157). The author notes that, '[w]ith packed syllabi and little time to cover course materials adequately, participants resorted to what worked best' – PowerPoint presentations and [a] teacher-centered approach' (p.159). This example illustrates the possible effect of a lack of institutional strategy with regards to TELT and the implementation of heutagogic principles even on well-intentioned and well-trained teaching staff and demonstrates that institutional support is vital for innovative pedagogy to be adopted in HE.

In summary, the realisation that 'attempts to shoehorn old pedagogies into new technologies' (Cochrane, 2012) will not lead to significant achievements with regards to learner autonomy, and that a shift in pedagogic philosophy, from content- and teacher-centred, towards a truly heutagogic approach, needs to happen first in teaching staff and institutions was prevalent in many studies investigating aspects of learner autonomy in relation to TELT. Further studies that came to conclusions in the same vein are e.g. Beckers et al. (2016) and Reyna and Meier (2018).

4.2 Effective integration of technology and educational principles

The importance of a shift in pedagogical assumptions towards a more heutagogic approach is also supported by Kinchin (2012a) who argues that for educators' professional practice, a distinction between 'teaching' and 'pedagogy' needs to be made, the former finding expression in the educational activities and behaviours exhibited by the teaching professional, but the latter referring to their underlying 'values, beliefs, theories and assumptions' (p.45). While the teaching behaviour is visible, the underlying assumptions, the pedagogy, are usually not. However, it is argued, that the pedagogy 'drives teaching and not *vice versa*' (p.45, emphasis in the original). Therefore, according to Kinchin, it is

vital that TELT design addresses not only the ‘teaching’ aspect, but also the ‘pedagogy’ in order to have a chance to be used effectively. The author illustrates this with an example of when an educational technologist, while presenting a new e-learning package, maintained that ‘the pedagogy will come later’ (p.45), that is, only focussing on the technological affordances of the software, not the underlying pedagogical framework. Kinchin (2012b) argues that

pedagogy cannot be added to e-learning materials as an after-thought as the implicit values and beliefs required to construct a pedagogy will already inhabit the digital media, and will underpin the pedagogic discourse that inevitably pre-empts the linear discourse of teaching methods (p.318).

In the author’s view, educational technology is neither neutral nor does it come as an empty vessel, but in its creation process, certain pedagogical convictions have already been at play. If this pedagogy does not see the learner as an autonomous agent at the centre of all educational activities, the technology is unlikely to make affordances for the educator to use it in ways that would foster this view.

This lack of integration of a learner-centred pedagogy is illustrated by Bedoya (2014), who observed in their case study in an English as a foreign language virtual reading comprehension course for graduate students at a Colombian university that both ‘the course design and the platform obliged the teacher to assume a central role in the course’ (p.92). As for the VLE used for the online course, the author specifies that the limited availability of online tools that would foster active and social learning (e.g. web 2.0 integration, discussion boards) made it difficult for the instructor to design more engaging learning tasks through which students could have practiced their autonomy as learners. The learning platform mainly offered activities not conducive to heutagogic principles, such as ‘completing charts with the information of a text, multiple choice and cloze [gap-filling] exercises, identifying word categories in a text, and inferring meaning from pictures or titles [and these] forced both the students to answer questionnaires and the teacher to check and send feedback’ (Bedoya, 2014, p.92). It is, however, also conceivable that the instructor might simply not have been knowledgeable enough with regards to the affordances of the VLE and/or a learner-centred pedagogy for them to be able to devise their course in an appropriate way. The role of developing teaching staff’s educational technology skills will be elaborated on in section 4.5.

The role of the affordances that VLEs make was also investigated by Zanjani et al. (2017), who conducted interviews with students and teaching staff at an Australian university, enquiring into design features of the university's VLE (*Blackboard*) and their effect on user engagement. The main finding was that students as well as teaching staff found the VLE difficult to use and not user-friendly enough in general, but specifically found the use of the available tools for collaboration, cooperation and discussion too complex, lacking 'easy editing, simplicity, customisability, and easy navigation structure' (p.27). For example, the VLE did not have a notification function for new entries or replies to posts on discussion boards, simplifying asynchronous collaboration, and did not display users' on-/offline status to facilitate synchronous collaboration. But it is not just the user-friendliness that learners and instructors found lacking, they also asked for better collaboration tools. One of the student interviewees complained: 'Sometimes my friends want to share some links that are useful for assignments and for the subject itself, but then we cannot do it' (p.25). Students were even generating ideas for making heutagogic use of the VLE, suggesting that having 'a student blog that you could customise and maybe even keep for the whole of your degree or to create a free account and then add [...] and search for friends and add lecturers' (p.25). According to the authors, this finding is not specific to *Blackboard*, but has been discussed for other VLEs as well.

Another vital aspect of integrating technology and educational principles is that of assessment. In several participatory action research projects conducted at a New Zealand university, Cochrane (some in collaboration with colleagues, e.g. Cochrane and Bateman, 2010; Cochrane, 2012; Cochrane and Rhodes, 2013; Cochrane, 2014) investigated the use of mobile technologies to support aspects of heutagogic education. The researcher(s) found that a lack of integration of assessment into the technology used was severely limiting the technology's pedagogical impact. As Cochrane and Bateman (2010) put it: 'Projects that do not carry an assessment weighting see a slower and lower uptake. Students want to receive credit for doing something that takes time, focus and commitment' (p.11). Cochrane (2013) gives an example for this issue. In one of the projects, the researcher suggested the introduction of mobile blogging in an undergraduate Architecture Studio course 'as a new form of documenting, sharing and critiquing students' individual and group design projects' (p.376), but encountered serious resistance to this suggestion by the course coordinator who claimed that '[a]rchitecture is not interested in process, only the final

design, and therefore design journaling will not benefit the course' and that '[i]n the Studio course the face-to-face interaction is of primary importance' (p.376). As a result, the mobile blogging was made optional for students. While the general student feedback was still positive, this decision resulted in only a third of students engaging in the mobile blogging exercise. Cochrane's (2013) interpretation is that for this colleague, the transition 'from a lecturer-focused pedagogy to a social constructivist pedagogy facilitated by mobile social media was too much [...] to bridge' (Cochrane, 2013, p.377). This example not only illustrates the necessity of an intelligent integration of technology and pedagogical principles, but also again highlights the importance of a shift in the educational mindset of teaching staff as well as institutions, as discussed in chapter 4.1.

In a similar research vein, De George-Walker and Keefe (2010) conducted a case study at an Australian university in an undergraduate programme that had recently been re-designed into a blended-learning course to accommodate off-campus distance learners as well as traditional on-campus learning modes. In doing so, the institution and teaching staff employed a course design that incorporated a variety of study mode options and forms of engagement. This meant that both on- and off-campus students were 'able to self-select and engage in any or all offered learning activities according to their learner needs, preferences and situation' (p.5), ranging from attending face-to-face lectures and tutorials to engaging with recorded lectures, print materials and online discussion forums. Through the analysis of their case study data the researchers found that many students were well aware of their study needs and were able to select the mode that best fit their often-changing needs, be they down to personal circumstances or study preferences. The researchers conclude that a truly learner-centred approach to blended-learning should not prescribe the blend of learning modes, but 'develop courses with multiple means of representation, expression and engagement and to scaffold and support students in the creation of their own individualised blend' (p.12) fostering 'reflective, self-directed, self-regulating and, indeed, self-determined learners' (p.12).

These findings and arguments reflect a notion that numerous studies endorsed, e.g. Snowden and Halsall (2017) and García Botero and Questier (2016), and that is aptly summarised by Broadbent and Poon (2015):

We should not assume that online learning in itself fosters SRL [self-regulated learning] strategies use or development. Nor should we assume that transferring

traditional teaching design and material to the online learning environment will necessarily result in the same learning outcomes (p.12).

The design of TELT-tools needs to be firmly based in heutagogic principles in order to allow for the fostering of learner autonomy. The mere acquisition and implementation of TELT-tools is unlikely to facilitate this.

4.3 Scaffolding learners towards autonomy

Chester et al. (2011) surveyed students at an Australian university about their use of lecture recordings, their academic behaviour and self-efficacy (e.g. lecture attendance, engagement with staff and students, confidence in academic achievement). The research found that lecture recordings were used most by those students who scored high on the academic behaviour and self-efficacy survey, indicating that they already had ‘greater confidence in their ability to study, understand, achieve good grades, verbalise and clarify compared to those students who did not access the lecture recordings’ (p.242). Just under one-fifth of the users of lecture recordings were also working a considerable number of hours per week, which prevented their regular lecture attendance. Similar findings were made by Auld et al. (2010), who found that law students’ who preferred non-traditional learning environments (i.e. online or blended) were more likely to have extensive experience with these types of settings, displayed higher levels of self-efficacy, and made the choice for a non-traditional learning environment in order to accommodate academic workload with non-academic responsibilities. This suggests that students who already have the skills and experience to self-regulate their learning are more likely to make effective use of HEIs’ TELT offerings to support their autonomous learning.

While some HE students are evidently able to use TELT offerings effectively, it is important not to assume that this is generally the case. Even if technology-use may be ubiquitous for most students in everyday life and they may have a high level of technology-user skills, this does not necessarily mean that they apply them effectively to their learning activities. García Botero and Questier (2016) found that many of their study participants had difficulties self-regulating their foreign language learning activities with the help of a language-learning app. Even though students perceived the app as very useful for learning a foreign language, only 10% of students finished the language course on the app that they had signed up for. Low usage students cited a busy schedule and the absence of formal

follow-ups and other external motivational factors like examinations or certifications, suggesting that the students struggled with self-regulating their learning. It also illustrates that technology needs to be integrated into the formal learning context in order to be perceived by students as important enough to warrant their spending time on its use. Even technology that is initially perceived as attractive and useful will not automatically lead to better self-regulation and autonomous behaviour in learning. As the authors put it, 'the low activity in the app contrasts the high value students attribute to it' (p.150), supporting the notion of the importance of pedagogical integration of the technology into the course (Cochrane, 2012).

Similarly, Morgan (2012) surveyed foreign language learners at an Australian university about their use of Web 2.0 tools (i.e. social media) for their foreign language learning endeavours, and to that end analysed students' entries into learning diaries. They found that while 'university students possess the skills and knowledge necessary to perform the tasks associated with Web 2.0' (p.172), they still lacked the ability to reflect on the educational potential of these tools and their skilled use of them. The researcher argues that their findings suggest a clear need for instructors to engage in discussions with students around the use of Web 2.0 tools beyond the classroom, in order to be 'separating out the procedural skills and knowledge that are a big part of ICT use from the analytical, evaluative and reflective skills required for the development of learner autonomy' (p.174). In the research project, students used learning diaries in which they reflected on their language learning activities, and the researcher suggests that such reflective tasks that foster self-monitoring and meta-cognition could be helpful, because 'the very act of articulation is a highly effective tool to develop learner autonomy' (p.174). In addition, they suggest regular assignments that require students to set their own learning goals and reflect on their achievement regularly.

These examples illustrate that some, but not all, students in HE bring an aptitude for self-regulating their learning or find it easy to adapt to the requirements of being autonomous learners. Furthermore, facilitating learning through technology does not necessarily lead to more autonomous learning behaviour in students, even if the technology employed would require such behaviours for an effective use.

With regards to students' ability to self-regulate their learning activities, it is useful to look at the reasons for HEIs to offer online or blended programmes. These courses are often promoted as viable options for students who have professional or family obligations but still want to participate in HE, as was reported by Auld et al. (2010) and Chester et al. (2011). This is likely to be the case particularly in marketized HE systems, where a HE degree is seen as a commodity and programmes are sold at high costs, forcing many students to work part- or full-time while pursuing their studies. HEIs convey the message that online and blended-learning programmes allow students to be flexible in their studies and to integrate academic qualifications into their life or combine them with their main subjects studied (see chapters 2.6 and 2.7). This was also a result of a case study conducted by Bedoya (2014) in an English as a foreign language virtual reading comprehension course for graduate students at a Colombian university. With students in the case study generally being busy with attending classes for their main subject, and with many also working full-time, the course was set up as an online course facilitated via a VLE and taught entirely online. While initially displaying motivation and eagerness to improve their English reading comprehension skills, students soon experienced time pressure, and combined with the inability to prioritise and manage the workload, as well as anxiety about failing the class, some students plagiarised their assignments (Bedoya, 2014). These findings illustrate again the importance of a shift in the pedagogical mindset of not just the teaching staff, but also HEIs and students with regards to the nature, aim, and form of teaching, learning and assessment. In a truly heutagogic educational setting, learning objectives and associated assessments are negotiated between learners and instructors. Such an approach to HE might not be easily reconcilable with a highly marketized HE system.

Going a step further beyond the simple use of technology in HE, Hsu et al. (2019) set out to establish whether self-determination theory could be applied to online learning contexts that were explicitly designed with self-determination in mind. The researchers surveyed students at a US-American university who were enrolled in online-courses that had recently undergone a pedagogic restructuring and remodelling in order to create more learner-centred learning environments. They found that the satisfaction of the three basic psychological needs established in self-determination theory (see chapter 2.1) – autonomy, competence and relatedness – are just as applicable to the promotion of learning in online, as they are in face-to-face settings. That is, online courses in which learners experience

autonomy, competence and relatedness can support their self-determined learning capability and lead to greater achievement of learning outcomes. The authors point out that while in online learning contexts, successful learning is often ascribed to the learners' innate ability to self-regulate, their case study 'should prompt researchers and practitioners to [...] refocus the conversation on the importance of an autonomy supportive learning environment for student success' (p.2172). They argue that instructors play a vital role in creating online learning environments that foster autonomous learning, which in turn means not leaving learners to 'sink or swim' (p.2172).

This need for scaffolding learners' development towards more autonomy was also observed by Olaya (2018), who conducted a case study in an English language class for engineering students at a Colombian university, offered in blended-learning mode. The researcher comments that '[s]tudents who were never enrolled in this kind of English learning activities required a special support' (p.48) and that autonomy for many students was 'a continuous adapting process. At the beginning, students did not know what to do or what activities really met their language needs' (p.48). The author recommends that educators employ patience and 'transfer responsibility to the learners gradually' (p.48), reflecting the notion of 'autonomisation' (Morgan, 2012) of the learner and the PAH continuum (Luckin et al., 2010) discussed in chapters 2.4 and 2.5.

Scaffolding learners' paths to autonomy, while necessary, also bears pitfalls that can lead to unintended consequences, as Villamizar and Mejía (2019) report in their research conducted as part of an action research project in a Spanish class at an Australian university. With the aim of fostering critical (self-)reflection and learner autonomy, they designed an assessment task with the aim 'to engage foreign language learners in self-reflection via the creation of a spoken digital journal' (p.189). For this digital journal, students were tasked with producing short audio-visual texts in the foreign language elaborating on their 'understanding of the grammar structures, vocabulary, language devices and communication strategies learnt in [...] the textbook' (p.191). Instructions were kept deliberately broad, in the hope that 'students would take advantage of the autonomy this would give them' (p.191). However, students requested lengthy explanations of what was expected of them. The researchers then elaborated on their rationale behind the task and the expected learning outcomes and assessment criteria, but still 'the submitted student

videos veered towards heavy description rather than critical analysis' (p.197). The researchers conclude that for future projects of that kind, they would have to provide clarification of the process of reflection, give examples and exercises for students to practice with. They admit concerns, however, that this would also risk limiting 'learners' autonomous decision-making processes, hindering their creativity and spontaneity' (p.197), and therefore be counterproductive. This case study illustrates the importance of scaffolding learners' development of self-reflection and meta-cognition skills. But it also calls into question the heutagogic nature of the assessment task itself, if strong guidelines need to be given for students to perform the task 'correctly'. This again illustrates the focus of HEIs and teaching staff (and students) on assessment, which would require a shift in the mindset of all stakeholders in order to align with heutagogic principles.

In summary, in order to foster HE students' autonomy through TELT, it is of no use to assume that today's students, because of their tech-savviness in everyday life, are necessarily able to navigate TELT effectively, and employ technology to self-direct their learning. The use of technology for educational purposes requires curricular integration on the one hand, but also needs modelling, mentoring and scaffolding. The aim should be to enable students to move beyond the procedural knowledge of technology-use (Morgan, 2012) to being capable of reflecting about technology's effective use for their individual learning processes. Similar findings were discussed by many of the papers reviewed, e.g. Lee (2011), Lear et al. (2016), Sahin Kizil and Savran (2016) and Yap et al. (2016). In addition, it should be noted that the scaffolding of learners' technology-use for heutagogic learning is particularly pertinent with regards to HE's tendency to portray the 'ideal student' as one who is an independent learner, modelled on the prototypical white, male, able-bodied, privileged home student, as criticised by Leathwood (2006). This view, however, is not realistic anymore in today's massified and internationalised HE contexts and risks perpetuating a traditional, elitist HE system. To combat such biases, researchers such as Leathwood (2006) highlight the importance of providing support to learners as a transitory need.

4.4 The importance of the 'human factor'

As the previous chapter discussed, fostering learner autonomy does not imply leaving learners to their own devices in their learning endeavours, but rather scaffolding their

effective use of technology for self-determined learning purposes. But it is not only the educator who plays a role in this scaffolding process, but other learners are vital as well. Canning (2010), in an action research project with a blended-learning foundation degree at a UK HEI, made sure to introduce students to using an online forum early in the program. Starting with ‘a social networking forum for students to share personal and professional information, stresses, anxieties and achievements’ helped them to ‘co-construct knowledge about their experiences, without the pressure of assessment or achieving outcomes’ (p.62). This casual online forum was also devised so that students could get familiar with the technology and with each other, before being asked to contribute in a tutor-moderated online forum, discussing and challenging ideas from their course. According to the researcher, this forum was an informal space for students to experiment with new ideas, but it was evident that students also started ‘to develop professional dialogue [and] debate concepts and co-construct shared meaning’ (p.62). This example illustrates the importance of creating and fostering a supportive community of practice (COP) in online or blended-learning contexts, in which learners can co-construct knowledge and engage in collaborative learning experiences.

In a number of participatory action research projects conducted at a New Zealand university, Cochrane (some in collaboration with colleagues, e.g. Cochrane and Bateman, 2010; Cochrane, 2012; Cochrane and Rhodes, 2013; Cochrane, 2014) investigated the use of mobile technologies to support aspects of heutagogic education. In the course of conducting the projects, the importance of culturing an on- and/or offline COP for the success of the mobile learning projects became evident. The researcher, acting as a ‘technology steward’ (i.e. the person with the most expertise in the functionality of the technology in question, coaching lecturers and students in its effective use), first set up a COP with lecturers teaching on the programmes, discussing affordances of the technology and developing ideas for pedagogic integration. Students on the course were later also invited to this COP. The COP held weekly meetings in which successes and challenges were shared, the effective use of the technology was discussed and practiced, and in which the project results were finally presented. For some of the projects, the researcher (Cochrane, 2012) reports, the COP building was not successful for various reasons. This failure was characterised by

a lack of sustained engagement leading to weak development of a sense of community, a lack of modelling of the expected communities practices by the lecturers leading to the students remaining on the periphery of the group and a resultant reverting to the COP to effectively become workshop sessions rather than forming the core of a developing COP' (p.126).

Cochrane and Bateman (2010) also found that students thought it vital for motivation that lecturers participated in the class'/COP's blogging activities, keeping a blog themselves, as well as showing genuine interest in the learner-generated content by reading and commenting on students' blog entries and participating in online discussions.

These studies highlight the importance of the 'human factor', both for teaching staff and students, even in educational contexts facilitated by technology. Community building, however, does not necessarily have to take place in person, but can also be effectively facilitated online.

4.5 Training teaching staff in effective technology-use

In order to be able to fulfil students' requests for teaching staff to actively participate in technology-based learning activities, and scaffolding students' effective technology-use, HE practitioners need to be well-versed not only in the mere use of technologies, but also their pedagogical affordances. However, the extremely swift pace of technological developments makes this a challenging task. Mulrennan (2018) remarked on the swift-paced technological development by quipping that 'technology and apps are developing at a rate that a slower-moving beast like the curriculum cannot keep up with' (p.328). For their project involving the use of mobile social media (MSM) in a journalism course at a New Zealand university, they solved this issue by realising that the 'most effective way to integrate MSM into the journalism curriculum is [...] to follow a heutagogical approach whereby students choose the tools which enable them to perform the required function' (p.328). Despite the heutagogical approach with regards to the tools used, Mulrennan (2018) argues that teaching staff still need to model the effective use of the technology for students. The researcher found that this can be achieved through the sustained collaborative support of a COP for staff, and through staff taking part in professional development activities that develop not only staff's technology-use skills, but also the technology's pedagogically sound implementation. Professional development opportunities are dependent on support and funding from the HEI and the its commitment to fostering innovative, student-centred pedagogy. Cochrane (2012) also identified teaching staff's

professional development as critical to the pedagogically sound implementation of TELT, as in one of their mobile learning projects they experienced how ‘[l]ecturers defaulted to established workflows rather than maximising mobile affordances, and therefore did not model the use of mobile tools’ (p.127). They argue that this level of disengagement might have been due to teaching staff’s lack of confidence and/or skill in the effective use of the technology they were using in their classes. Supporting teaching staff in acquiring the necessary technology skills is likely to free up ‘mental space’, enabling them to consider effective opportunities for heutagogic use of technology, and not defaulting to employing more of the same old pedagogies with new technologies.

Chapter 5 Impacts of TELT on HE provision and opportunities for fostering learner autonomy

As technology-use in educational contexts becomes ever more omnipresent, the call for learners, especially in HE, to be autonomous in their learning endeavours employing this technology is becoming increasingly loud. However, whilst the notion of learner autonomy is based on a constructivist-humanist concept of education, the current push towards learner autonomy and technology-use in HE must be viewed critically. That is, despite its origin in constructivist-humanist educational philosophies, focussing on autonomous learning has the potential to foster increased inequality in HE systems if implemented poorly. It may favour prototypical students who already display high levels of autonomy in their learning behaviour and risks the erosion of teaching quality for students who struggle with autonomy and self-determined learning. Despite these potential issues, I have attempted to argue why fostering learner autonomy is particularly pertinent in today's HE contexts, especially in relation to TELT. I have also highlighted recommendations and best-practice examples for improving learner autonomy in HE as a means for trying to mitigate against the potential issues this shift in teaching philosophy may represent for students.

This research set out to investigate in what ways TELT activities in HE impact learner autonomy, which factors relating to students, teaching staff and institutions affect the fostering of learner autonomy through TELT, and what HEIs and their teaching staff can do to facilitate learner autonomy. To answer the research questions (RQs), heutagogy was used as a theoretical framework through which to examine the literature sourced. This framework was selected because it incorporates most aspects of existing approaches to a learner-centred education, learner autonomy and self-determined learning and translates these into 21st century educational contexts that are influenced and supported by technology. A review of the relevant literature suggested several factors impacting on TELT's potential to foster learner autonomy in HE contexts that overlap in terms of their relating to students, instructors and institutions. Nevertheless, in the following, I will attempt to answer the RQs separately.

5.1 RQ 1: How does the implementation of TELT in HE affect learner autonomy?

Through a review of the relevant literature, it was found that TELT has great potential to foster learner autonomy and self-determined learning in HE, as technology-use typically enables learners to choose content to engage with, to determine their preferred way and pace of engaging with this content, and facilitates synchronous and asynchronous collaboration with peers, which are all aspects of heutagogic principles, fostering learner autonomy. But the reviewed literature also indicates factors that inhibit the implementation of heutagogic principles in TELT, and thus the realisation of their benefits to learner autonomy, which will be addressed in the following sections.

5.2 RQ2: What learner-focussed issues exist with regards to fostering learner autonomy using TELT in a HE context?

The research reviewed suggests that HE students, even though they might be considered ‘digital natives’ and regularly engage with technologies in their private lives, are not necessarily able to make effective use of technology for learning purposes. This is generally not due to a lack of technology-related skills, but rather a lack of capability to use the technology effectively in order to thrive in self-determined learning contexts. Ultimately, as ironic as it may seem, the ability to be autonomous in one’s learning endeavours needs to be taught, or rather guided, and students need to be given the opportunity to develop these skills sustainably. More specifically, students’ development towards heutagogic learning needs to be scaffolded over time by educators and supported by the affordances of the technology used for that purpose. HE students cannot be expected to bring fully developed capability to self-determine their learning to their HE studies, and therefore cannot just be left to their own devices, both figuratively and literally.

5.3 RQ3: What instructor-focussed issues exist with regards to fostering learner autonomy using TELT in a HE context?

It is not just students who need support with adopting heutagogic principles through the means of TELT. Two key issues that HE teaching staff are facing with regards to TELT and promoting learner autonomy are a lack of technology skills on the one hand, alongside an absence of the provision of training in the effective and heutagogic use of technology on the other. Training that also covers the heutagogic affordances of technology would empower educators to design learner-centred, heutagogic courses that foster self-

determined learning and provide them with the ‘mental space’ to be able to engage in planning their technology-based teaching activities with heutagogic principles in mind, rather than engaging in a 21st century educational challenge with a 20th century pedagogy.

With respect to the successful combination of heutagogy and technology-use amongst both learners and educators, human interaction – online or offline – is a vital component. Such interaction can take the form of Communities of Practice (COP) and provide opportunities to co-construct knowledge, facilitate collaborative learning experiences and the exchange of best-practice examples. This need for human interaction even in technology-based learning environments is not entirely surprising, as heutagogic principles are based on a humanistic worldview. The affordances of technology in this context are opening up new ways to engage in humanistic educational principles.

5.4 RQ4: How can HEIs and their teaching staff foster learner autonomy by means of TELT?

The most pertinent issue in terms of HEIs’ and their teaching staff’s role in fostering learner autonomy through the use of TELT is the need for a paradigm shift with regards to the general approach to learning and teaching, as it pertains to all factors that affect the fostering of heutagogic principles by the means of TELT. The required shift is a transition away from content- and teacher-focussed learning approaches towards a truly learner-centred, heutagogic approach. This commitment to heutagogy must happen first and foremost in HEIs, but also amongst teaching staff and students. The mere use of technology in HE contexts does not necessarily ensure the adoption of heutagogic principles. This is because traditional understandings of the mechanisms of learning and teaching are on the one hand deeply rooted in the individual educator, and on the other they can be inherent in the technology itself. That is, if a technological tool is not created with the aim of fostering heutagogic education, and/or the educators using it are convinced that it is their task to impart knowledge on their students, heutagogic principles like self-determined learning, learner autonomy, collaboration and meta-cognition are unlikely to be facilitated by the use of this technology. Furthermore, the integration of technology-use into the curricula as well as the assessment is vital for it to facilitate heutagogic practice. Using technology for technology’s sake is unlikely to foster a move towards innovative educational approaches but will much rather result in the same old pedagogies, but with screens.

But often technology is not employed for its own sake, but as a measure intended to save time and staff resources, and through this expenditure. However, the research reviewed suggests that the implementation of heutagogic principles through TELT does not imply fewer staff hours, but that it is rather time-consuming, requiring educators to take on the role of a learning guide, scaffolding learners' development towards autonomy. In addition, adopting new educational approaches and/or new technologies requires time and resources that HEIs need to allocate if TELT is to be successful in fostering students' autonomy.

Ultimately, HEIs need to explore what it is that learning and teaching in HE should look like in the future. Moreover, there is a need for society as a whole to reflect upon what HE's purpose is and what society desires its graduates to be capable of and skilled in. In the 21st century, this will arguably not involve knowing facts off-by-heart that could easily be found on the internet with a quick search, but higher-level skills, e.g. cooperation and collaboration skills, metacognition, creative problem solving, all of which are fostered sustainably by heutagogic approaches to learning and teaching.

5.5 What future for TELT in HE?

The findings above represent insights into key factors influencing the effective implementation of TELT and heutagogic practice in HE contexts, in addition to recommendations and best-practice examples for HEIs and their teaching staff. At a time of mounting pressure on HEIs to move to educational formats involving TELT, and on students to present as autonomous learners, TELT-focussed higher education provision that lacks sound pedagogic strategies for its implementation risks provision that is inadequate for current and future HE and societal contexts and challenges. It could also exacerbate students' isolation, as well as their struggle with unrealistic demands in HE contexts, which ultimately may lead to inequalities in access to and outcome of higher education. It is therefore vital for the HE sector to implement heutagogic practices through TELT, with a pressing need for further research into the specific frameworks required to achieve this consistently and equitably throughout the HE sector.

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