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Understanding the dynamics of complexity: new insights for senior leadership practice in one higher education institution in England

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Abstract

The higher education sector in England is having to rethink how it will operate in the future. The speed and scale of change; uncertainty and ambiguity; emergence from a global crisis; and the increasing complexity of the environment the sector is operating in has challenged some of the traditional norms of leadership. With senior leaders, and in particular senior leadership teams, needing to take an active role in this re-engineering, many are recognising that the dial has been reset in terms of the leadership practices that have served them well for many years. Now more than ever it is clear that a greater emphasis needs to be placed on developing leaders who can lead complexity (Uhl-Bien 2021).

This research, using a case-study based approach in one English university, has used the lens of the complexity sciences to provide a different perspective on the HE sector and the leadership practices of senior leaders, including the response to change of the senior leadership team in this case study university. First, it highlights the connectivity and inter-connectivity of individuals, the university and the wider sector, showing them to be part of a complex system which is continually emergent and requiring intentional adaptation. Second, it shows the significance of cognitive complexity, and how individual perspectives can influence our personal perception of whether something is complex or not. Finally, it suggests that organisational maturity - or readiness - are important considerations in terms of the ease with which an organisation's design can or will accommodate emergence and entrepreneurial novelty alongside compliance, stability and order as mutually necessary parts of a complex organisational system.

Through using a grounded-theory based approach, this research contributes to, and extends, existing research into leadership in higher education in England.

The main contribution of this research is the development of the Bricolage Leadership Practice model, which seeks to bring together a range of elements that are suggested as being necessary as part of individual, or collective, leadership practices moving forward. In addition, this research also helps to fill a gap in the evidence base by looking at senior team leadership in a university context, reviewing the collective team's attitude and aptitude for change.

Acknowledgements

I would firstly like to thank my supervisors, Toby Greany and Sarah Speight, whose careful and considered feedback at every stage of the journey has helped unlock areas of my mind that I didn't know I had. You have offered support and challenge, focus and freedom, as well as generosity of time, patience and encouragement. Thank you.

Secondly, I want to thank my team who have quietly and purposefully kept me going through many challenging times. You have allowed me to keep my work in balance by stepping up and in when you have needed to, and you have kept encouraging me to achieve what you knew I could achieve, even if I didn't always quite believe it myself.

Finally, the biggest thanks for my family, who never quite knew why I wanted to embark on yet another learning adventure but have supported me anyway. To my husband, Simon, for the weekends lost to studying and for helping with the transcription of my interviews. And to Hannah, our daughter, for your positivity and encouragement, those interesting conversations about what makes people tick, and for creating fabulous mind maps that really helped me make sense of all my findings. You are an amazing human being.

Dedicated to those who are curious; those who see things differently and unexpectedly; those who try and try again; and those who are passionate about making the world a more insightful place.

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1 Introduction and outline of the research

1.1 Introduction and research summary

This chapter provides an introduction to the background and context for this research and the theoretical frameworks that it has drawn from. It also outlines the issues being addressed, the research approach taken and highlights some of the limitations recognised. My personal relationship to this research is also referenced along with the main contribution to knowledge. The chapter closes with an outline of the remaining chapters of this thesis.

This research, summarised in Figure 1 below, has been undertaken in one university in England using a case study approach. This university has been called the University of Sapientia (meaning wisdom) to provide anonymity. It provides an original contribution to knowledge by considering the notion of complexity in relation to the higher education (HE) sector in England. It considers the dynamic interplay that both individual and organisational development or readiness have on leading through complexity, drawing from insights offered by Complexity Leadership Theory (CLT) and the field of complexity sciences more widely. It explores these issues through a case study of leadership in one HE institution, including during the Covid-19 pandemic. Finally, it assesses the implications for senior leadership practice in this one institution in the future.

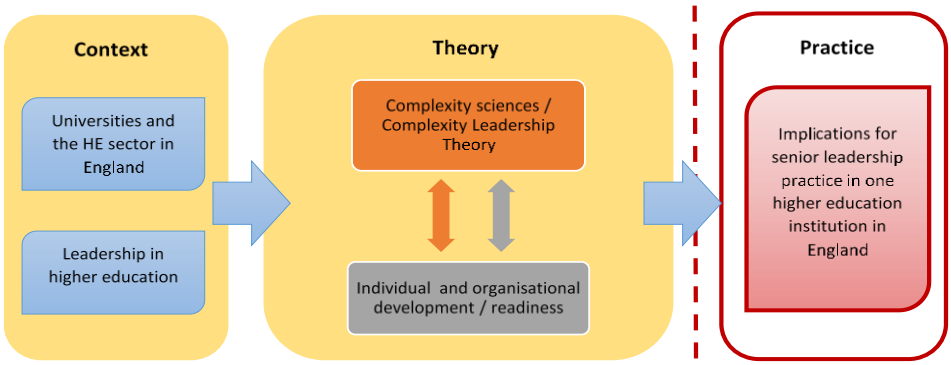

Figure 1: Research summary

1.2 Statement of the issues

Whilst the historical role of universities as providers of advanced skills and knowledge needed by their societies has remained steadfast over several centuries (Palfreyman, 2017), globalisation, marketisation, policy and financial changes, and the crisis arising from a global pandemic have meant the context that universities in England are operating in has changed rapidly over recent years. Universities have had to work harder to position themselves in the marketplace, balancing teaching, research and wider civic roles.

In the UK, HEIs have seen a tripling of student numbers over the past 25 years, whilst at the same time assimilating a 50% cut in the unit of public funding for students. Thus, they have had to do 'more' with 'less' whilst still maintaining a high quality standard (McCaffery, 2018). In the English context, policy has driven a change to funding mechanisms, encouraging universities to be drivers of economic growth and impact. An increasing weight of metrics across multiple dimensions (educational, research, social, economic) has been placed on universities - dictating, measuring and monitoring their performance and positioning on league tables, leading educational leaders to re-configure and re-shape institutional objectives and priorities (Dopson et al., 2016). The declaration by the World Health Organisation of Covid-19 in autumn 2019 shifted the speed and scale of change, reinforcing the concept of leading beyond organisational and professional confines (Bolden, 2020). Within this context, universities in England have appeared to become much more complex to manage.

Many senior leaders across universities have traditionally been drawn from academic backgrounds, although more recently it has become clearer that the nature of academic leadership has become more wide ranging, having to take account of much broader institutional and sectoral contexts (Dopson et al., 2016). This suggests that a broader leadership approach that is cognisant of the complexity of this interwoven, rapidly changing and much more dynamic environment is needed (Dopson et al., 2016). Research also suggests that there are leadership tensions that need to be navigated in the sector, usually between organisational leadership (often synonymous with 'central' roles such as the those on Executive Boards and Directors of Professional Services departments) and 'front-line' leadership (such as teachers and researchers). Leadership approaches that are felt to undermine collegiality, autonomy and the opportunity to participate or drive decision making can be seen to impact on the commitment and engagement of academics (Bryman, 2007). This has highlighted the very delicate balance that institutions are seeking between formal vs informal, centralised vs localised, and position vs practice in terms of leadership and management (Bolden, Jones, Davis, & Gentle, 2015). Issues of managerialism, confusion over what is management and what is leadership, and clarity around which are the 'best' approaches to take in terms of leadership and management in a higher education environment add to this complex challenge.

In spite of this changing landscape, and whilst there has been some consideration in the sector of newer leadership theories, particularly those focused around shared/distributed and authentic leadership (O'Connell, 2014), the research base in this leadership context is limited. There are no studies that consider the sector through the lenses of complexity theory and that also include the context and impact of the current pandemic. This study

aims to fill this gap, potentially providing leaders in this case study higher education institution with an opportunity to consider whether there is *"a new toolbox of intellectual stimulation, idealized influence and inspiration"* that can be drawn from, and whether it is time for leaders to be *"courageous enough to disrupt longstanding patterns of behaviour, to challenge opinions and organizational norms, and to disrupt the status quo"* (Fernandez & Shaw, 2020, p. 41).

1.3 Context and rationale for the research

Since the founding of the first universities in the mid 1200's, the higher education landscape in England has been constantly evolving. Shattock (2012) and Temple (2014) provide insights into the evolution of the sector, from specialist medical schools to elite universities for the few, to the creation of new universities in the post-war era. Whilst change has been continuous, what appears to be felt by those now working in the sector is that the pace, scale and complexity of the changes over the past two decades has become increasingly challenging to manage.

Since the start of the millennium UK HEIs have tripled student numbers and assimilated a 50% reduction in the unit of public funding per student. At the same time, universities have continued to return cost savings, and contribute significantly to the UK's gross domestic product (GDP), therefore being key contributors to wealth creation and economic well-being. Despite these successes, UK HEIs have been less successful in evidencing value for money and managing the internal ramifications of a raft of externally imposed changes (McCaffery, 2018). Of these changes, the White Paper, *HE: Students at the Heart of the System* (BIS 2011) was potentially the most significant in recent years, creating a shift from what had been a sector that was largely the responsibility of the state to one that was nominally placing HE back into the market (Shattock, 2012). The introduction of the Higher Education and Research Act (2017) and the Office for Students (2018) was intended to create a new regulatory framework for the HE sector, increasing competition and student choice, ensuring students received value for money, and strengthening research.

The University of Sapientia, as the case study institution for this research, has also experienced significant change. Being a Russell Group university with a student population of c45,000, it has both school and Faculty structures, as well as a range of enabling teams and services, including residences, conference, catering and sports facilities, and an estate that if put together would operate like a small town. In common with many other UK universities, it has an international footprint, with international campuses and student exchanges across the globe. Also, in common with other HEI's it has experienced changes in leadership which has subtly altered the focus of operations, and it has needed to respond to disruptions and disputes over pay, pensions and more latterly the significant impact of Covid-19. Throughout its history, the university has taken pride in supporting discovery, innovation, and the enablement of learning, embracing the challenges provided by a changing world, making the exploration of complexity in this context interesting.

Universities therefore seem to have become participants in a more complex environment, with greater demands and calls for accountability from a much wider range of stakeholders, all of which needs careful navigation and interpretation. And yet as Maylor, Turner, and Murray-Webster (2013, p. 46) highlight *"Complexity is a subjective notion, reflecting the lived experience of the people involved …. highly dependant on perception and influenced by conscious, subconscious and effective factors. Perception influences the judgement of whether something is complex to manage or not and the degree to which a manager believes he or she can influence the situation."* There therefore appears to be a lack of clear evidence as to whether the higher education sector is actually becoming more complex, or whether individuals within the sector are just viewing the sector differently.

Further investigation into what is meant by complexity in higher education and the response of individuals to this is therefore needed.

With these external changes comes the need for an internal response. This changing environment has raised debates about the type of leadership that is required in our universities, and more controversially whether associated rises in Vice-Chancellor salaries and benefits can be justified (Bachan & Reilly, 2015). Questions are also emerging as to whether current leadership practices are fit-for-purpose for this level of organisational and sector wide complexity (Kezar, Carducci, & Contreras-McGavin, 2006).

The journey of leadership theories from 'command-and-control' leadership of the 19th Century, through to the behavioural and situational theories of the 1950s, transactional theories in the 1970s, and transformational theories of the past two decades highlight the evolution of leadership thinking in response to social and political change. (Black, 2015). The more recent theories of collaborative and distributed leadership (Beckmann, 2017; Bolden et al., 2015; Bolden, Petrov, & Gosling, 2009; Jones et al., 2017; Youngs, 2017) highlight that leadership practice extends beyond positional boundaries, being more about relationships, engagement and action. Whilst written in the context of business leaders, Lowell (2016, p. 148) writes that *"leaders who once believed that they could impact the success of their organizations through superior planning and performance now find that they have to cope with factors they can neither anticipate nor control"*. The implication seems to be that the concepts of leadership in the sector are continuing to evolve, with HEIs potentially needing to understand how leadership practices need to continue to keep pace with such changes.

Research undertaken in relation to specific HE leadership groups, such as academic leaders (Gmelch & Buller, 2015; Macfarlane, 2011; McCaffery, 2013) and the effectiveness of universities as organisations (Pounder, 2001) has expanded understanding of specific leadership areas in recent years. Macfarlane (2013) highlights the difference in language often used within the higher education sector in relation to leadership. He notes that for some the transition can be from *"scholar leader"* to *"manager"*, with university leadership roles often seen as 'administration'. The idea of a career in 'management' can therefore be one that sits parallel to the leadership of education or research, meaning that the terms 'leadership' and 'management' in the HE sector can be somewhat confusing. McCaffery (2013) concurs, recognising the long-upheld separation between academic leadership and policy making on the one hand and policy implementation and administration on the other. And yet this is not a call to abandon the notions of academic freedom and democratic decision making that are well established, more a request for clarity and redefining roles within the changing context that universities are now operating (Gmelch & Buller, 2015; Macfarlane, 2013).

Whilst this expanding raft of research into the HE sector and HE leadership has offered much to be considered, what appears to be lacking is research that explores the connectivity of these two domains. The significant and fast changing nature of the HE sector is having a direct impact on the practice and principles of leadership, and yet little research brings both organisational complexity and individual leadership together. This suggests that there is a need to look much more closely at the inter-relationship between the behaviours and practices of leaders, the changing nature of universities, and what implications this has for the future in what seems to be becoming a highly complex sector.

1.4 Personal position and relationship to the research

Having been privileged to hold both academic and professional services positions in the UK higher education sector for over twenty years, I have seen and experienced the dynamics of change in the sector. With my experience of post-1992, Russell Group and universities in international settings, the complexities for the sector have been very apparent. With organisational and cultural transformation in higher education as my key areas of specialism, I have been intrigued by the way the sector has evolved over time, and the way in which leaders navigate these changes personally, including how they make choices that impact the way that universities respond and are ready for these changes. Being employed within the institution being studied also enabled ease of access and deeper insight into the dynamics of this university environment. This research draws on this experience and knowledge in the on-going search for new learning in this area.

Living with the neurodivergent condition dyslexia also meant I entered such a large-scale research endeavour with some trepidation. Whilst I took a very open approach to exploring the research methods that were right for this study, given I prefer tools which support visualisation of data, this may have impacted on some of my methodological choices.

When considering my positionality to the research in terms of research paradigms, I have taken a pragmatic and interpretivist stance, recognising that meaning gathered from both theories and data can be both contextualised and generalised, can be intertwined to make new meaning, and are subject to human / social constructs which are subjective (Kankam, 2019).

In summary, my personal position to the research has been to be open, curious and adaptive to the literature, the research data, and the changing context within which the research was set. I have strived to suspend personal judgement, previously assumed knowledge, and pre-existing assumptions. I have acknowledged my 'insider' position although acted as an 'outsider' as far as practicable, recognising this would be imperfect. I have recognised that whilst the HE sector was known to me and as such was a 'safe' context, it was chosen primarily to enable the application of learning in practice. Finally, I recognised that even having undertaken post-graduate research previously, I am still a novice researcher and research of this nature is not exact. Certainly, if I undertook this study again there may be things I would do differently.

1.5 Research questions

This research set out to explore the following key question, with sub questions which allowed clearer investigation of this:

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a) Do senior leaders within this higher education institution perceive the higher education environment to be more or less complex and what is the rationale for this understanding?
b) How do leaders perceive complexity in one English higher education institution, including the relationship between organisational and individual factors and the implications for their own leadership practice?
c) What are the implications for the development of leadership practice in the future?

In the context of this research, leadership practice is defined as:

- practical and observable behaviours, actions and reactions
- qualities that only manifest themselves when they are actually put into practice
- actions resultant from conscious and unconscious choices made
- not role dependant i.e. anyone can enact leadership practice.

This aligns with the work of Spillane and Orlina (2005) who drew from the work of Bourdieu (1990), suggesting that leadership practice is connected to actions taken at a specific time and place, with options considered and weighed, with individuals acting *"in*

one way or another in certain situations and these dispositions may not be at the level of conscious decisions" (Spillane & Orlina, 2005, p. 159). It also aligns with the work of Kouzes and Posner (2003, p. 64) who identify five leadership practices, recognising that they are *"available to anyone, in any organization or situation"*.

The notion of 'complexity' is considered throughout this study in both subjective and objective terms. It is considered subjectively when considered in relation to people's experiences and perceptions of complexity, including their personal response to this. It is considered objectively in relation to the Complexity Leadership Model, which is a framework for the design of a leadership (and organisational) response to complexity, offering a structured approach to organisational and individual adaptability. Here, the notion of complexity is presented as internal and/or external pressures that drives disequilibrium in a system, which in turn requires an adaptive response. The complexity of the environment, the HE sector and individual HEI's are considered both objectively and subjectively as it is accepted that disequilibrium in the system creates complexity of the whole system (objective), however the way in which this complexity is viewed, the extent of the complexity and the response to it this research indicates appears to be dependent on individual's positionality and experience in relation to this, and the level of control they have over it (subjective). Therefore complexity is viewed as an objective notion which elicits and subjective response.

1.6 Theoretical framework

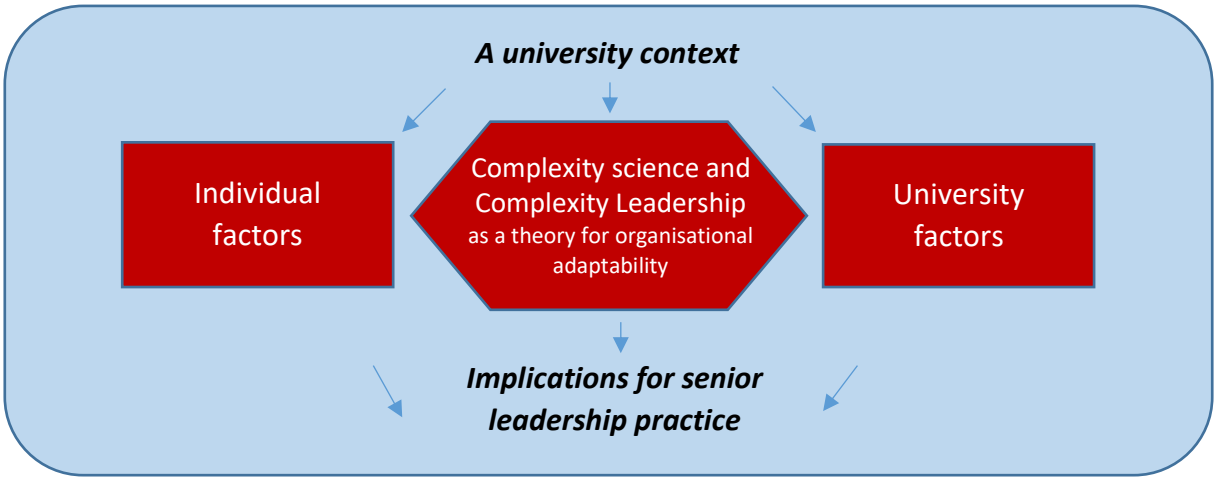


Figure 2: An emergent theoretical framework

The starting point for this theoretical framework was drawn from the work of Marion & Uhl-Bien (2001) and Uhl-Bien & Arena (2018) who explore organisational adaptability, developing an approach called Complexity Leadership. This was informed by their work that explored the application of complexity science (which is usually associated with the natural sciences) to the social sciences. Their claim is that leadership studies and practices needed to move from a top-down design to a model that enables interconnectivity and enhances dynamic systems, behaviour, and innovation (Marion & Uhl-Bien, 2001). They suggested that *"complexity science broadens conceptualizations of leadership from perspectives that are heavily invested in psychology and social psychology (i.e. human relations models) to include processes for managing dynamic systems and interconnectivity"* (Marion & Uhl-Bien, 2001, p. 389). What is interesting about this approach, and how it sits alongside, and yet remains distinctive from, other work in this field, is that whilst it recognises the common premise of many leadership theories that leadership is heavily grounded by interpersonal influence and the interplay between leader

attributes / actions and follower emotions, it recognises that this may not tell the whole story (Marion & Uhl-Bien, 2001). Synthesising a decade of learning, research and practice in applying the Complexity Leadership model, they recognise that whilst the notion of adaptive leadership is suited to the dynamic and evolving systems and environments that we operate in, it can be difficult to lead organisations in an adaptive way when faced with order imposed by hierarchical and bureaucratic organising structures (Uhl-Bien & Arena, 2017). They see leadership as an emergent outcome of interactions between agents (see Figure 3).

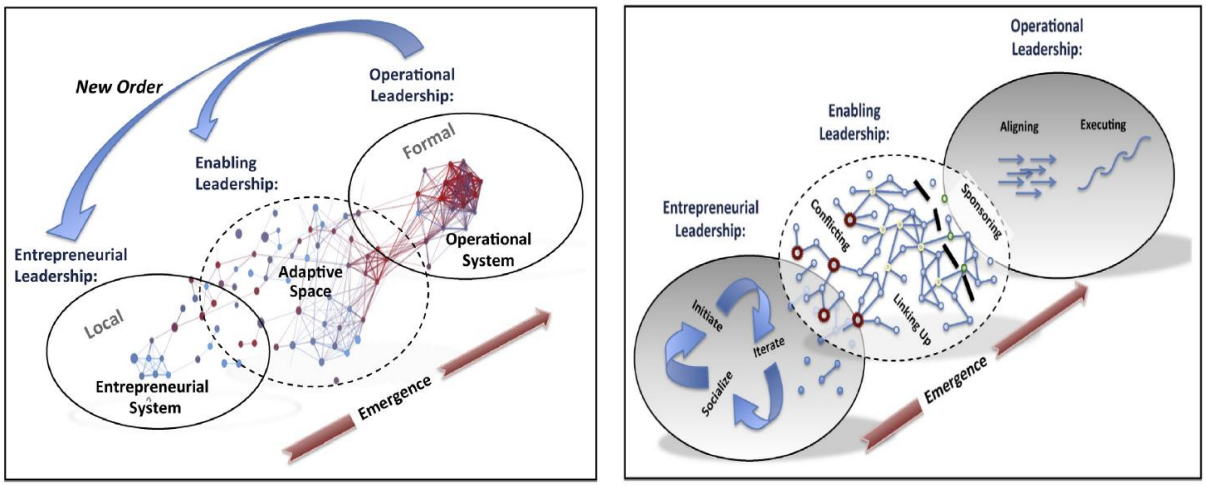


Figure 3: The Complexity Leadership Model and Complexity Leadership behaviours view

From this perspective, leadership has three main functions which are not isolated to any one individual or position, suggesting that a single individual could potentially engage in any one of them:

- *Administrative or operational leadership* relates to the role played by individuals in formal leadership positions. A key role of operational leaders in this context is to convert emergent ideas into organisational systems and structures that produce on-going innovative results. They are enablers in removing barriers to innovation, whilst

finding ways to align, resource, execute and implement ideas that enhance organisational performance and fitness.

- *Adaptive or entrepreneurial leadership* describes adaptive, creative and learning events that emerge from interactions. These are informal emergent events that occur in the context of internal tension, and can be in response to external stimulus. Here leadership is about enabling the development and creation of new ideas with a focus on fast implementation with few resources, demonstrating tenacity, flexibility and pace in approach. Here there is a recognition that ideas and contexts can change at speed, although if successful need to be implemented effectively. A strong link to enabling leadership is therefore needed to shape and scale ideas in readiness for brokering and adoption into the operational system.

- *Enabling leadership* is understood as the intertwining of both bureaucratic (administrative / operational leadership) and emergent (adaptive / entrepreneurial leadership) domains. This intertwining, or "entanglement" as the authors prefer to term it, involves creating appropriate organisational conditions that facilitate adaptive and entrepreneurial leadership, and enhance the flow of knowledge and creativity from emergent to formal bureaucratic structures.

What is interesting about this theory is that is recognises that leaders not only create the system but are also created and influenced by the system through a process of aggregation and emergence. For Marion and Uhl-Bien, formal leaders can enhance complexity and enable tension from which creativity emerges. This, however, assumes that complexity is a

phenomenon which can be productively shaped and enabled by leaders, rather than being an inherent characteristic of organisational and environmental reality.

What this theory seems only to partially consider, however, is the organisational system within which this type of leadership operates. It does not seem to fully consider whether the maturity or readiness of the organisation drives or dictates a certain type of leadership response. The often-uncontrollable changes to the external environment add to the volatility that leaders have to navigate, and it is not clear whether this model provides leaders with a framework within which to respond, or a way of operating which will allow flexibility to adapt continually. It also appears to neglect considering the willingness and individual mindset of the individual leader who (it is assumed) needs to be an effective actor in these leadership spaces. The success of Complexity Leadership Theory (CLT) seems to need to take account of the individual readiness and willingness of leaders to be effective navigators of complexity leadership, therefore these issues are incorporated into the research design, as outlined below.

The theoretical framework for this research, whilst drawing from CLT, has also considered additional factors affecting individuals and the university, bringing together insights from the natural sciences, social sciences and the cognitive sciences in one study. These areas are explored in the literature review through consideration of the complexity sciences – which draws from the natural sciences; the changing nature of leadership as drawn primarily from the social sciences; and also the complexity readiness of organisations and individuals, in particular cognitive complexity.

1.7 Research approach and methodology

The detailed research methodology and rationale is set out in Section 3. This section and the next therefore provide an overview of the approach taken. This research has explored the dynamics of complexity (as drawn from the wider field of complexity science) and ideas taken from CLT in a higher education setting, considering any new insights that could be gained into how senior leaders might shape one university in England in the future. It has also explored any implications this has in terms of leadership practice and whether this provides a different approach to considering senior leadership in the future. Alongside this, consideration has been given to the relationship between organisational development theories, the evolution of leadership theories and human cognitive development. The aim of this has been to explore not just the complexity sciences and CLT as key theoretical concepts, considering their potential merits in a higher education setting, but also to reflect on whether specific individual and organisational factors also need to be considered.

It has also explored whether understanding the dynamics of complexity is perceived as being useful by leaders within a specific English university environment. Through an iterative process of enquiry the aim has been to understand whether leaders believe the sector to be complex, reviewing factors affecting this, and whether they believed that learning from the complexity sciences and CLT has the potential to provide any practical enhancements to their leadership practice in their higher education setting.

The methodology used was a single case study approach (one English University) drawing from a constructivist grounded theory method using a research design based on a mixed methods approach. In this context, the definition of case study draws from the work of Yin

(2012) who describes case studies as the development of an in-depth understanding of a contemporary phenomenon in a real-world context, whilst also recognising that the context and other conditions related to the case are also integral to developing this depth of understanding.

Constructivist grounded theory was chosen as it has allowed the exploration of the dynamics of complexity within this HE context, as well as an exploration of the dynamics of complexity and its connectivity to other individual and organisational factors, thus enabling a more openly exploratory process. This iterative interplay has also allowed a greater ownership of both the research and outcomes by senior leaders within the case study university (as well as myself as researcher), which is likely to mean that any changes in practice are better understood and welcomed by the senior leadership community. Co-creation of the outcome was viewed as being a more powerful approach to effecting impact, which is also an important factor in an applied Doctoral study of this nature.

A mixed methods research design approach was employed, with both quantitative and qualitative elements integrated and utilised at each research stage. This aimed to be both confirmatory and exploratory, strengthening the inferences and analysis (Cohen, Manion & Morrison, 2011). Whilst ultimately the outcomes drew mainly from the qualitative data supported by quantitative analysis, it was a mixed methods approach that was used as the intentional research design.

A diagrammatic representation of the research approach is provided in Figure 4.

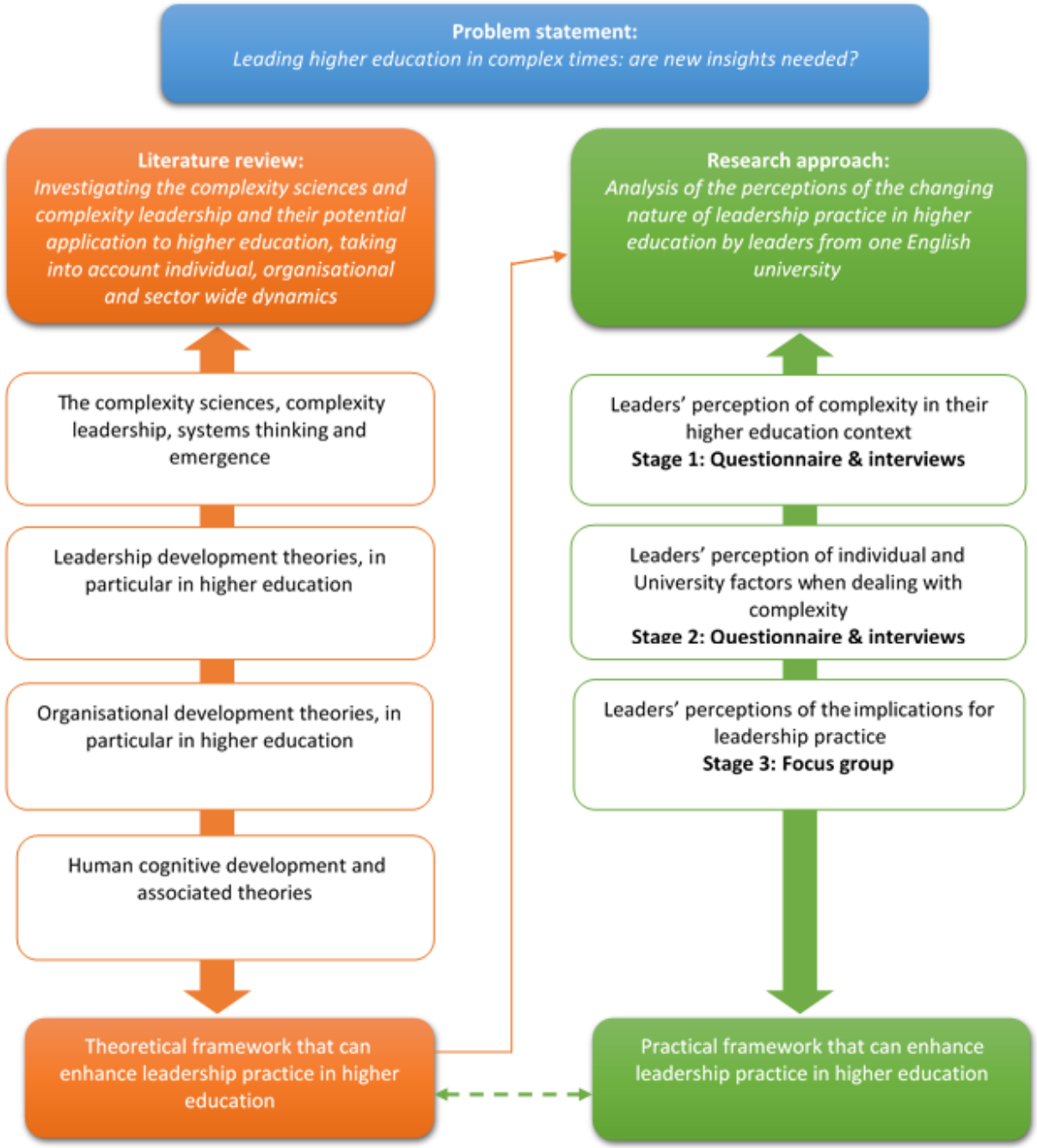


Figure 4: Illustration of the research approach

1.8 Research sample, data collection and methods

Having previously explored leadership research related to the Vice-Chancellor (VC) level of leadership and also specific groups/types of leadership (e.g. academic department heads, research or teaching leaders) it became clear that there was little research that focused on the senior leadership layer beneath the VC level i.e. the key senior decision makers across all job/discipline areas. The research sample used in this research therefore bridged this gap, as it was drawn from the Senior Leaders Group of the English university chosen as the case study. This group of just over 100 individuals represent research, education, and professional services areas across the entire university, which also has a global footprint. It includes all University Executive Board members, all Heads of Schools/Departments, Faculty Associate Pro-Vice Chancellors and Directors of Professional Service Departments. They are instrumental in leading the university and are key to setting the tone for leadership across the university. They are also instrumental in dealing with, and making decisions about, the issues and challenges facing the university. Any implications for the enhancement of future leadership practice are also likely to be of interest to them.

Given the multi-faceted approach being undertaken, a summary of the methodological instruments used is provided in Figure 5. It should be noted that some of the initial themes were also re-visited in the final interview stage of the research, driven mainly by the impact of the Covid-19 pandemic and the need to review / re-validate earlier findings.

Theoretical framework	Research instrument used
Data collection stage 1: Survey	
Leaders' perception of complexity in their university context	Researcher defined questions Complexity Assessment Tool (CAT) (Maylor et al., 2013)
Data collection stage 1: Semi-structured interviews	
Leaders' perception of complexity in their university context	Researcher defined questions: Interview questionnaire 1 (14 questions)
Data collection stage 2: Survey	
Individual factors	Behavioural Complexity Questionnaire (Lawrence, Lenk, & Quinn, 2009)
Organisational factors	Organisational Change Capacity - adapted from Judge and Douglas (2009)
Data collection stage 2: Semi-structured interviews	
Individual factors	Researcher defined questions: Interview questionnaire 2 (12 questions)
Organisational factors	
Data consolidation stage 3: Focus group	
Implications for leadership practice	Discussion and collective analysis of research
The overall outcome from all stages combined aimed to provide an analysis for the overarching research question: ***Understanding the dynamics of complexity: new insights for senior leadership practice in one higher education institution in England***	

Figure 5: Summary of methodological instruments used

1.9 Summary of limitations and assumptions

Limitations to this research are explored more fully in section 3.7, although key limitations and assumptions are provided here. For time and practical reasons this research was limited to one university based in England. It was recognised that whilst there may be relevant learning that can be gained from this research that may be applicable to other higher education institutions, the context, culture and leadership approach in every university varies considerably. It is also recognised that the sample group was limited to a key senior leadership layer of this university, so any learning gained may not be wholly applicable to different layers or levels of leadership. Care should therefore be taken to adapt and adopt findings appropriately.

Whilst not being funded / sponsored to undertake this research, my role as both employee and researcher within this higher education institution has had advantages and limitations. As an insider within this environment this posed legitimate ontological and epistemological issues, such as being able to approach the research objectively as a 'professional stranger' (Cohen, 2011), whilst also recognising that my own professional knowledge would form part of the interpretative shaping of the outcomes of the research. Gaining direct access to a pool of research participants, and being sensitive to the context they were operating in, particularly in the latter stages of the research during the Covid-19 pandemic, was helpful, and meant I was able to complete my data collection in spite of the challenging circumstances, which might not otherwise have been the case.

1.10 Contribution to knowledge

The key contribution to knowledge that this research provides includes:

- In the context of one institution in the higher education sector, consideration of complexity dynamics, Complexity Leadership Theory and the connection / implication these have on leadership practice.
- Consideration of individual and organisational factors which impact on the interplay between complexity and leadership practice.
- Addressing gaps in the existing evidence base in terms of research related to senior teams below VC level, and the impact of their leadership practices, including in the context of the Covid-19 pandemic.

This research provides insights which could inform further studies in the fields of higher education, leadership and the complexity sciences.

1.11 Introduction to, and structure of, this thesis

This thesis provides the overview, analysis and outcomes of this research through a number of focused chapters. This chapter has provided the overarching introduction, purpose and contribution of this research.

Chapter two explores the grounding for the research based on a detailed review of the literature. This covers an exploration of the higher education sector context; leadership within this context; the notion of complexity and an exploration of the complexity sciences, including the emergence of Complexity Leadership Theory; and complexity readiness from individual and organisational perspectives.

Chapter three provides insights into the research design and methodological approach used, providing the rationale for why a constructivist grounded theory-based approach was chosen. This chapter also outlines the sampling and data collection methods used, including the limitations and ethical considerations associated with this.

Chapter four presents the detail of the results from the different stages of data collection, organised around the three key research questions. The process by which the data was analysed is also considered within this chapter.

Chapter five offers a discussion of the findings, providing an interpretation of the data in line with the research questions posed.

Chapter six synthesises the findings into an overall conclusion, with confirmation of the contribution to knowledge and potential implications for current practice and future research.

References from throughout are included in the last part of this thesis, followed by appendices which includes documentation referenced within the body of this research.

2 Literature review

2.1 Introduction

This interdisciplinary research, which synthesises and integrates contrasting academic disciplines for the creation of new analysis (Nicolescu, 2018) aimed to examine the interconnectivity and inter-play between differing research arenas, with the ultimate purpose of developing new insights related to leadership in a higher education context. This integrative literature review (Torraco, 2005) therefore seeks to explore a number of fields of research to a limited degree of depth, with the chapter summary drawing together and considering key emergent themes.

The mapping of literature followed the research summary closely (Figure 1), with the main domains of research explored including the following topics, which were also used as keyword search terms:

- The higher education sector (in general)
- Leadership and management (in general), including a closer look at:
    - Leadership and management in higher education and the education sector more widely
    - Leadership through the Covid-19 pandemic
- The complexity sciences and complexity theory, with a closer look at:
    - Complexity and higher education, as well as in public sector and healthcare settings
    - Complexity leadership theory
    - Complexity leadership and higher education

A review of the literature related to research design and methods, in particular mixed methods and grounded theory was also undertaken and is drawn upon in section 3.3.

Reviewing the literature was an iterative and systematized process throughout the research period, with literature searches, collation and analysis ordered mainly within and around the themes above (Brundrett & Rhodes, 2013; Coleman & Briggs, 2002). All sources were collated using Endnote. Intellectual curiosity started with the main themes, with the priority for this process being to reach the boundaries of the landscape of the literature for each theme of as far as practically possible.

The literature was initially reviewed in terms of relevance of content via a surface read of the abstract and discussion / conclusions, and then triaged, labelled, and ranked in importance in terms of *"the provocativeness or fruitfulness"* (Torraco, 2005, p. 364) to each section of the thesis. In-depth reading followed, and through this process key areas and arguments of interest were physically highlighted in colour and notations on and around the text made in terms of capturing any emergent learning. Connected ideas between differing sources were noted on the physical materials and any opposing or interesting viewpoints were also researched from the initial source. A critical analysis of each text identified the reliability and validity of the literature to the research, as well as deficiencies, with a synthesis of the literature and the identification of any connected themes between the literature being a core part of the review process (Torraco, 2005).

An active process of locating differing and opposing perspectives was also an important feature of the literature search and so a range of techniques for searching using different variations of the search terms, dates and location of publications were used to look for and

find both the expected and unexpected. Related avenues were included where there was clear evidence of a connection to the main themes and/or where specific critique or opposing viewpoints were provided. For example, this approach meant that reviewing journal papers related to emotions in leadership (including in the context of higher education) were included, and whilst some exploration into elements of emotional intelligence was also undertaken, where literature became too far removed from having direct connectivity to leadership practices, this was excluded. Similarly, case studies of leadership in higher education in countries such as Australia and the USA were reviewed and considered in terms of applicability within an English context. Case studies from other countries which had a cultural heritage and operating environment that seemed very different were considered more carefully in terms of validity in an English context. Exploration prompted by the emergence of the research findings also led to additional areas of focus being reviewed, including topics such as senior leadership teams, systems thinking and systems leadership, and dialogic organisations. Foundational research was reviewed and cited where this was felt to underpin key arguments or support the basis for emergent areas of research.

This literature review chapter is broken into sections aligned to the research fields highlighted. The first section explores the evolving nature of the higher education sector, including the changing landscape that HE institutions are operating in, within the United Kingdom specifically, and also considering the global context. It considers the shifting relationship and influence that stakeholders have on the sector, including the increasing voice of the student population.

The second section considers the continued emergence of leadership theories and models and their applicability to the higher education sector. It also considers the particular dynamics of academic leadership, specifically at senior leadership level. An additional perspective in this leadership narrative is a glimpse into aspects of team leadership and the tensions at play in terms of the transition of leadership theories to incorporate more team-based approaches, and the impact this has when considering team dynamics.

The third section reviews in summary the field of the complexity sciences, considering its relevance to the social sciences and the higher education sector, whilst the final section introduces and explores aspects related to complexity thinking and mindsets, and organisational maturity. The chapter summary integrates and synthesises key elements from across each of these research fields.

2.2 An evolving higher education environment: Universities and the HE sector

2.2.1 Introduction

The first section of this literature review considers the literature relating to the higher education context, particularly related to universities in England. It outlines the evolving nature of the sector, what this has meant in terms of the role and purpose of universities, and also considers the changing role of students and other stakeholders. Consideration of factors related to research and knowledge exchange, the digital agenda, and reference to the impact of a global pandemic on the sector are also provided.

2.2.2 The changing landscape for universities: distinctiveness, purpose and the marketisation of higher education

This section focuses primarily on changes that have impacted the HE sector in England, although wider impacts are also noted. Shattock (2012) highlights that policy and funding changes have been on-going since the post war era with the transition of HE from being semi-autonomous to having a much greater level of public scrutiny. The physical shape and nature of the sector changed in the 1960's with the introduction of new universities, in the 1970's and 1980's with the formation of polytechnics, and significantly with the unification of the sector through the Further and Higher Education Act (1992). Changing governance in the 1990's and 2000's saw the continued implementation of the principles of New Public Management (NPM) (Hood 1991). This included the creation of the Higher Education Funding Council for England (HEFCE) which meant funding was more closely controlled and monitored. The introduction of the Research Assessment Exercise (RAE), variable tuition fees, the creation of the Quality Assurance Agency (QAA), and the control of student numbers by the Treasury, all providing greater scrutiny of university operations,

representing a further step towards greater public governance of universities (Shattock, 2008).

The policy landscape for the HE sector has also shifted significantly, with the publishing of the government's White Paper, *HE: Students at the Heart of the System* (BIS 2011). Following on from this, the government's paper *Success as a Knowledge Economy: Teaching Excellence, Social Mobility and Student Choice* (Department for Business, 2016) encouraged greater competitiveness as a way of improving teaching quality and excellence. It re-enforced the notion that graduates were central to economic prosperity, seeing the growth of the knowledge economy as a key driver for this, with universities now considered to be part of this knowledge economy.

Molesworth, Nixon, and Scullion (2011) introduced the notion of the 'marketisation' of HE, i.e. an increase in the number of political and economic factors that have led to greater competitiveness between HEIs and a fundamental adjustment to the relationship between academics and students to that of service provider and customer. Whilst marketisation has polarised views across the sector, policy drivers suggest that it is likely to remain into the future. Certainly, many of the pressures facing the sector, including issues related to staff workload, staff contracts, reported student grade inflation, and debt-laden students and universities, have been attributed to the marketisation agenda that has created increased internal competition across the sector.

A rapid move towards a greater commercial emphasis has also escalated over the last decade, as discussed by a range of authors including Nixon (2010), Shattock (2008) and Temple (2014). This change has challenged the original 'education' mission of universities

held since the eighteenth century (Engwall, 2015), as well as the long-held view that the primary purpose of HE is *"the pursuit of knowledge in a range of academic disciplines and the provision of a liberal education to an elite as part of more general aim to create a more knowledgeable and enlightened population"* (Harloe & Perry, 2005, p. 35). This evolution has led some to redefine or relabel universities as entrepreneurial, corporate, and knowledge factories (Nixon, 2010, p. 10). Others highlight the *"considerable debate regarding whether universities are in crisis, demise or merely in the process of restructuring to meet the needs of a knowledge-based economy"* (Bosetti & Walker, 2010, p. 4). This broadening of the responsibilities of universities into a more social context is a significant change to the environment that universities are operating within. How this landscape, with often competing policies and narratives around performance and focus, is translated into one institutional strategic narrative that provides sufficient heterogeneity in strategic direction, is a key challenge that many senior leaders across the sector feel ill equipped to grapple with (Holstein, Starkey, & Wright, 2018).

The introduction of the Higher Education and Research Act in 2017 established new rules and regulations for HEIs, particularly in relation to the quality and transparency of teaching, learning and research. It also set out ways in which new institutions could be awarded degree awarding powers, increasing the competitiveness of the market. The Dyson Institute of Engineering and Technology, founded in 2017, is a private HE institution offering a degree apprenticeship that directly interlinks learning and work. Google Digital Garage has also demonstrated that learning can be sourced, curated and presented in a different way, with recognition that learning is not necessarily the 'property' of one institution. Such new entrants to the HE market are providing a potential shift in terms of student choice which leaders in HEIs need to be mindful of.

In 2018, the replacement of both HEFCE and the Office for Fair Access (OFFA) by the Office for Students (OfS) provided a level of scrutiny and accountability that had not previously been experienced by many in the sector, cementing a shift from 'grant-making state' to 'regulatory state', especially in relation to teaching, admissions and widening participation (McCaffery, 2018). This latest agenda has seen universities continuing to rethink their student recruitment strategies, taking a much closer look at social mobility factors and developing more targeted approaches to the recruitment of a greater diversity of students, including in response to targets set out in Access and Participation plans. When publicising the new Teaching Excellence Framework in 2016, the Universities Minister declared that *"universities must look beyond just access….. and focus on attainment, retention rates and readiness for the ways of work so as to ensure social mobility is at the heart of our higher education system"* (McCaffery, 2018, p. 326). What this has resulted in is a significant change in the regulatory environment in which universities are operating, and with this a layer of academic and operational auditing complexity that leaders, and staff, must deal with. According to Erickson, Hanna, and Walker (2020, p. 3) *"an academic can now be ranked on more than 100 different scales and indices that measure their value".*

Although writing more than 20 years ago, Newby's analysis of the sector (Newby, 1999, P.110) highlighted that *"the structure of British higher education is now considerably out of line with its newly acquired functions and purpose"*. This referenced the growing tension between changing government/policy drivers and individual institutional strategies and structures that many universities have been grappling with. Collini (2012, p. 59) concurs, suggesting that changes to the governance, funding and assessment of universities has *"fundamentally altered not just the conditions in universities, but the very sense of identity*

and relation to one's work". Martin (2016) also suggests that the changes experienced over recent decades have been introduced incrementally and by stealth, leading to very immediate and reactive changes to individual issues and policies rather than the sector being able to take a broader more holistic view.

With much of the literature suggesting that the changing nature of the sector has been driven by those 'outside' the sector, it is interesting that Molesworth et al. (2011, p. 234) conclude that all stakeholders, including academics and students alike, have had a part to play in the development of the sector. They suggest that the sector needs to adopt a greater level of transparency, accepting that it remains primarily publicly funded, and that the sector *"restate the intricate relationship that exists between scholarly research and good teaching and learning practice".* They highlight the need for academia to be open to being transformed, taking bolder steps to reshape, restructure and create new roles for themselves either locally or globally, potentially with greater differentiation, stratification and imagination.

What the literature suggests is that the traditional focus on intellect, scholarship and academic endeavour is becoming increasingly more difficult to re-imagine in this new landscape, with universities having to consider much more carefully and imaginatively the balance between research and teaching; new knowledge generation and income generation; sustainability and added value; bureaucracy and autonomy, and what the core purpose of each university really is. To rethink, and reclaim in simple terms, the purpose of and for higher education has become increasingly complex, requiring a much broader leadership perspective than has traditionally been the case (Nixon, 2010).

2.2.3 The changing role of students: as customers and consumers

In recent years, the role of the student has been shifting, shaped by students themselves, the changing world in which they are living, and the changing demographic of the student population. The rise of consumerism, the marketisation of the higher education sector, and the growing role of students as consumers has created some of the most significant debates in the sector (Baker & Brown, 2007; Molesworth et al., 2011; Shattock, 2010). The introduction of student fees and the requirement for students to personally fund their courses has shifted the purchasing power, reinforcing this 'trading' relationship, and a litigious culture when this relationship goes wrong (Baker & Brown, 2007). As a result, the student (or customer/consumer) has become a central tenet of organisational decision-making, arguably forcing a stronger focus on service quality. New tools have been introduced which seek to evaluate and report on the quality of teaching, as measured through the Teaching Excellence Framework (TEF) and the National Student Survey (NSS). Students as stakeholders in the decision making and governance of universities has therefore gained in significance.

What is also becoming increasingly important from the student perspective is what is to be gained as a result of the education experience, where *"….its value lies not in itself but in what it can be used to gain. An education that has to be purchased at great expense is purchased for a purpose, and that purpose is what it will earn. At the very least is must pay for itself"* (Hussey & Smith, 2012, p. 46). The achievement of a degree could therefore be viewed as a 'rite of passage' into enhanced working opportunities, becoming a key driver for students as prudent consumers. However, Tight (2019) suggests that massification has seen a rising number of graduates and that the graduate premium is not as great as it had been in the days of elite higher education. Nonetheless, the UK economy has become more

graduate-focused, providing continued, albeit competitive, opportunities for students. Although according to Knight (2019, p. 14), over the period through which massification has taken place, there has been *"both a homogenisation of the vocabularies and a proliferation of discourses"*. She describes that no university wants to be seen as offering a lesser degree than any other, so there has been a shift in language focused away from course content towards graduate employment, and a 'deceptive openness' of what is actually being offered. She suggests that differences in language emerging that require insider or prior knowledge mean that the landscape within which students are making their choices is becoming increasingly challenging, and the responsibility of senior leaders to reduce any structural inequalities should be a key area of attention.

With the Augar Review (2019) and the Skills for Jobs White Paper (2021) also linking more closely the role of learning and better employment / salary outcomes (potentially favouring technical learning delivered through the Further Education College network), the suggestion of the development of micro-credentials and lifelong learning is also something that could be a focal point for the future (McVitty 2021). For senior leaders this reinforces the need to re-think curriculum design away from modularisation (i.e. individual academic endeavour) towards programme level approaches; re-focusing teaching communities; and shifting the emphasis from knowledge-acquisition to skills-based, learning-focused, people-orientated education (Speight, Moreira, & Husebo, 2020). The development of shorter qualifications that focus on technical, soft and citizenship skills to meet the needs of the job market could therefore be a future possibility, with 'education' becoming a much more complex commodity which also encompasses preparation for life. Research by Gravett, Kinchin, and Winstone (2020) highlights the tension that senior leaders have between the deep-seated values of transformative education and the commoditisation agenda. This

poses structural, cultural and governance changes at institutional and subject levels, cutting across a wide range of often deeply embedded university operations which senior leaders need to be equipped to navigate and adjust.

For senior HE leaders, the need to strengthen the relationship with students and listen to their voice as active participants in the learning process and wider university life, also seems to be increasing in importance (Speight et al., 2020). McCaffery (2018) highlights that students have strongly held views about justice, fairness, global responsibilities and environmental sustainability, often expressing their views in relation to wider university agendas, such as Black Lives Matters, LGBTQ+, the use of plastics, and poverty, all of which senior leaders need to take account of, and respond to. The forthcoming Higher Education (Freedom of Speech) Bill, which aims to strengthen and extend existing legislation, will also extend duties on free speech to students' unions, as well as allowing the Office for Students (OfS) to monitor and enforce freedom of speech measures at higher education institutions. Such measures show how the changing landscape of higher education needs to be followed continually by current and future leaders.

Leaders are also needing to look ahead and consider the future relationship with, and expectations of, students. There are opportunities for personalisation using new technologies such as Artificial Intelligence (AI) (Mononen, Alamäki, Kauttonen, Klemetti, & Räsänen, 2021). The adoption of machine learning and the development of 24/7 based chat services could also provide a new dimension to the student experience, offering a step beyond the existing norms of operation, which for many leaders is uncharted territory.

The publication of the Universities UK (UUK) Good Practice Guide on Student Mental Health and wellbeing (UUK, 2015) has seen a growing focus on student health, especially mental health, with a clear shift in emphasis and expectation on universities. It indicates there should be a move from the provision purely of wellbeing services to the integrated design of curriculum and university operations which enables the on-going attainment of wellbeing, thus connecting this agenda firmly within the fabric of what is expected that HEIs will deliver as part of core operations.

However, it is also recognised that the role of students as consumers potentially distances them from the educational processes designed to develop them as independent learners, thereby putting them at odds with core learning outcomes of their programmes and limiting their role as global citizens (Baker & Brown, 2007; Molesworth et al., 2011). It potentially limits their ability to add to and be a part of the production of knowledge, as in their consumer role they are more likely to *"confirm and build on their existing sense of self as a member of a consumerist culture they have already chosen – they largely see opportunity as a way to confirm themselves into a perceived job role rather than to experiment, discover different identities or broaden their capabilities whilst at University"* (Scullian, 2014). The role of students as consumers therefore needs careful navigation and can only potentially be realised on a significantly different basis to the way this relationship is often structured now.

The cascading impact of such complex and interdependent issues to all levels within higher education institutions has resulted in dilemmas of decision-making that transcend academic and professional services roles. The role that massification has played in the growth of student numbers in UK HEIs has also sometimes been at odds with the rate at

which internal university systems, processes and infrastructure has developed, leading to a growing level of complexity that needs to be understood and managed. The implication is that a more contemporary leadership approach is required, with HEIs needing to choose a leadership strategy and set of leadership practices that takes account of these often competing factors (Khan, 2017). Today's leaders need to have a much broader understanding that reaches beyond just the 'traditional' education landscape, navigating these multiple agendas at micro and macro levels, considering ramifications and implications within and beyond their university boundaries.

2.2.4 Research, knowledge exchange and the importance of societal impact

Whilst many of the policy and financial agendas for higher education in England have centred around teaching, learning and the student experience, the role that universities play in terms of research and their wider contribution to society has continued to evolve.

The first Research Assessment Exercise was carried out in 1986, followed by an injection of funding via HEFCE in the early 2000's; the launch of the Higher Education Innovation Fund (HEIF); and later the £22m Research Capability Fund - which focused on 'emerging areas' such as nursing and art and design. The implementation of the 2010 Spending Review and the introduction of the Research Excellence Framework (REF) through which research funding was to be more tightly assessed, monitored, and funded, suggested clear support for research across the higher education sector.

According to Shattock (2012), when reviewing the research funding data, he noted that whilst it might have been the government's intention to concentrate research activity in fewer universities through these policy approaches, in fact this has not happened. Instead,

the competition for funding has been a costly industry within HEIs, with the spotlight focused on specific disciplines, and the achievement of high quality research outputs via publications becoming key drivers impacting on internal policies, processes and behaviours (Martin, 2016). It could therefore be suggested that these policy changes have added to, rather than reduced, the complex landscape that higher education leaders are dealing with.

For many universities, in particular the more established research-intensive universities known as the Russell Group, the value of research to wider academic endeavour and university reputation has remained paramount. There is clear recognition that research plays a significant part in new knowledge development, being enhanced and augmented through interaction and exchange with other researchers, industries and governments. All of which drives knowledge growth and ultimately economic development (Temple, 2014). The alignment and integration of research and education is therefore recognised as needed, although it can be challenging to achieve. Clark (1997) outlines differing approaches to this. The inclusive model (where teaching and research groups work together) seems harder to sustain currently, with pressures on research funding and academic workloads. The approach where a university teaching unit connects with a non-university research group is also currently challenging, with potential conflict arising as a result of the increasingly disparate expectations exhibited by the university, the individual academics, and the other stakeholders involved (Coaldrake & Stedman, 1999). For senior leaders this can therefore lead to challenges in setting a clear direction in terms of approaches to research partnership working; in developing clearly defined and effective/efficient processes; and in aligning internal resourcing alongside the expectations of achieving externally set targets.

With research and education continuing to grow as a global phenomenon, English universities also face additional barriers to engaging with such growth as a result of Brexit. With implications for EU nationals working in the UK now having to apply for 'settled status'; changes to who is eligible for home fee status from the 2021/22 academic year; EU students having to navigate new visa rules and requirements; the increased burden on students to pay the Immigration Health Surcharge; and uncertainty over future research funding eligibilities; the landscape has become increasingly complex (Oliver, 2021). All of this has had direct implications for both the achievement of research impact and the potential enrichment of the education experience, making competitiveness and the attainment of league table positions (through which HEIs are also judged by different stakeholders) difficult to maintain, adding an additional burden of complexity to senior leader decision making.

Moving from an institutional to an individual perspective, Palfreyman (2017) posits a view relating to the individual academic challenges that these policy changes have created. He recognised that academic staff who may have traditionally undertaken 'curiosity-driven' research in an area of personal interest that may have had longer-term value, may now find this at odds to the quite different drivers that require evidence of more immediate research impact and/or the linking of research directly to teaching. For senior leaders in such institutions, particularly senior academics, the on-going challenge of how to enable busy academics to effectively balance the tension of personal aspiration and research passion with achieving both high impact research alongside excellence in education and the student experience is an increasingly complex task. Whilst many academics do this daily, not all are suited to, aspire to, or have the time to excel in all areas, and yet many find themselves in a position where this has become an expectation of their academic role.

This is increasingly providing senior leaders with complex workload, work planning and workforce planning dilemmas that have many moving parts to be reconciled. Alongside this the competition for global research talent has been heightened and the need to deliver on all agendas ever present.

Despite this on-going turbulence, universities continue to be bastions of what has been termed the 'knowledge society', remaining at the forefront of many research breakthroughs. There is a recognition that there are many sources of knowledge readily accessible, and yet it is not simply access to this information or knowledge that is important, it is the meaning and sense that is made from it that is critical. Universities are seen as critical players in this sense making process. *"Information put to work…. It is what enables people to make judgements, create new products, solve problems and interpret events"* (McCaffery, 2018, p. 17). The introduction of the Knowledge Exchange Framework (KEF) in 2020 has been seen as supporting this agenda, although it also signalled government concern that HEIs were not having a great enough impact on society. What the KEF outlined were a range of engagement opportunities that universities should be implementing and embedding within university operations, curriculum and research endeavour in order to achieve a greater societal impact (Johnson, 2020).

In addition, the civic and societal agendas of universities have also increased in significance, with a greater focus on driving forward both local and global social missions, although not all universities are choosing to prioritise these agendas fully (Grant, 2022). Driven particularly through research by exploring topics such as the investigation and eradication of modern slavery (Bales et al., 2018), HEIs also recognise the responsibilities they hold in developing the moral and social skills of their students, as well as in business innovation

and economic and social development. As Goddard, Hazelkorn, and Vallance (2016) highlight, these new demands are requiring universities to work in new ways, to navigate new forms of multi-disciplinary and trans-partner working, and to navigate the tensions between the universities' external civic role and the internal processes that are heavily influenced by the higher education policy environment in which they operate. Deep rooted within this they conclude is the need for a renewed sense of purpose and a connection between global and local roles. Such institutional change they suggest requires *"a messy process of negotiations with external stakeholders locally and nationally"* which requires the development of 'boundary spanning' skills for leaders (Goddard & Vallance, 2011, p.16). Cribb and Gewirtz (2013, p. 338) offer a note of caution however, suggesting that UK universities are at risk of becoming *"institutions with no distinctive social role and no ethical raison d'etre"* if they do not focus more fully on this agenda. Once again, this additional area of focus adds potential complexity to the mix for senior leaders to navigate.

When faced with the emergency arising from the Covid-19 global pandemic, the ability for researchers to reach across institutional, country and continental boundaries, sharing knowledge, data, expertise and energy tirelessly for the sake of society and the survival of humanity, has demonstrated the strong passion that remains for research endeavour. In their paper visualising the Covid-19 research to date, Le Bras et al. (2020) highlight how governments, scientific institutions and companies worked together to accelerate innovation and discovery in the fight against the pandemic. It will be interesting to see if there are any legacies that can be learnt and embedded by policy makers and university leaders that serve to support such future research and collaborative endeavour.

What the literature in this arena suggests is that there is an increasingly complex landscape of phenomenon that are often beyond the control of any one leader, one university or even one nation. The uncertainty created by changing national and international politics, shifts in the expectations of multiple stakeholders, and the dynamic response to a global pandemic has required individual leaders to lead beyond existing boundaries, whether they feel equipped to do so or not. The challenge for future leaders is whether they should, or could, be better prepared to face such complexities, and what might be needed to do this.

2.2.5 Complexity and the future direction of the higher education sector

The direction of the evolution of the higher education sector in England remains unclear. The inter-connected nature of the world and the step-change evolution in technology has meant the global landscape in which English universities are operating feels much smaller, with future opportunities and challenges becoming much more diverse.

In his exploration of the development of 'The University 2035', McCaffery (2018) outlines six models that could become evident as part of this evolution:

1. The unbundled university system
2. The alternative provider
3. The core university provider
4. The distributed university system
5. The post-Fordist university
6. Universities in an 'ecology of learning'

This suggests that the trend for complexity across the sector could be increasing, with an on-going impact on the way in which university leaders lead. Senior leaders will need to

increasingly navigate additional disruption and uncertainty, with the implication being that there is a need to respond with a broader repertoire of leadership aptitude.

And yet the university models or systems as suggested by McCaffrey, should they emerge, will not operate in isolation. When considering the implications of globalisation on the future trends for the sector, Peters and Roberts (2000, p. 135) observed that even at that time *"there has been a shift from distinct national economies to a global economy in which both production and consumption have been internationalised and finance capital and information flow freely"*. More recently, the political turmoil and uncertainty that was created in the UK by Brexit, as noted in the previous section, has added to the volatility that the sector has been operating in. This on-going shift in the global environment is creating new, often unpredictable, and certainly unchartered experiences for many senior leaders in English HEIs, many of which require different types of leadership thinking. Any changes to the shape of 'The University 2035' needs also to be considered, and developed, within this globalised context.

The latest global disruption for the sector has been the Covid-19 pandemic. This led to profound changes to teaching, learning and university operations, including the acceleration with which digital technologies have been employed to enable distance and online learning. What the pandemic has potentially accelerated is what the Institute for the Future (2013) called an 'emerging learning ecology', where mobile technologies present the opportunity for there to be a transformation away from learning organised around stable hierarchical institutions to an environment where learning is conceived as a flow, with learning resources widely available, shared and available to all continuously. Whilst it

seems unlikely that universities will adopt this modus operandi as a default operating model in the future, there seems potential for transition.

Conversely, whilst Strielkowski and Wang (2020) describe the transition of universities through the three initial phases of medieval; research 'Humboldt-type'; and entrepreneurial; moving now to a fourth phase of online and digital, they recognise that for both staff and students this is not necessarily the learning experience that either want. They note that *"many young people who were born with smartphones clutched in their fists and who would rather live without running water or electricity than without Internet, often tend to prefer being lectured by real professors in real classrooms"* (Strielkowski & Wang, 2020, p. 441). And so, whilst digital acceleration as a current and future trend is likely to continue, it is the responsibility of university leaders to ensure the shaping of such a digital agenda remains in line with stakeholder needs.

The indication from such future trends, and insights gained throughout the pandemic, suggest that university leaders need to demonstrate leadership through uncertainty; they need to make decisions based on the needs of a much wider set of stakeholders; and they need to be equipped to know which future trends to follow with vigour, and which to follow with caution. Leading into and through the unknown, with much broader insight and oversight, seem once again to be called upon as necessary leadership practices.

2.2.6 Section summary

Growing global competitiveness and a shift in global economies; financial, political and regulatory changes in England causing uncertainty and volatility; a changing student demographic; an increase in competition in order to widen participation; a shift towards vocationalism and the application of skills and learning within a knowledge economy; the relentless focus on the accountability of higher education institutions, particularly through new research and teaching regulatory frameworks; and the impact of recovering from a global pandemic, all point to a higher education sector that is in a constant state of complex change.

There appear to be no clear answers as to how higher education institutions should react and evolve in response to such events in the future. What is certain however, is that higher education senior leaders, as key decision makers, will need to continue to examine and make choices about the lessons that can be learnt and the adaptations that could be made, whilst preserving the very essence of universities and their societal role, adopting an ever more purposeful approach to senior leadership practices. Decision making based on a much wider analysis of differing stakeholder perspectives, more considered attention paid to the internal and external tensions created by this shifting and complex context, and the health and wellbeing of university communities needs to be nurtured authentically (Tucker & McVitty, 2019).

2.3 The changing nature of leadership: re-thinking leadership in Higher Education

2.3.1 Introduction

A key focus of this thesis is the development of new insights for senior leadership for one higher education institution in England. Having explored the context of the higher education sector, attention now turns to the concept of leadership. This section provides brief insights into the evolution of organisational theories and models and the impact this has on leadership; it explores some of the latest leadership approaches, including considering the concept of leadership practice; and reviews leadership in the context of the higher education sector. The changing nature of academic leadership is also considered, particularly at senior and Vice Chancellor level, and the emergence of the significance of leadership teams is outlined. Finally, the section concludes by considering what the future might hold for university senior leaders.

2.3.2 The evolution of organisational theories

This research seeks to bring together individual, organisational and environmental factors, reflecting on the inter-relationship between them. It is therefore important to consider how organisational as well as leadership theories have evolved, recognising that historically they have often been reviewed independently, although more recent work has seen them as inter-connected and influenced by multiple changing factors (Crowther and Green, 2004). This section summarises how organisational theories have developed over time, demonstrating that there are established roots from which Complexity Leadership Theory, a key organisational theory that has informed this research, has emerged.

One of the foundational thinkers of organisational theory was Weber, who highlighted that bureaucracy was a defining part of organisational design in a modern society (Weber, 2009). He drew from a background informed by politics, economics and religious values, bringing to social theory a highly nuanced analysis of how different social processes interwove with each other. A focal point of his work was *"the consequence of human actions and how these human actions were constrained by the limits imposed by a variety of social powers"* (Madan, 2014, p. 96). With his interest stemming from the historic development of the rationalised economy and how social spheres such as religion, politics, and law all contributed to or constrained this, his extensive writings considered the various forms of power and domination and how this manifested itself. He argued that the 'market' was not a neutral or free zone, rather it was being shaped by a constellation of factors. He also used the term 'authority' to refer to situations of power where legitimacy was available, arguing that shifts in power from personal 'patriarchal authority' to more impersonal 'patrimonial authority' rested in the rules and regulations of bureaucracies, which was becoming more dominant at the time he was writing around the turn of the 20th Century. Additionally, he recognised ambiguity as fundamental to the human condition, being both influenced by, and an influencer of, surrounding social constructs (Samier, 2002).

Weber's views were in contrast to the later views put forward by Weick (1995). Where Weber argued that organisations were 'iron cages' which required bureaucracy, rational decision making, rules and regulations to function effectively and efficiently, Weick introduced the notion that organisations are fluid and continually evolving. His book *Sensemaking in Organizations* (1995), proposed a framework to explain how individuals made sense of their environments, particularly in times of crisis. He preferred the term

'organising', rather than 'organisations', and introduced the concept of tight and loosely coupled organisations (Weick, 1995). He also described sensemaking as a phenomena that is socially constructed, dependant on individual cues and the development of plausible meanings (Maitlis & Sonenshein, 2010). He acknowledged that to make sense particularly of crisis there was a need to organise and understand by assigning different meanings and using different language. Weick suggested that sensemaking is *"never-ending and each new sensemaking event is triggered by uncertainty or ambiguity, which causes us to find meaning"* (Mills, Thurlow, & Mills, 2010, p.10), thus connecting more fully the dynamics between the individual, the organisation and the environment.

A further development has been the application of systems thinking to organisational theory, made popular by Senge (1987). His work expanded previous discourses and applied them into management practice. Recognising the importance of non-linear and dynamic complexity that demands individual and organisational models of learning, Senge and Sterman (1992) highlighted that traditional mental models and learning skills of managers were ill-suited to effective management in such a complex environment. They suggested that there needed to be more opportunities to reflect, experiment and practice learning in both real and 'virtual' worlds, with simulation or learning laboratories becoming an important tool for learning.

These brief summaries highlight the ways in which organisational theory has continued to develop, recognising that there is no one way to perceive, enact or lead organisations. Indeed, by the mid 1980's, Gareth Morgan's 'Images of Organisations' (1986) described multiple different metaphors for how organisations might be conceptualised, illustrating the shift away from a singular notion of organisations as rational Fordist machines.

Complexity Leadership Theory (CLT), developed by Uhl-Bien, Marion & McKelvey (2007), has been selected as a core conceptual framework for this study because it can be seen to integrate disparate elements of organisational theory, including the work of Weber and Weick. Uhl-Bien and colleagues recognised the need for both formal and informal structures, and leadership as a process that needed to span beyond hierarchical boundaries within and across organisations. Their development of CLT, which is outlined further in section 2.4.5, considered both organisations and individuals as complex systems in their own right, which act, interact and influence one another. They highlighted the need for a more tightly coupled 'administrative' system where bureaucracy and rules are important, as well as a more 'entrepreneurial' system where freedom to make meaning from emergent ideas is also valid. In the centre is the space for bringing ideas into action. What Complexity Leadership Theory recognises is that there are multiple complex systems within which leadership is enacted, highlighting the need for multiple dimensions to leadership thinking and practice.

2.3.3 The evolution of leadership theory and practice

The journey of leadership theories from 'command-and-control' leadership of the 19th Century, through to the behavioural and situational theories of the 1950s, transactional theories in the 1970s, and transformational theories of the past two decades highlight complex changes in the conceptualisation of leadership (Black, 2015). Western (2019) also introduces the notion of leadership discourses as *"a set of ideas, attitudes, courses of action, beliefs and practices that systematically construct the subjects and the worlds of which they speak"* (ibid, p. 153) suggesting that there have been four main discourses since the 1940's: Controller (efficiency and productivity); Therapist (relationships & motivation);

Messiah (vision & culture); and Eco-leadership (connectivity & ethics), with all discourses remaining present in the contemporary landscape.

Leadership research has progressively developed, with new theories, models and concepts emerging. From individual trait and competency theories, to a focus on leadership styles and situations, to more collective and enabling theories where leaders enable rather than control (Day, Fleenor, Atwater, Sturm, & McKee, 2014; Plowman et al., 2007; Turner & Baker, 2018). With a notable increase in leadership research over the last decade the topic seems to be attracting continued attention, with Dinh et al. (2014) citing 65 theories that have been discussed in the literature between 2000 and 2012. They highlight that there is an increasing focus on strategic leadership approaches in the emergent leadership theories, noting the shift from dyadic or power-based theories which focus on individually held and dispersed power, to a greater recognition of context, system and overall organisational effects of leadership. Similarly Davis (2014) notes that contemporary leadership discourses recognise the limitations of studying leadership within one organisational context and/or in relation to one individual, highlighting the reach beyond these boundaries to enact more distributed practices.

In his exploration of leadership theories in academia, Bolden et al. (2012) cites Action Centred Leadership as developed by Adair (1973), as well as global leadership (House, Hanges, Javidan, Dorfman, & Gupta, 2004), transformational leadership (Bass & Avolio, 1994), charismatic leadership (Northouse, 2004) and quiet leadership (Mintzberg, 1999). Values driven leadership (Barrett, 2013) and eco-leadership (Western, 2010) also speak to a much deeper and wider leadership discourse. These differing theories suggest there has been a more substantial leadership frame of thinking and responsibility brought into view

over recent years, i.e. beyond the individual and the organisation to consider the community, wider society and ultimately all of humanity. And so, what this evolution of leadership thinking suggests is that rather than being purely an individual endeavour, there is a much greater connectivity to the concepts of organisational theory and an impact and interaction with the wider environment. Similarly, Heifetz's work on adaptive leadership (Heifetz & Heifetz, 1994; Heifetz, Heifetz, Grashow, & Linsky, 2009) considered leadership more as a process rather than a set of individual personal capabilities; recognising that new environments demand new strategies and abilities; and that organisational adaptation occurs through experimentation.

Many of the leadership theories developed in the past have traditionally been leader-centred, placing the phenomenon of 'leadership' within distinct individuals (Crevani, Lindgren, & Packendorff, 2010). Whilst the latest commentaries introducing theories of collaborative, distributed, integrative, shared and systems leadership (Bolden, Gulati, & Edwards, 2019) have seemed to widen this perspective, there remains much debate about what leadership actually is. Alvesson and Spicer (2012, p. 5) note that *"there is notoriously little agreement about how exactly we might define leadership"* suggesting that many authors do not actually settle on a definition, whilst those that do define it in many different ways. In his exploration into understanding this landscape further, Grint (2010, p. 4) offered four typologies which added additional dimensions:

- Leadership as *position*: is it *where* 'leaders' operate that make them leaders?
- Leadership as *person*: is it *who* 'leaders' are that makes them leaders?
- Leadership as a *result*: is it *what* 'leaders' achieve that make them leaders?
- Leadership as a *process*: is it *how* 'leaders' get things done that make them leaders?

There has also a been a greater focus on the importance of the relational aspects of leadership. Bryman (2007, p. 696) defined leadership as *"influencing and/or motivating others towards the accomplishment of departmental goals"*. Similarly Chaudhuri, Kettunen, and Naskar (2016, p. 395) defined leadership as *"the ability to attract willing followers and to effect change".* This correlates with other literature, such as that presented by Kouzes and Posner (2012), who confirm that leadership has at its core a relationship between leaders and their followers. However, Dinh et al. (2014, p. 53) argue that many leadership theories are *"built on retrospective constructs"* with concerns that using past data and judgements to inform how to deal with future events can be challenging, given that future events are subject to complex and on-going change. They also suggest that there is a need to look more carefully at leadership in relation to time (fast and slow) and levels (organisational layers) as there is a dynamic interplay between all of these factors, meaning that *"continuously evolving intra- and interpersonal processes can exhibit non-linear change when the consequences of leadership (or external processes) are combined over time"* (ibid, p. 53). The more recent leadership literature suggests that leadership spans beyond organisational boundaries, with a focus on networks and collective nodes of engagement (Bolden et al., 2019).

Despite these different perspectives, what seems to remain clear across all the literature is that 'leadership' is important. Fineman, Gabriel, and Sims (2009) defined leadership as *"imagining, willing and driving, and thereby making something happen which is not going to happen otherwise".* Their definition positions leadership as concerned with the activity, or practice of leading, this being less about what leaders 'have' and more about what leaders (or people) 'do' – the act and action of leadership. Radcliffe (2012, p. 161) even suggested that a simpler definition was that leaders *"are up to something"*. Potentially

these could encompass all of Grint's four typologies if collated together, rather than each dimension being seen as distinctive of each other. Weick's work on sensemaking, as outlined in the previous section, also supports this notion of active leadership, as leaders engage in collective social learning, which enables deeper learning and reflective practice to take place, enriching leadership lessons. It is an on-going process linked to deliberate action.

It is this active sense of leadership practice that is a key area of interest for this research. This focus on leadership practice sits more comfortably when considering leadership and complexity. In this context the focus switches from how leaders can navigate through organisational complexity using visioning and inspiration and the personal qualities they need to have to do this, to considering how they support and enable both the organisation and its people to be adaptive to complex challenges and changes. Leadership in this sense is about cultivating the organisational conditions through which adaptability can flourish. For this a certain level of leadership ambidexterity is needed in terms of the leadership practice displayed (Plowman et al., 2007; Uhl-Bien & Arena, 2018).

2.3.4 Leadership and management in higher education: dilemmas and debates

There is a significant body of research into leadership and management in higher education, particularly in relation to specific HE leadership groups such as academic leaders (Bryman, 2007; Evans, Homer, & Rayner, 2013; Gmelch & Buller, 2015; Lumby, 2012; Macfarlane, 2013; P McCaffery, 2018; Tight, 2012). Despite this, there appear to be multiple definitions in terms of what academic leadership actually means (Lumby, 2016). The notion of academic leadership and administrative leadership is also contested, and there is even suggestion that leadership is perceived as absent or not overt (Dearing, 1997;

Deem, 2006). Macfarlane (2013) highlights the difference in language often used within the higher education sector in relation to leadership, noting that for some the transition can be from *"scholar leader"* to *"manager"*, with university leadership roles often seen as 'administration'. Although as McCaffery (2018, p. 1) notes *"Management is a punishment from God"* with few in higher education now being able to say that they have not at one stage had 'management' as part of their role, and for those that have not – usually those in the wider university community – a gulf can arise between 'us' and 'them'.

Reflecting on Weber's work when he considered the modernisation of academia in Germany, Samier (2002) highlighted that educational leadership is problematic for several reasons. He recognised the traditional scholarly ethic of scholarship, or 'inner calling' where an individual demonstrated personal devotion to a specialised subject can be at odds with the more modern requirements of academic leadership. As a scholar there needs to be a level of detachment from value propositions with little scope for compromise, whereas an academic leader (as academic organiser) needs to be able to compromise and take on a more corporate role. However, he did not see these as being mutually exclusive, with different professoriate exhibiting leadership in different ways: those who lived 'off' politics; those who lived 'for' politics; those who 'gained income from' politics; and those who sought to make 'meaning and purpose' (Samier, 2002). He believed that 'intellectual leadership' was needed to combat the practical point of view of policy makers in order to re-establish the moral fabric of universities.

Interestingly there seems to be less published in terms of professional services leadership in higher education, although Black (2015) highlighted the increasing importance of professional services departments in the provision of services that support the wider

student experience, such as student services, accommodation, sports facilities and student finance, as well as other areas that support the functioning of universities. He noted that leaders in these areas are generally more focussed on delivering operational efficiencies, although suggested there is a real need for a much more integrated working arrangement between academic and professional services departments.

The idea of a career in 'management' appears therefore be one that sits parallel to the leadership of education or research, or it could sit wholly within professional services, meaning that the terms 'leadership' and 'management' in the HE sector can be somewhat confusing. Even though other parts of the education sector have seen a transition in this language, from administration to management to leadership, higher education has yet to find a way of being comfortable with these terms (Gunter, 2016). McCaffery (2018) also recognises that the long-upheld separation between academic leadership and policy making on the one hand and policy implementation and administration on the other is changing. This suggests that there is a shift from what could be described as academically autonomous leadership operating within a collegiate leadership approach, to the emergence of professionals who are career-manager academics and professionals (Burnes, Wend, & By, 2014; Deem, Hillyard, & Reed, 2007; Smith, 2005).

The changing nature of the higher education sector, as described in the previous chapter, highlights the tensions in what is expected of universities, with conflicting demands leading to multiple points of focus. In many ways there is therefore an argument to suggest that it is not one approach over another that is needed in leadership terms; there is actually a place for many approaches. Considering how they can co-exist in a symbiotic way could be the critical challenge. Although located in the HE sector in Malaysia, Roha, Jais, Yahaya, and

Ghani (2020) suggest a competency framework for HE leaders which incorporates the need for personal effectiveness, cognition, leading, impact and influence, and achievement and action – all of which could be argued to transcend the individual notions of academic and professional services leadership.

Reinforcing this message in her latest book *Managing Leadership Paradoxes,* Luscher (2019) confirms that good leadership isn't found in 'either-or' thinking. Her perspective is that leaders need to create meaning from the paradoxes that they face and the key to living with such paradoxes is understanding them, thus increasing awareness about apparently contradictory and ambiguous aspects of organisational life. Similarly Doyle and Brady (2018, p. 311) suggest that leadership *"is defined as the capacity of any system to sense and shape its future and a leader is any person or group that initiates change or innovation"*, with leadership firmly anchored in the process of change which could be diffused or distributed. They highlight that whilst there is a continually changing environment that places contrary demands on the sector in terms of regulations, targets, policies and stakeholder expectations, an emergent model of distinctiveness and diversity needs to be found.

Within this a key question remains as to whether Vice Chancellors as the most senior of university leaders should be recruited from purely academic leadership areas or might there be a tipping point towards adopting a more commercial CEO type of role? (Bolden et al., 2012). Certainly, there is an indication from trends in the United States that the landscape may be changing. Here there is a recognition that *"the modern president's work involves duties for which most professors are neither trained nor prepared"* (Beardsley & Hills, 2017 p. 5). The implications for what this might mean for the next tier of senior

leadership, and the wider cultural implications for universities in the UK, are therefore important considerations.

2.3.5 Vice Chancellors and senior university leadership teams

In the majority of English HEIs, including this case study university, Vice Chancellors have historically been key figureheads and influencers. Often they have had a dual responsibility for representing and symbolising their university externally as well as modelling the principles of the institution internally (Astin & Astin, 2000; Kouzes & Posner, 2012). Promotion to senior management positions from within the sector on the basis of academic prowess has traditionally been the main route to becoming a Vice Chancellor (Yielder & Codling, 2004). In the 1960's the role was styled as a *"chief-academic and administrative officer"* (Smith, Adamd & Mount, 2007, p. 11), although they have also been described as initiators, mediators and managers of a large organisation, and more latterly as institutional and intellectual leaders (Bargh, 2000; Macfarlane, 2013).

Whilst the evolution of the role of Vice Chancellor has shifted from having symbolic, procedural and often charismatic power as deputy to the Chancellor, to being a key figure of collective decision making, co-ordination and the active administration of universities (Bargh, 2000), for many the significance of the need for academic leadership credibility has remained. Whilst insights into the leadership styles, behaviours and traits that shape the role of Vice Chancellor as academic leader continue to be important areas of attention, there has been far less research into the next level of leadership across HEIs – that of senior leaders and senior leadership (or top management) teams, which is the primary focus of this study.

Considering senior leaders first, Kezar et al. (2006) bring together a range of insights reflecting the types of traits and behaviours that senior HE leaders need. Whilst this research includes reference to the US higher education system, there are parallels that can be drawn and in fact lessons that can be learnt, given the US HE system has historically provided trends which have then emerged in the UK. Similarly a wide range of leader behaviours and competencies in HE have also been outlined by Macfarlane (2011), Spendlove (2007) and Thian, Alam, and Idris (2016). What the research indicates is that leaders have a specific range of traits such as courage, strength, intelligence, confidence etc. Latterly there has also been a recognition of the need for developing a broader range of skills in line with the more multidimensional dynamics of the leadership role, for example Tucker and McVitty (2019) recognise that the changing nature of the sector also requires *"leaders who are exceptionally capable in multiple domains, intellectually, strategically and emotionally".*

Despite a recognition that these broader relational, visionary and integrative behaviours and competencies are needed, it remains the case that academic credibility and citizenship still feature as key requirements. Having an academic and intellectual reputation for scholarly achievement is seen as critical if the respect of faculty members is to be gained (Macfarlane, 2013). The significance of the need to be active in research, publishing and teaching were also viewed as important attributes. In research intensive universities Goodall (2006) proposes that better universities are run by better researchers. This reputational value of renowned researchers within the academic community is viewed as adding to the reputational value of the institution and enhancing powers of negotiation, internally and externally.

In terms of senior leadership teams in higher education, a recent study by Kezar, Dizon, and Scott (2019) reviewed the limited literature on this topic, noting a striking lack of research in this area. They suggest a range of developments are needed, including reviewing team composition; vision, goals and direction; team planning; team coaching and development; the role of team members; team relationships and dynamics; and the leadership of teams. They also recognised that few studies have focused on the impact and influence of the external environment and suggest this needed closer scrutiny. Reviewing senior leadership teams in the context of operating as part of a wider organisational and sector wide system, as this study seeks to do, should therefore, in part, fill this research gap.

Although their research focused on secondary school environments in Australia, it is interesting to note that Barnett and McCormick (2012, p. 653) highlighted the *"innate complexity of leadership conducted synchronously by a collective"*. They concur with the idea that leadership is transitioning from being leader centred to team centred leadership, with a sharing of responsibilities and the need to develop leadership capabilities amongst all executive staff. Their research also highlighted the significance of sense-making and sense-giving as critical aspects of the shared mental models that executive teams need to have, supporting the work of Weick as noted earlier. Similarly Wageman, Nunes, Burruss, and Hackman (2008, p. 311) talk about *"the changing ecology of teams"* recognising that *"bounded and stable membership is less and less the norm as teams become more dynamic and are frequently overlapping"*. They describe how teams are increasingly self-leading, leading organisations as well as being created when complex problems arise. This idea of a self-functioning team has been defined by Neumann (1991) as 'a thinking team' which should be analysed as cognitive systems that reflect internal tension and balance; that can stimulate personal and organisational learning; that can be both assets and liabilities; and

that can be a key ‘missing link’ in the study of organisational and leadership effectiveness, bringing back into focus the longstanding connection between leadership and organisational theories.

Returning to consider UK HEIs, Woodfield and Kennie (2008) undertook one of the more in-depth studies, being informed by a two-year investigation into different ways that universities organise their top or senior management structures. They noted that terminology and definitions across the sector in terms of who and what was meant by ‘top’, ‘management’ and ‘team’ was problematic. They highlighted the issues with interpretation, of corporate connotations, and confusion as to which group of leaders this definition applied to. There was also a recognition that there was a prevalence of individualistic working rather than collective or mutual accountability; that leadership teams generally tended to be larger than outside the sector, although there was an overarching recognition that the challenges related to effective team working in higher education had similar parallels to top teams elsewhere. Leadership styles, organisational cultures and structures were all seen to influence the nature of how top teams worked, indicating that the power of both formal and informal networks can have both positive and negatives impacts.

With this research considering individual, organisational and wider factors at senior team level, and how this affects leadership practice, understanding the implications of the power vested in those at senior leadership levels, how this has been established, (and how it is changing) and its impact on relationships within and across higher education institutions, could offer interesting insights. Consideration of power, authority and the leadership of universities is therefore worthy of review.

2.3.6 Power, authority and leadership in higher education

According to Black (2015), one of the most typical approaches to HE leadership to date has been that identified by Astin and Astin (2000) as the hierarchy model which is founded on authority and power. Whilst individualistic and collegial models also exist, the focus has remained on the development and acquisition of personal status and professional recognition, along with which comes the enhancement of personal power and authority.

Power and influence theories as outlined by Birnbaum (1989) consider two key underpinning characteristics: leaders using social power as a one-way attempt to influence others, and leaders engaging in social exchange in a more two-way relationship that requires approval and compliance from others. Here, social power is defined as being gained through authority provided by a social or legal system, or through authority to give reward or punishment, or through perceived expertise and influence over others. Social exchange is defined more through mutual influence between leader and follower, with reciprocity of relationship and the leader meeting the needs of followers, as long as the followers provide approval and compliance for the leader's demands, thus the authority of the leader is constrained by the expectations of the followers.

Research undertaken in the early 1990's reported that 71% of senior higher education leaders identified their own leadership as being focused on social power, with a clear emphasis on one-way communication in order to get others to comply (Martin, 1993). Woods (2016, p. 158), who builds on the formative work of Weber, suggests that when considering leadership in an educational context *"the most recognizable or readily acknowledged authority in most organizations is the formal hierarchical authority vested in the head of the organization and other senior leaders – a form of rational authority."*

However, it could be argued that this form of leadership has been predominant across many sectors and that it is the deployment of this leadership through governance, decision making and factors relating to the prevailing cultural norms that nuances the impact of this hierarchically based approach.

As the HE environment changes, the role of senior leaders, their individual and collective leadership practice, appears to require further clarity and articulation, recognising that there is *"a complex articulation between the person, the institution, the detailed tasks, the particular situation and the enveloping environment*" (Bargh, 2000, p. 37).

2.3.7 Section summary

As outlined in the previous chapter, the higher education sector is continuing to change and, of late, in ways that not many could have imagined. There therefore seems to be a need for senior HE leaders to bring together a wider range of key capabilities (personal, inter-personal and cognitive) in order to meet multiple needs and priorities in a way that has not been demanded in the past. Some are on this journey, strengthening and sharing governance and also bringing a variety of skills and insights together across leadership teams by recruiting senior leaders from both within and outside academia. Leaders who are able to develop and lead complex adaptive systems in times of change need to have a personal balance of both confidence and humility, and a clear focus on the practice and development of their own change leadership capabilities (Fullan & Scott, 2009). The emergence of the fourth generation of universities focusing on digital and online learning (Strielkowski & Wang, 2020) and the fourth industrial era (Hack, 2021) which are dominated by digital technologies and artificial intelligence, also suggests that there is a pivot point between the past and the future that leaders need to contend with.

And yet there are indications that the significance of the academic focus on the leadership role should not be left behind completely. Whilst senior leaders need to be clear on the role that *their* university plays in supporting social and economic prosperity, they should also ensure that *"the best and most precious of what the university has always stood for, is not lost in the face of the brave new, essentially pragmatic world of education in the global knowledge economy"* (Bosetti & Walker, 2010, p. 19).

Leadership of higher education institutions at these senior levels needs individuals who are prepared to incorporate a greater blend of experiences between both academic and/or research practice; commercial activity and social engagement; and the leadership of uncertainty and ambiguity across disciplinary, institutional and geographical boundaries. The leadership of, and through, complexity, leading either within or across entrepreneurial, academic, and/or bureaucratic systems requires an enhanced set of leadership practices. Complexity Leadership Theory (Uhl-Bien, Marion, and McKelvey, 2007) potentially provides a new opportunity for harmonising differing leadership concepts into one model, allowing a much more dynamic interplay of action and reaction, and connectivity to organisational structures. The possibilities this model provides for higher education senior leaders, and the insights from the complexity sciences background from which it is drawn, are considered in the following section.

2.4 Considering complexity science and the higher education sector

2.4.1 Introduction

This section focuses attention on the concept of complexity and the field of complexity science as a set of theoretical tools through which real-world phenomena can be assessed. With the complexity sciences being the central tenet of the theoretical framework for this research (see Figure 2, page 19), this section explores in summary the background and history of this field, the different perspectives offered in the literature about how complexity can be viewed, and how applicable and relevant these concepts are to the social sciences. The section also outlines Complexity Leadership Theory as a theoretical concept that is of particular interest to this research. It concludes by recognising the potential for considering and exploring complexity in the higher education sector more fully. It also considers the implications for leadership practice, recognising that caution is needed to make sure that integration and alignment with the particular features of the HE sector are necessary.

2.4.2 Complexity science and complexity – an overview

This section aims to provide a brief insight into the background and evolution of the field of complexity science, recognising that as a body of research it is vast, continuing to grow and emerge. It also explores the notion of complexity and how this has emerged and evolved as a concept over time. It seeks to point up the reasons why a focus on complexity has been a particular area of interest for this research, and how its continued development and application in practice could provide new insights for researchers and practitioners alike in the future.

Complexity science is not one single unified theory, but a worldview that incorporates perceptions of limitations and continuous exploration of new perspectives. It is the result of a multi-disciplinary movement, originally from the natural sciences, that is continuing to grow. The etymological roots of complexity and the complexity sciences has been interestingly described by Mason (2008a, p. 63). Charting the starting point for the term complexity from its Latin beginnings in the 14th century as meaning *"surrounding, encompassing, encircling, embracing, comprehending, comprising"*. Mason highlighted its later use as an adjective denoting a plural of both quantity and quality. With its application initially in physiology in the 18th century, then on to chemistry, biology and geometry, the 20th century saw its application in psychology, medicine and economics. Mason went on to chart the emergence of complexity in what he termed *"three generations of theories*" (ibid, p. 64) which whilst reinforcing the notion that scholars were continuing to try to 'organise complexity', also pointed to the notion that complexity itself was emergent. This history, which suggests that complexity science is seeking to connect and inter-connect multiple phenomena holistically, is a theory that is continuing to develop.

Brian Castellani's Map of Complexity Science(s) (Castellani, 2018) highlighted not just the enormity of this field and the many varied connected and inter-connected disciplines, but also how the field is continuing to be mapped, described and applied. From systems science and cybernetics; evolving to incorporate complex living systems, social systems theory and agent based modelling; and latterly extending to multi-level complex systems, spatial complexity and intersectionality; the field has continued to grow, extend and be applied in many different settings. It is the richness of this evolution, the breadth of this landscape, and the integration of social, biological, systems and cognitive elements that were key factors in the choice for exploring the complexity sciences as part of this research.

On exploring the field more closely, the terminology surrounding complexity science differed across the literature, although there were three main terms that were most often used. For many the term 'complexity theory' was used, for others 'complexity theories' were argued to be more accurate, whilst some referenced 'complexity science' as the defining and over-arching ontological starting point (Anderson, 1999; Grobman, 2005; Mikulecky, 2001; Morrison, 2002; Phelan, 2001; Richardson, Cilliers, & Lissack, 2001; Snyder, 2013). However, Casti (1994) provided an alternative perspective to the debate about how complexity should be defined, introducing the notion that complexity was in the eye of the beholder. He illustrated his point by noting that a stone to a layman was likely to be a very simple object, and yet to a geologist it was rather more complicated. Similarly Maylor et al. (2013, p. 46) suggested that *"Complexity is a subjective notion, reflecting the lived experience of the people involved …. highly dependent on perception and influenced by conscious, subconscious and effective factors."* This led to the suggestion that the complexity of a system was not the intrinsic property of that system, more that it depended on how the system was described and interpreted. The more complex the language, the more likely the system was to be interpreted as complex. This direct connection to individual cognition, analysis and interpretation, based on an individual's lived experiences, skills and capabilities was a key concept which had direct relevance to this research. When considered in the context of leader or leadership development this could suggest that leaders were not passive actors responding to their environment in a uniform way, but that they were actively analysing, synthesising, rationalising, sense-making and translating what they saw and the experience around them into thought and then individual action.

Drawing on this work Tsoukas and Hatch (2001, p. 979) considered that *"complexity is not only a feature of the systems we study, it is also a matter of the way in which we organize our thinking about these systems"*. It was for this reason that they suggested adopting a more narrative rather than logico-scientific mode of thinking when considering complexity in the context of organisations. As Tsoukas and Hatch suggest *"the narrative mode of thinking reminds one that behind every narrative there is a narrator. A story told presupposes a storyteller; it is not an outcome of logical necessity but a product of contingent human construction"* (ibid, p. 999). This had similarity of tone with some of the latest research on dialogic leadership and organisations suggesting that there was something of interest which may be applicable to both leadership and organisational practices.

From reviewing the research into complexity and the complexity sciences, it has been the dynamic interplay between individuals, the systems in which they operate, and the perceptions of the reality that they create for themselves within these systems that has been of interest. The recognition that complexity has social as well as systems elements has been crucial, and it is the evolution of the application to the social sciences that has been a key focus of exploration in this research.

2.4.3 The significance of complexity science to the social sciences

Since the 18th Century, systems have been scrutinised by scientists in scientific terms. Most often this had been through the lenses of physics, engineering, and the biological sciences. There was therefore experience of considering the dynamics of systems, but until more recently this had not been considered in terms of social settings. The formative moment when the paths of complexity and social sciences collided was when the Gulbenkian

Commission met in 1996 to consider the past, present and future of the social sciences. They recognised that the forward journey for the social sciences needed to be transdisciplinary, focused not on disciplinary fields but around areas of social concern and interest. Their report concluded that *"we come from a social past of conflicting certitudes, be they related to science, ethics or social systems, to a present of considerable questioning, including questioning about the possibility of certainties. Perhaps we are witnessing the end of a type of rationality that is no longer appropriate for our time. The accent we call for is one placed on the complex, the temporal, and the unstable, which corresponds today to a transdisciplinary movement gaining in vigour"* (Gulbenkian Commission on the Restructuring of the Social, 1996, p. 79). The established perspective whereby it was possible to identify connections between specific causes and effects and take specific actions resulting in specific outcomes had therefore been challenged. From this collision point emerged explorations of complexity science / complexity theory across a range of areas in the social sciences, particularly in the areas of organisational development and organisational change.

The most prolific writer has been David Byrne, who, along with colleagues has explored in some depth the applicability of complexity to the social sciences. Byrne and Callaghan (2013) argued that systems can be described by their properties as a whole and also by the way in which they relate to factors within the environment in which they are located. They posited that living systems, particularly human systems can change radically; engage both energy and matter; and adapt i.e., change as a result of the experience. As such, these systems are highly complex and constantly changing. Interestingly Byrne and Callaghan used the term 'complexity theory' although they were at pains to be clear that *"for us complexity theory is an ontologically founded framework for understanding and not a*

theory of causation" (Byrne & Callaghan, 2013, p. 8) and they also recognised that it can generate theories of causation. They highlighted that *"it plainly engages with the philosophical foundations of social science both in terms of the construction of the theories of the social and, crucially, in relation to the methodological foundations of the social science as an empirical practice"* (ibid, p. 57). The attraction of complexity thinking is that it is non-linear, appreciates that there are networks and feedback systems, and that instability and unpredictability will occur. As Byrne and Callaghan explain, it offered the opportunity to understand science not just as the contemplative observation of the world but more as a set of social practices which have a deep and profound impact on the construction of the world.

What the complexity sciences also offered was a different lens through which to consider leadership. As Goldstein, Hazy, and Lichtenstein (2010, p. 4) highlighted *"complexity science empowers leadership in another way: it presents an* active *and* constructional *model of leadership based on a highly engaged view of mutuality, interdependence, and shared accountability."* They described how their complexity view of leadership built on the idea of an ecology of innovation, with the science of ecology being about the study of ecosystems, eco-subsystems and a whole systems perspective. With this in mind, thinking of higher education institutions as complex systems, operating within a complex national and global system, and having within them individuals who in themselves create and perceive complexity, makes sense. Connecting the complexity sciences and leadership in higher education is therefore a legitimate next step. Traditional leadership approaches that have been viewed by some as 'managerial' and not aligned to the ethos of the sector, and often leading to controls and boundaries being put into place can be revisited through this

new lens. Complexity science, whilst recognising the need for order in systems, also recognises the need for fluidity, agility, emergence, connectivity and innovation.

The use of complexity theory in research methods and practices also potentially offers an alternative ontological position to the ones that had traditionally be used by researchers in the business and management field. As Stacey (1995, p. 492) noted *"the dominant frame of reference for research in management and organization is the reductionist one"*. He argued that organisations are essentially non-linear systems which cannot be considered in a linear form or as operating in any kind of equilibrium. Similarly Grobman (2005) explored complexity, chaos theory and complex adaptive systems in the context of organisational change and concurred that organisations should be considered as complex systems through which information flows in all directions, the use of data and instinct can go hand-in-hand with traditional practice, and being 'on the edge of chaos'. Schapper, De Cieri, and Wolfram Cox (2005) add to this suggesting that the complexity of organisations is not just a matter of ontology, but it is actually an epistemological issue. If organisations are perceived as complex then researchers need to move beyond using just one theory or approach to considering multiple theories, perspectives and paradigms.

Research connecting complexity and the social sciences is still relatively formative, with both Grobman and Schapper et al. recognising that there is a high level of fluidity and lack of clarity in terms of how complexity is being used to study organisations. Chia (1998) also warns that rather than leaning towards the natural sciences, a lean more towards the arts and humanities might be needed to accommodate more fully the spectrum of human lived experiences and human intuition. Interestingly he suggested that *"we are led to realize that the ontological act of organization is an act of arresting, stabilizing and simplifying what*

would otherwise be the irreducibly dynamic and complex character of lived-experience. Organization is an inherently simplifying mechanism and the idea of 'complex' organization(s) is in effect an oxymoron" (ibid, p. 362). This aligns well with the notion of sense-making, and the interplay of people and organisations as noted by Weick, (outlined in a previous section), suggesting that there is a commonality of themes running through the literature.

And so, whilst there is continued academic debate around this field, learning from the complexity sciences is being applied and new learning is emerging in sectors such as healthcare, education and higher education. It is this latter area that is the focal point for the study, and so the relationship between complexity science and higher education will be explored next.

2.4.4 Complexity and the higher education sector

In 2010, Bosetti and Walker (2010, pp. 16,17) noted that *"modern universities have become big businesses. They are large and complex organisations with thousands of faculty and staff, annual budgets measured in the hundreds of millions, offshore campuses, global alliances and a wide variety of revenue generating business operations"*. Since then, as discussed in a previous section, there has been increasing pressure of regulation; a changing relationship with students; the impact of Brexit on staff and student mobility, as well as research funding; tensions around pensions and jobs; and the reality of dealing with a global crisis, suggesting that the higher education sector is indeed becoming exceptionally complex.

With this there is a growing realisation by HE leaders that universities are highly complex organisations that are operating as a subsystem in a wide and ever increasingly complex society. Siemens et al. (2018) suggest in their analysis of complexity in higher education that there are five complexity principles which provide an organising framework through which those in higher education can start to understand and navigate the uncertain, unpredictable and rapidly changing environment. Figure 6 shows that when compared to the seven factors identified by Watkins et al. (2017) - drawn from the work of Marion and Uhl-Bien (2001) as being associated with complex environments, three of the five are common, with two that are additional:

Five Complexity Principles *(Siemens et al. 2018)*	**Complex Environments** *(Watkins et al., 2017)*
Networks	Networked structures
Emergence	Emergence
Self-organisation and social coordination	Self-organisation
Feedback sensitivity	Unpredictability
Agility	Adaptation
	Autonomous agents
	Chaos

Figure 6: Comparison of complexity factors

These offer a clear set of principles through which an understanding of complexity can be reviewed. However, they remain principles which are hard to measure. They also appear to 'objectify' complexity, rationalising complexity into specific phenomena. What appears to be missing is the 'subjectivity', the lived experience and perception of complexity, which seems to be a key factor if complexity is subjectively handled by individuals.

Understanding that the process of learning is becoming ever more complex is also important. Whilst the foundational principle of providing credits for learning which are put together to form qualifications of different types remains a helpful way to structure, accredit and recognise learning, the way in which this is designed and delivered is potentially now open to new opportunities. Gough (2011, p. 4) comes from a perspective that complexity offers an alternative model for educators away from the industrial or factory model of education which *"require curriculum to be understood as a simple, tightly coupled system which aligns intended learning outcomes with what students do in order to learn, and how they are assessed"*.

Likewise, Banathy (1999) reaches a similar conclusion using the lenses of systems thinking, which is positioned within the larger field of complexity science. He advocates a shift from the 'old' instruction focus to a 'new' learning focused design for higher education curricula, based on the notion that there is a complex learning system in higher education. In practice, however, universities who have adopted this approach have usually been responding to external skills and labour market needs rather than any other agenda. Jörg, Davis, and Nickmans (2007, p. 145) concurs suggesting that what is needed is *"a new paradigm for education that can grasp the complex process of learning"* as teaching methods are poorly fitted to the dynamics of human cognition, with curricula and disciplines out of step with what some employers need and the demands of a rapidly changing skills/labour market. They go on to note that *"such a complexity approach involves a rethinking of modes of inquiry, a new lexicon and assessment practices that are geared to the complexity paradigm"*. Whilst their work considers mainly the education system at school level, their perspective is supported by Banathy (1999, p. 144) who also concludes for higher education that *"only a radical and fundamental change of education*

perspectives and purposes and the reconceptualization and redesign of our educational institutions will satisfy the emerging new realities" of the post-industrial knowledge era.

Rethinking the entire way in which universities not just operate as organisations, but also enable, shape and share key organisational and operating strategies could therefore be needed. For example, the Covid-19 pandemic led to a digital revolution that has accelerated the development of online education, and although not necessarily replacing face-to-face learning in the longer term, it has redefined how many universities can shape and package learning in distinctive ways (Marginson, 2020). Appreciating and understanding the complex systems that the sector is in, and is a part of, could provide an ontological shift in terms of how the business of higher education is approached. However, the application of complexity science (and all those variable elements it contains) to higher education has been limited and mainly in theory rather than practice.

The key leadership insight emerging from the literature, and reinforced by the findings from this research, is that leadership is no longer a predictable process that requires specifically defined characteristics, skills and behaviours. It requires instead *"a complex approach of learning, non-mechanized and innovative solutions, and collective action and reflection"* (Kezar et al., 2006, p. 40). University leaders therefore may need to find different ways to develop greater flexibility in their leadership style in order to operate more effectively in an environment that requires a much more adaptable approach to managing both the system and the people. What also emerges is the importance of valuing different voices, requiring the need to balance the demands of disparate groups and the requirement to listen more to students.

Evidence from the literature therefore suggests that there is both relevance and merit in exploring what is understood by complexity in a higher education setting and considering its implications. Understanding this body of knowledge, the theories emergent from it, and the insights that this can bring to higher education, and in particular HE leadership, has therefore been a key focal point for this research.

2.4.5 Complexity and leadership: exploring Complexity Leadership Theory (CLT)

The complexity factors outlined in Figure 7 provide clear indicators of the ways in which complexity can be articulated in universities. These provide potential insights into where small steps can be carefully taken to create the conditions within which complexity can flourish. Enabling these conditions to flourish is a key leadership responsibility that higher education leaders need to feel equipped to enact.

Lowell (2016), Mason (2008b) and Snyder (2013) suggest that making such changes can be iterative and experimental. Leaders can create the right conditions to encourage collaboration and empower people – thus enabling emergence and the creation of networks. They can be clear about boundaries and hand over control within those boundaries – thus enabling self-organisation and the development of autonomous agents. They can foster innovation and disruption, allowing failure, but also potentially allowing agility and adaptation. The challenge for many leaders is knowing how to harmonise these changes to enable, rather than disable, organisational success, recognising that often there are competing demands which may need differing leadership approaches.

In her recent paper, which builds on previous work undertaken over the last decade, Arena (2017) suggests that a new form of leadership – Complexity Leadership, as developed by

Uhl-Bien and McKelvey (introduced initially in Section 1.6 and Section 2.3.2 above) – could provide leaders with very practical principles and practices through which their skills and capabilities could be enhanced. Taking lessons from complexity science she suggests that learning to lead for adaptability and to enable rich connectivity, are key areas of focus, recognising also a need for the evolution of the associated human responses in these areas. She also recognises that many organisations, as is the case for higher education, operate in highly bureaucratic and hierarchical structures, often with external pressures for conformity, which can be constraining when there is a desire to develop complex adaptive systems. Complexity Leadership Theory therefore offers the possibility of considering how differing often competing demands can be harmonised through leading for adaptability.

Complexity leadership as a theory suggests that leading for adaptability takes three different leadership approaches: operational leadership, entrepreneurial leadership and enabling leadership (see Figure 3, page 20), with the latter being a unique form of leadership informed by complexity thinking. Arena (2017, p. 14) suggests that "*the three functions associated with complexity leadership are not isolated to any one individual or position: A single individual could potentially engage in any or none of them. In fact, the most agile leaders would have proficiency in all three."* She recognises that highly agile leaders will be able to move between each with ease, although this might not typically be the case and in fact may not always be necessary. The unique contribution that complexity leadership makes is that it offers a 'system of leadership' which can be applied across an organisational setting, which multiple leaders can be located in, each having the skills and qualities applicable to the differing domains, rather than expecting all leaders to enact leadership in one particular way.

Whilst an understanding of the entire leadership and operating landscape is deemed helpful, and the expansion of leadership capability to be flexible and adaptable across such boundaries, it is the leadership of the whole system and how this works in tandem that it is important. The skills and capabilities of those in the enabling leadership dimension are cited as being critical to this process, bringing with them complexity thinking; the ability to broker and link up new ideas; a talent for listening to the language and energy of the organisation and people to enable ideas to stick; and to put in place simple rules through which success can be achieved. They need to be personally adaptive and be able to adapt their approach based on the unfolding dynamics and emergence around them.

The potential application of such a leadership approach to a higher education context is therefore interesting and has been a point of enquiry for this research. In theory it could be considered that rather than disrupting the operating framework of universities, there is potential to retain the more formalised operational systems supported by an operational leadership style, whilst in addition creating adaptive space supported by an enabling leadership style. The embedding of networked structures and social co-ordination that are aligned to formalised operational systems rather than by being constrained by them is key, as is the need to strengthen feedback loops, agility and the ability to adapt at speed. Understanding, predicting and knowing how and when to deal with chaos is something that universities typically do not currently plan for, but may need to pay closer attention to in the future.

2.4.6 Section summary

What the literature therefore suggests is that complexity science is a potential catalyst to enable individuals and organisations, including higher education, to look differently at the world. It offers essentially a descriptive rather than prescriptive theory (Morrison, 2008), providing advice only on how to focus effort rather than actually what to do. The challenge now comes in how complexity habits of thought are developed and aligned alongside and in addition to other ontological and epistemological approaches. As Kuhn (2008, p. 188) notes *"complexity does not mark the end of original thinking"*. As history suggests, whilst the application of this descriptive theory into the context of the world as it is today is important, the most powerful ideas of one generation are often replaced by the ideas of the next.

The emergence of Complexity Leadership Theory as an approach to leading for adaptability offers more practical insights into some of the steps that leaders can take to both think and act differently in their local and wider environment. It offers the opportunity to build on existing theories and practices, seeking ways to harmonise multiple perspectives and methods, suggesting leaders experiment, learning with and through the implementation process in an iterative way.

The investigation provided through this research therefore aimed to explore the way in which these concepts can work with, and add to, existing practices within the higher education sector in order to provide new insights. By using a grounded theory-based approach it aimed to explore the concepts and theories with senior leaders, capturing their lived experiences as part of the process, and therefore build insights into the augmentation of leadership practice that are tune with the current reality of those in the sector.

One of the key challenges in this process has been whether both the sector, and leaders within the sector, are ready and open to expand their thinking and practice, which has been primarily based on experiences from the norms of the past and the current state. The final section of this literature review therefore explores readiness and openness for such change.

2.5 Complexity readiness: understanding individual & organisational responses to complexity

2.5.1 Introduction

The theoretical framework for this research, as shown in Figure 2, page 19, suggested the need to consider both individual and university / organisational factors as part of this study, considering the degree to which they intersect, and what, if any, relationship this might have to complexity. The final section of this literature review therefore considers the dimensions of cognition, mindset and organisational maturity and the way these can play a part when contemplating engagement with complexity and complexity concepts from individual and organisational perspectives. This section touches briefly on a limited range of literature from what is an expansive area. It is hoped that by considering the role that these elements may play, a broader and deeper understanding of the dynamics of complexity and their connection to individual leadership practice may be better understood.

2.5.2 Cognitive complexity and mindsets

As the research below suggests, individual mindsets shape our thinking, behaviour, actions and reactions. They drive the very essence of leadership – both the being and the doing. How we think shapes how we act, and so how leaders in higher education think about complexity, or what they perceive to be complexity (given this is in the eye of the beholder as outlined previously), can impact a wide range of other factors. By considering cognitive complexity and mindset it was hoped that the case could be made for its importance as a key factor in this research study. It should be acknowledged, however, that these propositions can be hard to test empirically in the context of live organisational settings, and by their very nature are likely to provide different outcomes in differing situations. So,

whilst some caution is needed in terms of drawing too many conclusions from specific elements of research provided here and translating these into a higher education leadership context, it is the overarching principle of the significance of cognitive complexity that is viewed as having value and being worthy of closer scrutiny.

Chia (2011) suggests that there is a continual need to reassess our understanding of how the world works, adapting constantly to cope with new challenges faced and equip ourselves to deal with new uncertainties. According to Chia (2011, p. 182) *"we need to complexify our thinking in order to learn and better appreciate the nature of complexity"*, demanding more than a normative responsive behaviour which draws only from specific skills and the application of existing knowledge. He suggested there is a need for a greater agility of minds, with thinking that acknowledges and embraces contradictions, and which is equal or superior to the complexity being faced. Leaders who can deal with constant ambiguity can look for patterns through uncertainty and can see the world through the perspective of multiple stakeholders, suggesting they may be more likely to be able to utilise the learning from complexity theory.

Drawing from complexity concepts; emotional intelligence; and dialogic and systems thinking, Benson and Dresdow (2003) suggest that leaders require a decision making approach that is structured around discovery (exploring multiple perspectives and engaging in idea generation) and collaboration (awareness that others can help to develop joint creativity rather than individual creativity). This leads to a mental network that generates insight and creates opportunities, growing the likelihood of leaders seeing decision making as a complex process rather than an isolated event. Similarly, Osland, Bird, Mendenhall, and Osland (2006) refer to cognitive complexity as a cognitive structure composed of

differentiation (the number of dimensions or constructs an individual uses to describe a particular domain) and integration (the links or relationships the individual sees among differentiated constructs). The more cognitively complex managers become, the more dimensions and relationships they are able to perceive (Beechler & Baltzley, 2008).

Research reaching back through several decades also supports this notion of cognitive complexity. Bartunek, Gordon, and Weathersby (1983) cite a range of research from the 1960's and 1970's that suggested that cognitive complexity correlated with tolerance for ambiguity and a prediction for making more accurate choices. Also, people with a higher level of cognitive complexity are more capable of taking the perspective of others, thus they tend to be less prejudiced and better able to resolve conflicts cooperatively. However, they go on to highlight that increased cognitive complexity is only one development strand, with others being equally important. They include *"the character and quality of ethical reasoning, capacities for introspection and self-awareness, capacities for understanding others and interpersonal relationships, and increasingly broad views of society and social issues*" (Bartunek et al., 1983, p. 275).

Whilst still open to academic debate, theoretical findings from the implicit self-theory work of Dweck (1986) as applied to the way individuals learn, suggest that an individual's implicit theory of learning, or mindset, is one aspect that may influence an individual's ability to learn from experiences. The learning mindset is considered to be the implicit belief that an individual holds about the malleability of their learning abilities. An individual with a more incremental (or growth) mindset believes that with hard work and effort, skills can be improved or developed, and learning can be gained from tackling new and unknown puzzles or problems. Alternatively, an individual with a stronger entity (or fixed) mindset

believes that their ability or skill is not something that can be changed, and that personal potential is predetermined. It is suggested that individuals who believe that abilities are more malleable, through effort and commitment, are more likely to continue to pursue challenging tasks until they master them (Dweck & Leggett, 1988).

Dweck's theory suggests that these beliefs may influence leaders to behave in significantly different ways, thereby leading to very different individual outcomes. In reality however, leaders are likely to span a continuum between each of the polar opposites as described by self-theory, with this shift also potentially being context dependant - i.e. an individual may have a fixed mindset when it comes to their physical development ('I'll never be able to run a marathon') in comparison to a growth mindset when it comes to new learning ('learning this new technology is exciting'). Understanding these dynamics, how agile individual minds are, and how differing factors may or may not impact on senior leaders' ability to recognise, relate to and deal with complexity in higher education therefore seems highly relevant.

When considering the development of individuals, it must also be remembered that they operate within an organisational context which can set the tone for the individual and collective behaviours exhibited. Bar-Yam (2008) discussed the notion of individual and collective behaviour and how this could be independent and inter-dependant based on the system that it is operating within. He also recognised that the environmental demands placed on an organisation could impact on the patterns of behaviour within, with an organisation's behaviour needing to reflect in some way the nature of the environment it is operating in. It is therefore important in the context of this research that not just individual

cognition is considered, but also the level of organisational maturity, as this may also have a bearing on an individual leader's response to complexity within an organisational setting.

2.5.3 Organisational maturity and complexity

As highlighted in section 2.3.2, organisational theories have evolved over time, with one key conceptual development being to show how organisations themselves evolve and chance. The development of organisations over time could be described as *"the stages through which an organisation progresses in realising an end goal"* (Van Looy, De Backer, & Poels, 2011, p. 1125).

Known more broadly by the term 'organisational maturity', it can apply to many dimensions of organisational operation. In most instances it relates to either process maturity; object maturity (e.g. a system); or people capability, often with a level of inter-dependency between each of these (Mettler, 2011). In line with organisational development theories, organisational maturity can be fragmented: i.e., within one organisation certain processes and/or systems could be well advanced, with others not at all advanced in comparison to need or desired state. Systems and processes could be advanced and yet the culture may not be as mature in terms of implementation. However, a sense of overall organisational maturity can often be identified.

Organisational maturity as outlined by Mettler (2011), is described as moving through defined stages, suggesting that organisational maturity is intentionally designed, often at a system level. At its most basic, there are five key stages that are commonly used to define the levels of organisational maturity:

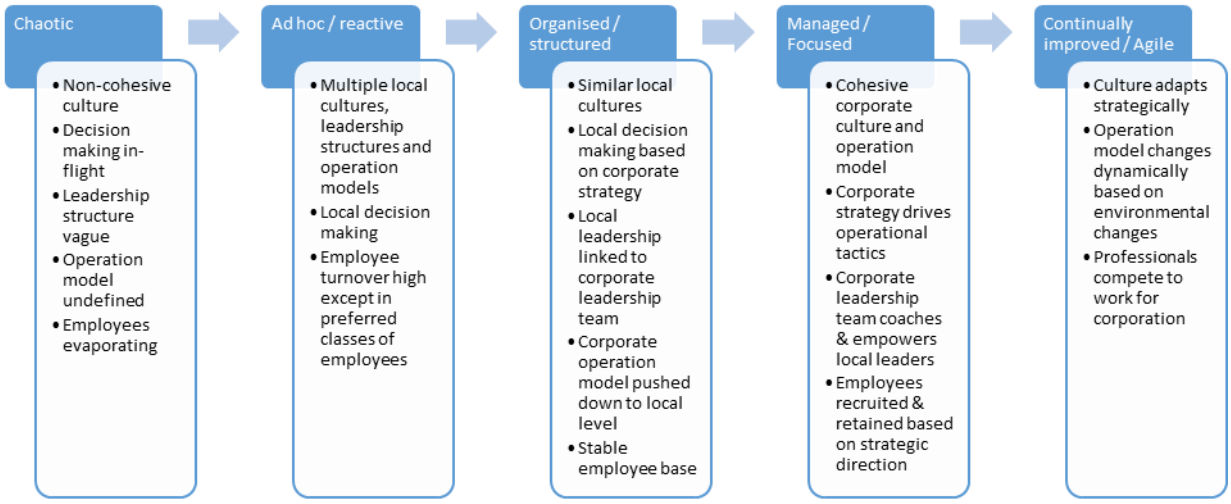
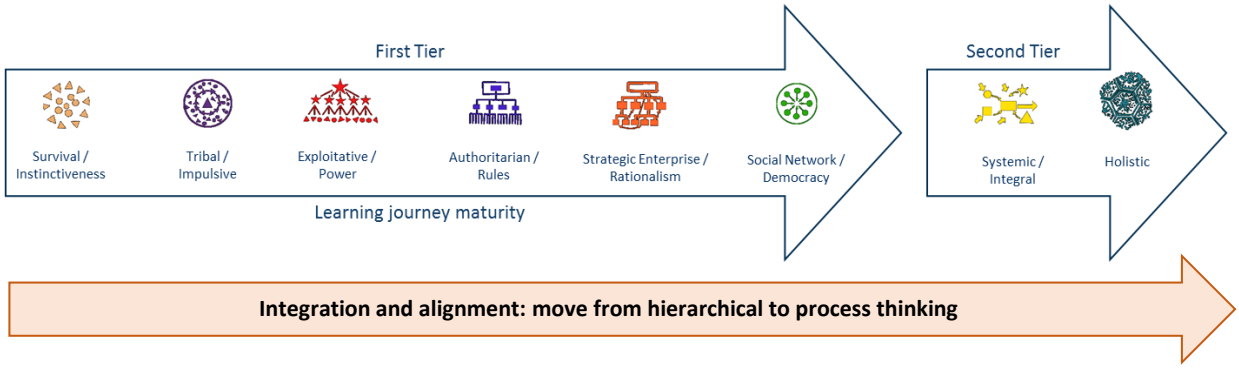


Figure 7: Organisational maturity stages (generic)

This pattern of maturity aligns well with the work of Clare Graves, popularised by Don Beck and Christopher Cohen in their 1996 book 'Spiral Dynamics' (Beck & Cowan, 1996). Whilst the starting point for Graves' work was considering patterns of thinking and sets of values amongst individuals, he also recognised that environmental and social circumstances impacted and interacted on an individual's ability to biologically and neurologically evolve in order to deal with a great level of complexity, thus expanding human consciousness. He recognised that *"when a person is in one of the states of equilibrium, he has a psychology which is particular to that state. His acts, feelings, motivations, ethics and values, thoughts and preferences for management are all appropriate to that state"* (Graves, 1970, p. 133). This notion aligns well with the cognitive complexity research presented in the previous section which suggested differing levels of cognitive complexity exist and are needed, with those having higher levels of cognitive complexity likely to be able to operate more comfortably at whole systems levels with those with more limited levels of cognitive complexity likely to work more comfortably within specific parts of the system.

In developing this work further Cowan and Todorovic (2000) and Beck (2003) recognised that these values states or systems could also apply to groups, societies and organisations. They observed that there is a need for a way of organising that fits the needs of thinking today as well as shaping the needs of tomorrow, developing a model which whilst appearing linear is actually a nested series of concepts.



Approach to ways of working:								
Instinctive, automatic and reflective	Ritual ways where all share in and follow elders, chief, customs	Hands-on, tough, work controlled by firm, respected boss	Linear processing, but-the-book with errors punished, dutiful	Competing to gain advantage and come out of control, on top	Cooperative in joint venture where all collaborate and share		Independent focus on complex systems and functional flow states	Unify and integrate diverse knowledge and ways of being
Key objectives:								
Just staying alive	Finding safety / kinship / harmony / reciprocity	Raw individualism / exerting dominance / power / survival	Meaning in life and death / stability / order / deserve reward	Autonomy / success / best options / material gain / novelty / change	Affiliation / peace of mind / balance / sense of community		Knowledge / freedom to be free / discovery of what life is about	Viability for all beings in a complex, sustainable world

Figure 8: Organisational maturity, adapted from Graves, Beck and Cohen

The implication from these theories is that organisational maturity is directly inter-connected with individual actions and cognition i.e. if individuals (individually, collectively or by majority) in the organisation hold a world view that is based on authoritarian / managerial thinking that pre-supposes rules, order and method (e.g. as suggested by 'managerialism' or New Public Management - as referenced on page 36), then it is likely that the organisational design and therefore maturity will be limited by this level of thinking.

When considering the evolution of leadership theories, as outlined in the previous chapter of this literature review, it could be argued that leadership theories and approaches over time have a similarity of nested evolution to Beck and Cohen's model i.e. from 'great man' theory, which could be aligned to the 'tribal' state; through leadership based on leader/follower power and authority ideals; to the more distributed, eco- and systems leadership approaches more recently that could align to the more enterprising, social and systemic states. What the review of leadership literature suggested was that whilst no one leadership theory is better than any other, they all take account of, are influenced by, and contribute to, the shaping of the organisation in which they are enacted, which also aligns with Beck and Cohen's work, demonstrating interesting touchpoints between these differing research fields.

Learning from the complexity sciences suggests that whilst levels of external complexity that organisations face can and does change, the internal organisational response can only be made by leaders who can adapt within and across system boundaries accordingly. If leaders within the system are therefore limited by the level of maturity they are used to leading within that system, then without further leadership insight, new or greater levels of complexity are likely to be dealt with using leadership practices which may not align with the requirements of the new or emergent state. Complexity Leadership Theory also suggests that there are multiple types of organisational systems that need to operate in harmony within organisational boundaries. Systems that have tight rules and regulations sitting alongside systems that are adaptive, flexible and allow failure. On this basis it could be suggested that there needs to be a level of leadership and organisational maturity at the whole organisational (or system) level which can allow diversity of maturity, operations and leadership practices within the organisational or system boundary.

In complexity terms, a higher level of organisational maturity therefore seems desirable in order for the whole system to be understood, fragmented into eco-systems, with the appropriate level of systems leadership practice enacted at each level (or part) of the system.

2.5.4 Section summary

What this potentially suggests, is that both individual and organisational maturity have a direct link to a capacity and readiness for recognising, understanding and managing complexity effectively. A critical part of the exploration of this research was whether a deeper understanding of the dynamics of complexity can offer a different way of considering current complexities, and therefore whether greater account needs to be taken of the organisational conditions within which universities are operating, as well as the individual and organisational dynamics at play. There is potential that leaders may understand the insights that this learning brings at an intellectual level; what is not clear is whether leaders have, or believe they have, a mindset that means they can consider complexity from a 'transformational' or whole systems perspective, thus bringing new insights to life in terms of their leadership practice.

2.6 Chapter summary

This literature review chapter has explored, in summary, the landscapes of higher education; leadership (particularly in higher education); complexity and the complexity sciences; individual cognition and organisational maturity. When considered holistically there are a number of golden threads that appear to emerge from this review which help to set the scene for this research and for the later analysis of the research data.

First, there appears to be general agreement that the higher education landscape in England is undergoing continual transformation, with multiple and competing targets, a growing variety of stakeholders, and factors at local, national and global levels impacting on how the sector is operating. What this seems to suggest is that universities are complex commodities, with leaders having to weigh up the tensions of interdependence between people, process and systems; of human, organisational and structural capital; of individualism or collaboration; of teaching, research, commercial and social endeavour; and of stakeholder, students and staff (Barnett & Di Napoli, 2007). What all of this points to is a 'messiness' that current leaders need to navigate through and make sense of at an institutional and sector level. The need to lead for both stability and ambiguity; lead into the known and un-known; with fluidity and with certainty, is a type of leadership that many senior leaders within higher education institutions have not been fully prepared for.

Secondly, the notion that the higher education sector is operating as a (complex) system seems clear, from local, national and global perspectives. Re-thinking the ownership, identity and 'business' of higher education is potentially needed in order to re-define, re-shape and re-imagine the role and purpose of universities individually and collectively. Whilst the literature describes many drivers and actors that have impacted on the

evolution of the sector up until now, what isn't clear is who is driving the destiny of the sector into the future? As a complex system with many interconnecting parts, there is a sense emerging from the literature that the crossroads the higher education sector has been heading towards may have been reached.

Thirdly, how leaders think, make meaning of, and construct the world around them appears to be just as important as the leadership action that is taken as a result. The significance of the level of cognitive complexity, as well as emotional and intellectual ability amongst higher education leaders, alongside academic credibility, seem to be emerging as key factors that appear to have been neglected in the leadership research for leadership in the HE sector. Interestingly, this seems in juxtaposition to the curiosity and inquisitive nature of many academics and researchers, potentially highlighting the mental divide between 'academic task' and 'leadership task', suggesting there needs to be a greater ability to utilise skills across differently perceived domains. Considering leadership across the sector in a more symbiotic way, co-existing more closely with all of the elements of the system that leaders are operating in, and being more connected to the practice of leadership rather than the position or role of leadership could therefore be helpful.

Finally, the need for further research and an expansion of the literature related to senior leadership teams in higher education, as well as individual and organisational maturity in the sector, is also clear given the dearth available currently. There is also a suggestion that braver leadership and bolder steps are needed to reimagine universities in the future. It certainly seems to be the case that internal organisational adaptation is necessary that embraces a greater recognition of the eco-system of learning, research and their inter-relationship with people in the world.

3 Research Design and Methodology

3.1 Introduction

As outlined in earlier chapters, leadership is a well-researched topic. Whilst leadership research in the higher education sector has been increasing, much of the research has focused on specific groups of leaders - particularly academic leaders. Much of the leadership research in both the business and education fields has focused on individual leader behaviours, traits and styles and/or the nature and impact of normative leadership approaches across different organisational contexts, often based on inductive reasoning which presupposes that the actions and reactions of leaders are individually defined. For this study, it is the application of complexity theory and learning from the complexity sciences to leadership in a higher education setting that is relatively new, including its application to a university senior team comprised of both academic and professional service roles. I have also sought to use an inductive-deductive approach to underpin this research, meaning I have taken into consideration existing lived experiences and theories in practice (deductive reasoning) as well as building on existing theories and approaches to create new ones (inductive reasoning) (Cohen, 2011).

In this research I have also been seeking to understand the dynamic between individual, organisation and wider system in more detail, considering the interaction and impact of each on the other, considering leadership as a much more fluid entity that is both within, influenced by and an influencer of the system it is operating within – both personal and organisational. Considering the wider field of the complexity sciences has added a different dimension. Understanding the higher education sector and universities as living systems, with a network of relationships and an organisational eco-system that keep on evolving, and the development of methodology and data collection instruments to review this has

therefore not been easy. A key starting point has been that the enhancement of leadership practice will come not from the creation of brand-new knowledge or ideas, but from bringing together and connecting existing knowledge, ideas, concepts and practices in a new way; by looking across a wider landscape beyond just the individual or the organisation or a limited number of factors, but at the interconnection of all of these – by focusing on the system as well as the entities within the system. As Bateson (2016) states *"when we look to nature for models, we find that there is not an ecology that would accommodate the existing model of leadership".*

I believe that people are active rather than passive, being part of the creation of new experiences and knowledge rather than by-standers to it. They influence and are influenced by the organisational, social and global setting in which they live and work, making choices everyday based on conscious and unconscious factors. They are both part of and influencers of the system within which they operate, and it is this standpoint that has significantly influenced my choice of co-constructivist grounded mixed-methods methodology for this research.

So, with the focus of this research being on the development of new insights rather than new answers, and with competing methodological paradigms from the social sciences and natural sciences at play, the methodological approach chosen for this work needed to be multi-faceted and exploratory in nature. I needed a methodology that would allow the gathering of rich data that provided a breadth and depth of insights, allowing what Bryman (2007, p. 8) described when referencing the writing up of research: *"the quantitative and qualitative components are mutually illuminating".* This investigation needed to take a holistic approach, moving away from the unit of analysis approach of looking only at the

individual or the organisation to look at the whole eco-system. It needed to be subjective and objective in nature, blending the benefits of both nomothetic and idiographic approaches (Salvatore & Valsiner, 2010). The part-time nature of the study also influenced the shape, depth and breadth of the type of methodological approach available.

The research framework chosen consisted of:

- A holistic single case study approach – providing the opportunity to look in-depth at one group of senior leaders operating within a specific HEI real-world context. This allowed a greater degree of scrutiny of the nuances and complex issues at the boundaries of the interfaces between the leaders, the organisation, the sector and the wider system, considering a wide range of variables in a way that may not have been as achievable otherwise (Yin, 2012). A single rather than multiple/comparative case study approach was chosen mainly for time and resource reasons. Initially leaders at all levels across all job families were considered as being appropriate to include, however the size and scale of the sampling that would have been needed prohibited this, and so what would have been an embedded case study approach consisting of multiple leadership groupings was rejected. Whilst it is recognised that there were limitations with this approach in terms of generalisation of findings beyond this leadership group and institution, potentially limiting valuable learning across the sector, it was felt that the outcomes will be of benefit to other HEI's as they consider their own leadership developments.
- A multi-stage mixed methods methodology (Fetters, Curry, & Creswell, 2013) or fully integrated mixed method design (Cohen, Manion & Morrison 2011) – allowing a combination of quantitative and qualitative data to be collected iteratively, with different stages influencing each other. This allowed data to be gathered and analysed

both independently and in a converged state, considering both individual and more generalised/broader factors, providing an opportunity to consider the interplay of multiple elements and how they interact. By using both quantitative and qualitive approaches, and stages, it also meant that some of the early data gathered could be illuminated more fully by later data, and that the quantitative data (the 'what' in many cases) could also be delved into more deeply, ultimately providing much richer data for analysis through the qualitive methods (the 'why'). Creamer (2016, p. 7) described this as an *"architectural arch"* whereby both qualitative and quantitative data work together throughout the research process, with the final outcomes forming the 'keystone' meta-inferences that are drawn from bringing the analysis of each together.

Whilst in practice the *"architectural arch"* was implemented, it is important to note that in terms of outcome and analysis, the arch wasn't altogether symmetrical i.e. whilst both qualitative and quantitative data was collected, analysed and combined at every stage, because of the limited number of returns to the questionnaires and the richness of the data gathered at interview, in the final analysis of the results the qualitative analysis was foregrounded with the quantitative analysis providing supporting evidence where helpful. As such, this mixed-methods approach was followed initially in terms of design and data review, and then held more loosely at the final analysis stage based on the balance of data received.

- Use of a constructivist framework – building on the perspective that individuals are constructing new understanding and knowledge, integrating this with what they already know, which is also the overarching ontology of this research approach – bringing together in a new way what we already know. As outlined by Lueddeke (1999)

constructivism is informed by three primary propositions, which relate well to this research. The first recognises that learning is a function of the context within which it occurs, influenced by personal constructs and realities. The second is that knowledge evolves through social negotiation and the evaluation of the viability of individual understandings. The third considers that truth is partial and is ultimately dependant on position and context, with influences related to context, place, power and individual protected characteristics. Whilst recognising the limitations of size and scope, this research aimed to be as inclusive as possible, and playful with knowledge, understanding and perspectives in order to view these from new and illuminating angles.

This chapter outlines in more depth the rationale for choosing these approaches, in particular the use of a constructivist grounded theory-based framework. It also includes an overview of the stages chosen, the choice of questionnaires, interview methods, the sample selection process and an overview of the data analysis methods employed.

3.2 Rationale for using Constructivist Grounded Theory

Grounded theory, described in the book *The Discovery of Grounded Theory* (Glaser & Strauss, 1967), allows theories to emerge from the analysis of data, relating concepts to this developmental theory over a number of stages. The value of the grounded theory method is that it allows a constant interplay of data collection and analysis-informed theory. This type of inquiry fits with constructivism and the approach to theory generation based on an interpretive analysis of data. It is a participatory form of research which is both exploratory and interactionist in form.

Although originally developed in the 1960's by Glaser and Strauss as part of a study that aimed to understand the process of dying, it has since been further developed - including a divergence of approaches by both authors. Originally the authors stated that their method took an inductive rather than hypothesis driven deductive approach, the latter of which was popular at that time. This meant that rather than research being tested and built against a known social theory, it became possible to undertake broad research from which theory could then be discovered. Over time Glaser continued the development of the method in line with the original theories, developing explicit methods for the codifying of data alongside the notion that the researcher has no pre-conceived notion as they engage with the research. Meanwhile, Strauss moved to a more symbolic interactionalist approach where he recognised that researchers cannot completely separate themselves from the study (Walker & Myrick, 2006). Whilst these differing perspectives led to a fundamental diversion of a key aspect that sits at the heart of grounded theory – the process of gathering and analysing the data – what remained was the degree of licence provided to the researcher in shaping the research, and also the emergence of theory.

Variations in the design of grounded theory approaches have therefore emerged, with Coleman and Briggs (2002, p. 190) outlining three key designs:

1. The *systematic* design associated with Strauss and Corbin (1990) where a range of analysis is undertaken prior to the data collection. Offering a more structured approach, this method usually allows for the development of research questions, literature searches and heuristic frameworks to be formulated prior to the collection of data. Whilst this is often a common approach followed in part-time research studies of this nature, it was felt that it may be too constraining. Whilst research questions had been formulated and the research landscape mapped and partially reviewed, the opportunity for emergence and iteration was needed – to be able to go back and adjust, enhance, further review and reflect in a way that could influence the research whilst it was underway. Capacity for responding to new and emergent ideas, for researching around them and for testing them out as part of lived experiences was needed. This design approach was therefore discounted on this basis.

2. The *emerging* design associated with Glaser (1992) where research questions emerge whilst the research is underway, and the literature review follows the data collection. In this method there are no pre-conceived ideas, theories or frameworks. This method was not appropriate for this research study as I did have a number of theories and models in mind that were being held 'loosely' and tested along the way, such as Complexity Leadership Theory and theories associated with cognitive and organisational complexity/readiness. This research did not aim to be driven by these theories, but neither was it starting without any theoretical

frameworks at all. It was also felt desirable to treat the literature review as an iterative process, with the literature landscape being reviewed initially to help shape and frame the broad nature of the questions and the research stages, with further literature reviewed and considered both during and after data collection in order to generate meaning and a greater depth of understanding to some of the research findings. This design approach was therefore discounted on this basis.

3. The *constructivist* design associated with Charmaz (2006) where the researcher is much more proactive in participating with the participants and data, leading to the co-construction of the final theory. This method provides a more flexible approach to the use of grounded theory principles. Whilst keeping some of the systematic elements, there is an increased recognition of the role of the researcher, leading to co-construction of the outputs by all parties, rather than just the emergence of theory from the data. Given the professional and applied nature of this doctoral research and my desire to co-create the outcomes in a way which would enable senior leaders to both recognise and own the results of the research, using this design as a basic framework seemed most appropriate. It allowed and embraced emergence, the co-construction of learning, and shared ownership of the resultant theory or outcome. It also provided a tool for enhanced seeing but did not provide automatic insight.

A further reason for employing an approach based on the framework by Charmaz was the recognition of my role as both employee, organisational development practitioner and researcher in this context. My professional role, academic and research background, positionality within (and insight of) the case study university meant that I did not feel

separated from the research, rather more an active actor alongside other participants. I felt that my worldview in this area, based on previous research and experience, had merit although it was not exclusive and needed to be challenged, explored and laid open for scrutiny amongst the broader literature landscape and insights from others. I recognised that my experiences and knowledge potentially biased my views. Whilst I entered into my research initially with a focus on the development of a specific theory, utilising learning drawn specifically from Complexity Leadership Theory (Arena & Uhl-Bien, 2016), during my research I realised that I needed to be more open to the emergent data being collected and learning from the literature being explored. My own lens on leadership and complexity started to shift and whilst I continued to filter the data through my own perspectives, I consciously suspended my judgement and increased my curiosity through iterative reflection and analysis. I accepted that my perspective was one of many, especially as the interview data collection progressed, and I actively followed lines of enquiry prompted by the data, rather than from my own reactions at that time. Charmaz's recognition that the researchers' backgrounds can influence the interpretation of the data, even whilst every effort is made to direct and re-direct the shape of data in a more grounded way, rang very true in this context.

3.3 Overall research design

The overall process draws from that suggested by Charmaz (2006, p. 11), although it was adapted slightly for the purposes of this research. As Figure 9 illustrates, the starting point was to establish the main questions that the research was exploring, with an initial exploration of some of these questions through quantitative and qualitative methods, reviewing and analysing this data in in order to build on and add to this knowledge through the second data collection methods. Reviewing and analysing this second data collected, and then considering key themes from across all of the data allowed the construction and emergence of key themes, as well as validation (or otherwise) of theories and themes throughout the process.

Both quantitative and qualitative methods were integrated in order to provide the depth and breadth of data required, with opportunity to undertake this iteratively so that emergent themes could be explored further. The addition of a focus group / co-creation session later in the process aimed to allow the shared exploration of the themes, cross referenced to potential theories and the beginning of a shared output. The theoretical sampling approach and continued sampling until new data emerged was not followed as strictly as noted by Charmaz (2006), although key categories were established and explored further at subsequent research stages. The sample group were chosen based on the focus of the main research question. In-depth interviews were undertaken with pre-set questions which were then followed up to explore inconsistencies or to elicit additional explanation. All interviews were recorded and transcribed using a mix of auto-transcription and manual transcription methods. This was followed by qualitative and focused coding of each transcription. Axial coding, a method of investigating and drawing relationships between differing concepts, was used in the latter stages of the data collation process. Constant

comparative methods were also used, particularly between the questionnaire 1 and interview 1 and questionnaire 2 and interview 2 outputs, to compare data with data to find similarities and differences.

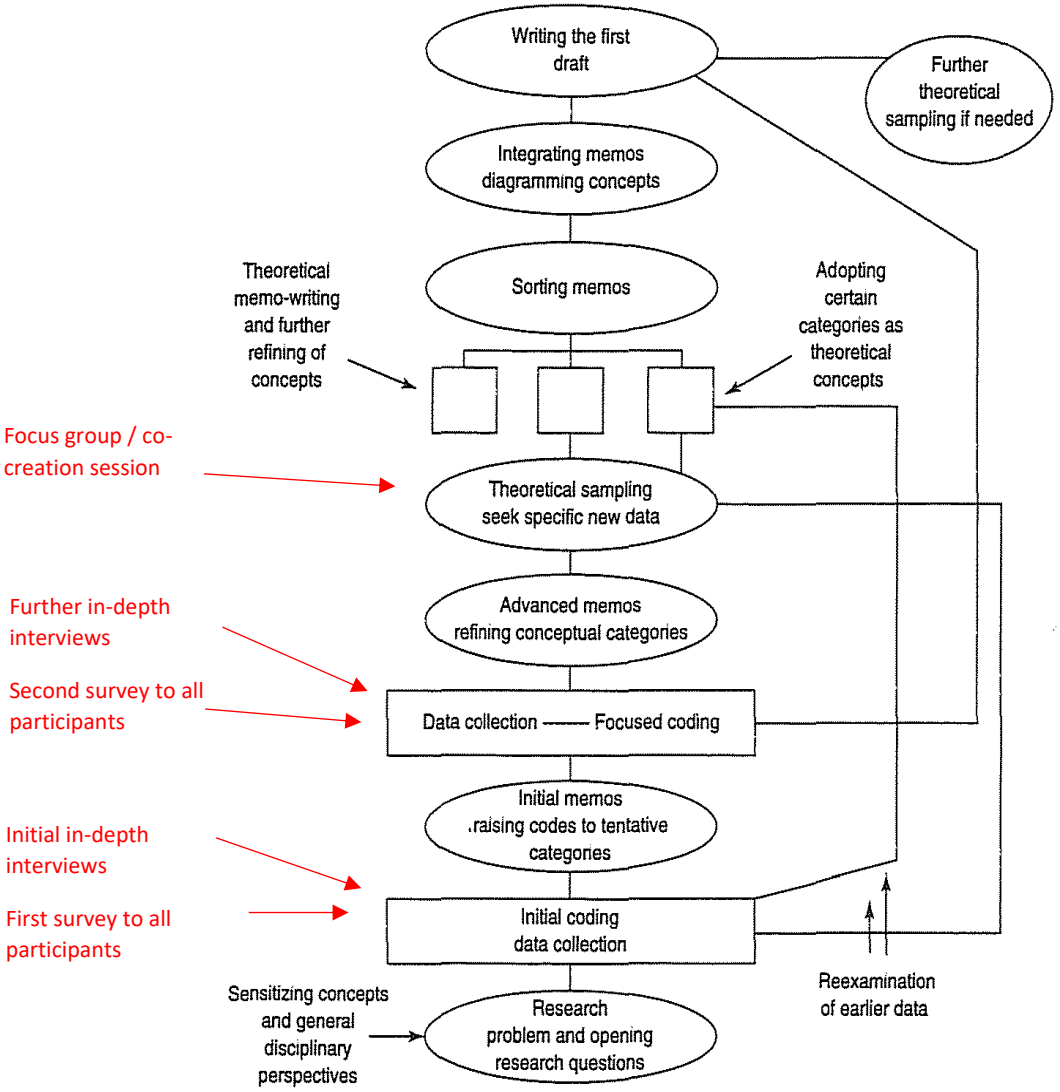


Figure 9: Adapted grounded theory process, based on Charmaz (2006)

3.4 Data collection and methods

As previously shown on page 27, the methodological instruments used have been summarised and collated in a table for ease of reference. These are provided again here in Figure 10 as a reminder, this time also including alignment to the research questions. The surveys and interview questions used are provided in Appendices 3 - 6:

Theoretical framework	Research instrument used	Research question alignment
Data collection stage 1:	***Survey***	1. Do senior leaders within one higher education institution perceive the higher education environment to be more or less complex, and what is the rationale for this understanding? 2. How do leaders perceive complexity in one English higher education institution, including the relationship between organisational and individual factors?
Leaders' perception of complexity in their University context	Researcher defined questions Complexity Assessment Tool (CAT) (Maylor et al., 2013)	
Data collection stage 1:	***Semi-structured interviews***	
Leaders' perception of complexity in their University context	Researcher defined questions: Interview questionnaire 1 (14 questions)	
Data collection stage 2:	***Survey***	1. Do senior leaders within one higher education institution perceive the higher education environment to be more or less complex, and what is the rationale for this understanding? 2. How do leaders perceive complexity in one English higher education institution, including the relationship between organisational and individual factors? 3. What are the implications for the development of leadership practice in the future?
Individual factors	Behavioural Complexity Questionnaire (Lawrence et al., 2009)	
Organisational factors	Organisational Change Capacity - adapted from Judge and Douglas (2009)	
Data collection stage 2:	***Semi-structured interviews***	
Individual factors	Researcher defined questions: Interview questionnaire 2 (12 questions)	
Organisational factors		
Data consolidation stage 3:	***Focus group***	3. What are the implications for the development of leadership practice in the future?
Implications for leadership practice	Discussion and collective analysis of research	
The overall outcome from all stages combined aims to provide an analysis for the overarching research question: ***Understanding the dynamics of complexity: new insights for senior leadership practice in one higher education institution in England***		

Figure 10: Summary of methodological instruments and methods, including alignment to research questions

All data was stored on an encrypted data stick, with the original interviewee numbers used to anonymise interview data for collation and analysis purposes.

3.4.1 Data Collection Stage 1: Survey 1

The use of a survey as part of the initial data collection method allowed the gathering of data from across the breadth of the sample group. This first survey (Appendix 3) explored in broad terms leaders' perception of complexity in their university context. Many of the questions were drawn from an existing validated instrument. Details were as follows:

Section 1: About complexity in the higher education sector

- *Researcher-developed questions*

  A small numbers of questions created to establish perceptions of complexity in terms of the wider higher education sector, exploring some of the key influencing factors.

Section 2: About complexity at the University of Sapientia

- *Complexity Assessment Tool (CAT) (Maylor et al., 2013)*

  Whilst this tool was developed and tested with a primary focus on managing complexity in technology projects, the fundamental tenets of the tool appeared more broadly applicable. With the provenance of the tool being grounded in a wider literature review of complexity and also complex projects, and with interviews, workshops, focus groups and case studies undertaken across a range of sectors, the resultant CAT is identified as *"a tool for identifying and assessing sources of complexity"*. Developed by academics at the Universities of Oxford and Cranfield in their respective Business Schools, the tool arguably has a level of academic credibility in terms of its development. As such, and with no other tools of a similar nature evident,

particularly in relation to the higher education sector, the questions offered the best starting point for this type of analysis. The questions were altered to focus on a university rather than a project, with as little change to the construct of the questions made as possible. One of the authors of the CAT was approached and kindly reviewed the revisions to the questions, believing them to be a very workable adaptation.

Section 3: Your details (for analysis purposes only)

- *Researcher-developed questions*

  These researcher-defined questions provided profile data for data analysis purposes in terms of role location, job family, length of service and age group.

Prior to issuing, the survey was piloted by four colleagues within the university who were not part of the Senior Leaders Group, but who were closely connected to it and knew the majority of members of the group. They were therefore able to provide user feedback with the perspective of that group in mind. Minor adjustments were made based on the feedback provided.

Survey 1 was issued on 1 July 2019 to all members of the Senior Leaders Group at that time (104 individuals). The survey was issued online using MS Forms, with the majority of the questions being tick box answers, and the whole survey taking around 10 – 15 minutes to complete. The initial invitation email from myself was endorsed and sent by the University Executive Board member who leads the Senior Leaders Group. This included an Information Sheet (Appendix 1) which explained the purpose of the research, the research process, and what was being asked of participants. I tracked completions and followed up with reminder emails to the group. The survey closed on 8 August 2019, receiving 37 responses.

3.4.2 Data Collection Stage 1: Interviews 1

The second part to the first stage of data analysis still centred on the exploration of leaders' perception of complexity in their university context. This interview stage allowed a more in-depth analysis of some of the questions explored in the initial survey. This allowed personal narrative and insight to be gained which could support, illuminate and add colour to the questionnaire data. As outlined in section 3.5.2, a representative sample of 8 interviewees from the identified group were undertaken.

The interview questions were researcher defined (Appendix 4), with some drawing directly from the first survey, and others focused around the themes from the survey to add more breadth and depth to the narrative. Via a semi-structured interview, additional supplementary questions were asked to explore perspectives further where appropriate. All interviews took place face-to-face between 30 September 2019 and 11 October 2019.

There were 14 questions included in four sections:

1. About complexity
2. About complexity and the university
3. About complexity and your own leadership practice
4. Any other observations

All interviewees were asked to complete a Consent Form (Appendix 2) and as part of this confirmed they had read the Information Sheet (Appendix 1). All interviews were recorded with consent and then transcribed. Each individual interview record was kept, as well as the data being collated by each question response in a tabulated Excel spreadsheet in readiness for coding and analysis.

3.4.3 Data Collection Stage 2: Survey 2

The second survey (Appendix 5) allowed exploration of the second areas of investigation, that of individual and organisational factors which may need to be considered when considering the dynamics of complexity in a higher education setting. Many of the questions were again drawn from validated sources, with the survey covering the following:

Section 1: Leaders' behaviours and complexity

- *Behavioural Complexity Questionnaire (Lawrence et al., 2009)*

  This instrument drew heavily from the work of Quinn (1984) and his Competing Values Framework (CVF). It has a clear focus on individual behaviour rather than organisational behaviour or culture, which is what was needed for this part of the assessment. The CVF defines the behavioural breadth through which managers might act. It considers four quadrants covering both organisational internal and external focus as well as the stability and flexibility of the organisational structure, recognising that different quadrants can compete in terms of the behaviours required, e.g. an external demand for flexibility with an internal demand for stability. In the development of the model the authors considered potential correlations between factors using a circumplex model. These are used widely in psychology to describe similarity and polarity between values. The authors highlighted that the instrument had limitations in terms of its development being based on a small and selected sample size, and that wider applicability should be undertaken with care. An adapted version of this tool was therefore used to establish whether there was a connection between individual cognition and mindset and an HE leaders' approach to understanding and managing complexity. Its relevance to the work

being undertaken seemed more closely correlated than others available, and the instrument was selected on the understanding of the limitations as given.

Section 2: The University's capacity for change

- *Organisational Change Capacity (OCC) - adapted from (Judge & Douglas, 2009)*

  Measuring organisational complexity readiness has proven to be challenging. Whilst models of organisational maturity exist, instruments that measure organisational complexity readiness seem to be lacking. Options for measuring organisational excellence were considered and discounted at this stage as not being as closely aligned. Whilst it could be argued that an organisation that can manage and enable change effectively may not necessarily be complexity-ready, a number of the factors linked to organisational change capacity seem to have similar themes to those needed by organisations in terms of dealing with complexity. The work of Judge and Douglas (2009) exploring organisational change capacity provided the most interesting insights into how this could be assessed at an organisational level. Although not fully aligned to the concepts around organisational maturity, they recognised that organisational change capacity was *"a combination of managerial and organizational capabilities that allows an enterprise to adapt more quickly and effectively than its competition to changing situations"* (ibid p635). In their paper they identified organisational change as a multi-dimensional phenomenon with eight distinct but inter-related dimensions:

  1. *Trustworthy leadership:* the ability of senior executives to earn the trust of the rest of the organisation and to show organisational members the way to meet its collective goals.
  2. *Trusting followers:* the ability of the non-executive employees to constructively dissent with and/or willingly follow a new path advocated by its senior executives.

3. *Capable champions:* the ability of an organisation to attract, retain, and empower change leaders to evolve and emerge.
4. *Involved mid-management*: the ability of middle managers to effectively link senior executives with the rest of the organisation.
5. *Innovative culture:* the ability of the organisation to establish norms of innovation to encourage innovative activity.
6. *Accountable culture:* the ability of the organisation to carefully steward resources and successfully meet pre-determined deadlines.
7. *Effective communication*: the ability of an organisation to communicate vertically, horizontally, and with customers.
8. *Systems thinking*: the ability of the organisation to focus on root causes and recognise the independencies within and outside the organisational boundaries.

These dimensions, drawn originally from the 'Organizational Capacity for Change' (OCC) construct and informed more broadly by literature from the organisational sciences, provided a range of criteria that aligned with organisational factors, all of which have a relationship to enabling organisational maturity. There are useful links in the eight dimensions to the structural and socio-political complexity elements in the tool adapted from Maylor et al. (2013), and also the people, process, change, results elements of the individual readiness instrument from Lawrence et al. (2009), providing an interesting potential for relational factors between the perspectives of individual mindset and organisational maturity.

Care was taken when reviewing the outputs from this part of the questionnaire, with a focus being on drawing out possible areas for further discussion at interview and analysis stages, rather than determining direct causal analysis.

Section 3: The University's capacity for change (continued)

- *Organisational ambidexterity and environmental uncertainty – Gibson and Birkinshaw, 2004 and Khandwalla 1977 in Judge and Douglas (2009)*

  Utilised by Judge and Douglas (2009) in order to measure organisational and environmental factors alongside their OCC approach, it seemed helpful to also include this within this overall questionnaire in order to gain broader insights into leaders' perceptions of the organisational environment that the university was operating within.

Section 4: The University's capacity for change (continued)

- *Organisational performance – Bourgeois, 1980 in Judge and Douglas (2009)*

  Similar to the questions utilised for Section 3, these additional areas of investigation were used by Judge and Douglas (2009) alongside their OCC approach and so were included within this overall questionnaire in order to gain broader insights into leaders' perceptions of organisational performance.

Section 5: Your details (for analysis purposes only)

- *Researcher-developed questions*

  These researcher-developed questions provided profile data for data analysis purposes in terms of role location, job family, length of service and age group.

Prior to issuing, survey 2 was again piloted by the same 4 colleagues within the university who had piloted the first survey. They were therefore able to provide user feedback and minor adjustments were made.

Survey 2 was issued on 28 January 2020 to all members of the Senior Leaders Group at that time (109 individuals). The survey was issued online using MS Forms, with the majority of the questions again being tick box answers, and the whole survey taking around 15 minutes to complete. The initial invitation email from myself was endorsed and sent by the University Executive Board member who leads the Senior Leaders Group. This included an Information Sheet (Appendix 1) which explained the purpose of the research, the research process, and what was being asked of participants in the second phase. It was reinforced that individuals did not need to have completed the first survey in order to complete this questionnaire, as all responses were anonymous and all responses valid. I tracked completions and followed up with reminder emails to the group. The survey closed on 24 February 2020, receiving 37 responses.

3.4.4 Data Collection Stage 2: Interviews 2

This second part to the second stage of data analysis continued exploring themes around individual and organisational factors. It also allowed a further exploration of some of the data that had emerged from the first stage of data collection to gain further insights, providing an iterative approach. As for stage 1, and as outlined in section 3.5.2, the same representative sample of 8 individuals from the identified group were interviewed.

The interview questions were researcher-defined (Appendix 6), with some drawing directly from previous surveys, and others focused around the themes from the stage 2 survey to

add more breadth and depth to the narrative. As a semi-structured interview, additional supplementary questions were asked to explore perspectives further where appropriate. Interviews took place between 29 April 2020 and 8 June 2020. All were conducted remotely (video link) via Microsoft Teams because of the Covid-19 lockdown.

There were 12 questions included in four sections:

1. Follow-up questions from previous data collected, about whether we control complexity and our response to this
2. Leadership behaviours and complexity
3. The university's capacity for change
4. Any other observations

All interviewees were asked to complete a Consent Form (Appendix 2) and as part of this confirmed they had read the Information Sheet (Appendix 1). All interviews were recorded with consent and then transcribed. Each individual interview record was kept, as well as the data being collated by each question response in a tabulated Excel spreadsheet in readiness for coding and analysis.

3.4.5 Data Consolidation Stage 3: Focus group

The final stage in the research approach provided an opportunity to collate the information, drawing out key themes. This was undertaken in collaboration with the leaders who had been involved at each of the interview stages. The 8 interviewees that had been selected to participate in the interviews at Stages 1 and 2 (see section 3.5.2 for selection criteria) were invited to participate, although with the Covid-19 situation scheduling this for such busy people was challenging. The first date booked was postponed

as individuals were struggling to attend, with the second 1.5 hour session on 15 December 2021 achieving 3 attendees, with 2 further individuals giving last minute apologies.

The outcomes of the focus group need therefore to be framed with a degree of caution based on the more limited interaction than expected. However, what was achieved was a validation of the framework that was emerging from the research, and a core theme that seemed to provide clarity and focus in terms of what might need to be a key area of focus for the future.

The process for the focus group was as follows:

- A mind map of all the research findings and a PowerPoint presentation were sent in advance that provided a summary of the research finding in terms of:
    - Research recap: the research questions and what the research was about
    - What do we mean by complexity: what has emerged from the previous stages?
    - Complexity and the HE sector: synthesis and summary of the data
    - Complexity and leadership practice: synthesis and summary of the data, including consideration of the impact of the Covid-19 pandemic
    - Implications for the development of leadership practice in the future: key questions

- The core questions posed, and therefore the conversation in the focus group centred around checking whether the data and findings resonated and made sense; whether there seemed to be anything critical missing; what the overarching picture

was telling us, particularly about the wider issues we might not have seen before; and from this what might be the implications for leadership practice.

- An emergent model which started to bring together future areas of focus for HE leadership based on both literature and data findings was also shared for comment and/or validation.

The focus group took place via MS Teams and notes of the meeting were taken. A technology issue resulted in a failure to record the meeting, which meant coding of the outputs of the meeting could not be undertaken. However, the notes from the meeting were collated into key themes.

3.5 Participants and sample selection

It was important for me to gain insights from individuals who had different lived leadership experiences from across different parts of the university spectrum – not just from academic areas in isolation, but also from the research and professional services leadership communities. Participants needed to be able to relate to their leadership position, whilst still be open enough to explore it. They needed to be willing to participate, be sufficiently reflective and be able to articulate their experience well (Morse, 2010). Given the focus of this research was also at a senior leadership level, they needed to hold a position which was formally recognised as 'senior' within the case study institution.

3.5.1 Full research sample - Surveys

The research sample was therefore identified as the formal collective known as the 'Senior Leaders Group' of the English university chosen as the case study. This group of around 110 individuals represent research, education and professional services areas across the university, including members of the University Executive Board (of which the Vice-Chancellor is a member). They hold no authority or decision-making power, acting more as a leadership collective of those leaders who are positioned hierarchically one level below the University Executive Board. They are instrumental in leading the university and are key to setting the tone for leadership across the university, so any implications for the enhancement of future leadership practice would likely be of interest to them. This sample was used in totality for each of the survey stages, although membership fluctuates as people leave and recruits into new roles are added, hence the sample size changed slightly between questionnaire 1 and 2.

It could be argued that this is a counter-intuitive sample to use, reflecting the traditional leadership methodologies of sampling identified leaders, and at a senior level. With complexity leadership thinking recognising the role of leaders, but also recognising that leadership is enacted anywhere in the system, it may have seemed more appropriate to sample individuals from across the university at differing (leadership) levels. This was considered in an earlier design approach, but was discounted for the following reasons:

- *Scale:* in order for the data to reflect the view of leaders at all levels everywhere, a very large sample would be needed as the university in question is amongst the largest in England in terms of staff and student numbers. This potential approach caused concern in terms of viability within the boundaries of this professional doctoral research study for time and resource reasons.
- *The need to establish a starting point:* whilst an expansive university wide sample may have given a richer picture in terms of data, the current organisational design of the case study university has existing systems, processes and governance mechanisms which are familiar to the current framing of university decision making. Working within this frame, although a potential methodological risk, allows a starting point from which the research can evolve. Ultimately, if there is any opportunity for learning from this research to have an impact on the university, then it is suggested that it is this leadership group who must first establish a knowledge and understanding of any outcomes and implications.

Whilst there were clear advantages in terms of accessibility, clear identification of the group in terms of senior leadership level, and also agreement had been given to engage with this sample group, a key challenge was also the sample size. With just 109 individuals as the starting point a low response rate could impact on the validity of the data gathered

and would reduce the potential to correlate data by job family or other characteristics. The potential to broaden the research population to engage a wider general staff population from the university was considered, although the link to leadership role, responsibility and practice would have been harder to define. By adopting an iterative phasing to the research approach, and including questionnaires, interviews and a focus group, it was anticipated that there would be enough opportunities to explore and validate any data that emerged that might need further attention, allowing a sensitising of concepts and an exploration of patterns in narrative to be explored (Charmaz, 2006). Given a key focus of this work also relied on understanding complexity based on individual leaders' lived experiences, it was hoped that the insights gathered would hold credibility if retained at this leadership level.

3.5.2 Sub-sample - Interviews

A sub-sample of this group was selected to take part in the interviews and focus group. The sub-sample was chosen by taking the Senior Leaders Group mailing list (109 individuals at the time of sampling for interviews) and choosing a random sample that included representation of individuals with the following characteristics:

- University Executive Board members (UEB)
- Balance of job families at this level (job family)
- Mix of roles e.g. academic, research, professional services etc. (role type)
- Male / female balance (gender)
- Balance of longer serving / newer to the University (length of service)

These characteristics were chosen to enable a broad range of voices and lived experiences to be included, with differing perspectives, tenures and professional expertise represented

where possible. Inclusion of ethnicity balance was discounted as the overall sample group did not have a vibrancy of ethnic diversity, and so whilst this was a desired sampling criterion, it was not practicable to achieve.

All individual records were anonymised with each provided with a number. Records were searched and sorted against the specified criteria. Initially every 5th record was shortlisted (numbers ending in either 5 or 0) and reviewed against the criteria for suitability. Where a criterion was over or under-represented a closer search of records for that specific criteria was made and additional records were added. This was particularly the case for roles from the research role type which had low initial representation in the first sample created.

Individuals were then approached and asked whether they would be willing to participate. Individual 35 was not able to participate due to workload, and individual 100 not able to participate as they were leaving their role in a few months' time. This would leave the academic role and R&T job family less represented.

To replace individual 35, records were searched and matched to the characteristics required. Sixteen records matched. Six were discounted as the individuals had left the Senior Leaders Group or their term of office was due to end within the coming 12 months. Of the remaining 10 records there was one match for an individual in the same Faculty as individual 35, so record 21 was chosen.

To replace individual 100, records were searched to match to the profile of this record, and only 5 records matched exactly. One record was for an interim role holder and another for

someone who was due to be stepping down from post shortly. Record 76 was therefore matched to record 100 and inserted to replace this individual.

Individuals 65, 81 and 21 agreed to participate, however were unable to find diary time when it came to arranging the interviews, so were discounted from being part of the final interview sample.

This final sample profile provided a range of voices from across the senior leadership grouping on the university. Some had strategic pan-university roles; others had more specialist roles; one had a pan-university specialist role which provided a significantly different (and intriguing) perspective to the others, potentially providing what might be considered as a 'forgotten voice'. The differing lengths of service also providing interesting differences, as newer colleagues compared their current experiences with their most recent experiences often outside the sector, which often provided a differing benchmark to their reflections. The sample appeared to provide the desired strength of range of voice and perspective, with the exception of any additional insights that may have been gained from a greater cultural diversity of sample members.

3.6 Data analysis

The use of a grounded theory approach enables and encourages a constant comparative process in which data collection and analysis happens simultaneously. This approach was utilised throughout this study with several stages to the data analysis process.

3.6.1 Data Collection Stage 1: Survey 1

The outcomes from this initial survey stage were reviewed in two stages immediately after the survey was closed. The initial data analysis included the creation of a set of graphs and the collation of free text comments for questions where this was requested. As the data was created using MS Forms, the output was downloaded via a Microsoft Excel spreadsheet, and initial graphs were created in this document prior to transfer to an 'initial data analysis' word document.

The second step involved a more detailed analysis of the data, still prior to the first interviews taking place. This more detailed data analysis included comparative analysis, such as reviewing whether individuals' perceptions of whether higher education was complex or not was influenced by which job family they were part of or their length of service. A more detailed analysis of the CAT data was also undertaken, and a further discussion with one of the CAT authors, Neil Turner from the University of Cranfield, was held to explore whether the data analysis and interpretation was in line with the intention of the original approach. Elements worthy of further explanation were noted on the stage 1 survey analysis to be explored further in the stage 1 interviews.

3.6.2 Data Collection Stage 1: Interviews 1

All interviews were recorded and transcribed. Each individual transcription was held in a word document, although once all interviews had been completed, answers to each question were transferred to an Excel spreadsheet in a question by question tabulated format. All responses were anonymised and interviewee numbers denoted which response related to which interviewee.

Open coding analysis included breaking down the text into segments of data and assigning thematic codes which described the meaning that was included within that data segment (Charmaz, 2006, p. 46). On occasions multiple codes were needed (up to 4), and these were represented in separate columns against the segment of interview text. Where themes started to be repeated the same theme type was used, with some adjustment to themes as the analysis progressed and meaning became clearer. The language of the individuals was held onto as much as possible at this stage (rather than generalising) to allow the sentiment and nuances to come through.

Once all coding had been completed for all questions, where multiple themes existed the interview text was replicated so that the different themes were all represented in one column. The frequency of these themes was then reviewed and key factors elicited from these, with axial coding used to establish any thematic relationships. Graphs were produced to summarise the initial analysis based on all of the themes identified at this stage.

Finally, a focused thematic coding approach (Charmaz, 2014) was then adopted whereby each question was reviewed to consider the themes that had emerged. Those themes that

were shared by a number of interviewees were identified as key, and others were considered in terms of common themes / aspects so that they could be consolidated under fewer theme areas. These key emergent themes were then listed for each question, prior to analysis and cross-checking with the questionnaire stage. Themes at this stage remained emergent from the data rather than connected to the literature to allow for the language and sentiment of the individuals to come through, and also reflecting a closer fit to the emergence within a grounded theory approach. This analysis phase was completed for all interviews once all interviews had been completed and prior to the next data analysis step.

3.6.3 Data Collection Stage 1: Consolidation and Comparative Analysis

Stage 1 (survey and interviews) sought to understand and seek responses which would help to illuminate the following sub research questions:

- *Do senior leaders within one higher education institution perceive the higher education environment to be more or less complex, and what is the rationale for this understanding?*
- *How do leaders perceive complexity in one English higher education institution, including the relationship between organisational and individual factors?*

A more detailed comparative analysis of all of the stage 1 data was therefore undertaken once stage 1 had been completed, and prior to stage 2 starting. This stage formed part of the constant comparison approach (Cohen, 2011) used for this research, where an on-going review of data at coding level and at a broader category and theme level was undertaken iteratively.

Comparative analysis notes were created as an initial output of this stage with sections created summarising the themes and responses as follows:

1. About complexity in general terms (interviews)
2. About complexity in higher education in England (questionnaire and interviews)
3. About complexity at the University (questionnaire and interviews)
4. Complexity and leadership practice (interviews)
5. Any other observations (questionnaire and interviews)

From this, initial insights started to be gained which informed the shaping and direction of some of the stage 2 research elements.

3.6.4 Data Collection Stage 2: Survey 2

The same approach for stage 2 was adopted as for stage 1, with the basic data analysis including the creation of a basic set of graphs and the collation of free text comments for questions where this was requested. These were used to create a 'basic data analysis' word document. The second step again involved a more detailed analysis of the data, still prior to the second interviews taking place. This more detailed data analysis included a closer look at the responses within and across the Competing Values Framework, reviewing where there was strength and weakness demonstrated. This led to questions which were then included in the stage 2 interviews to be explored further.

3.6.5 Data Collection Stage 2: Interviews 2

The same approach in terms of data analysis was adopted for the stage 2 interviews as it had been for stage 1. All interviews were recorded and transcribed, with each individual transcription held in a word document, although once all interviews had been completed, answers to each question were transferred to an Excel spreadsheet in a question by

question tabulated format. All responses were anonymised and interviewee numbers denoted which response related to which interviewee. The initial analysis and focused coding approach, completed after the interviewees has been undertaken, followed the same pattern as for stage 1.

3.6.6 Data Collection Stage 2: Consolidation and Comparative Analysis

Stage 2 (survey and interviews) sought to understand and seek responses which would help to illuminate the following sub research questions:

- *Do senior leaders within one higher education institution perceive the higher education environment to be more or less complex, and what is the rationale for this understanding?*
- *How do leaders perceive complexity in one English higher education institution, including the relationship between organisational and individual factors and the implications for their own leadership practice?*
- *What are the implications for the development of leadership practice for the future?*

A more detailed comparative analysis of all of the stage 2 data was therefore undertaken once stage 2 had been completed, and prior to stage 3 being undertaken. This again formed an ongoing element to the constant comparison approach (Cohen, 2011) used for this research, where an on-going review of data at coding level and at a broader category and theme level is undertaken iteratively.

Comparative analysis notes were created as an initial output of this stage with sections created summarising the themes and responses as follows:

1. Follow-up questions: whether we can control complexity and our response to this (interviews)
2. Leadership behaviours and complexity (questionnaire and interviews)
3. The university's capacity for change (questionnaire and interviews)
4. Any other observations (questionnaire and interviews)

From this, further insights started to be gained which informed the shaping and direction of the final stages of the research.

3.6.7 Data Collection Stages 1 and 2: Integrative Consolidation

With such a wealth of data, and being dyslexic and therefore having a preference for tools which support visualisation of data, I created a mind map which brought together all the different outcomes from consolidated documents produced from the data from stages 1 and 2. The core branches of the mind map were based on the main research questions and included the differing elements used at each stage, thus allowing relationships between different elements of the data to be made within these contexts. The main and sub branch headings were:

1. Complexity and the HE environment
    a. Complexity in general terms
    b. Complexity in the HE sector
    c. Controlling and managing complexity

2a. Complexity in one HEI

- Complexity factors I
- Complexity factors II

2b. Individual and organisational factors

- Organisational factors
- Collective leadership group
- Individual leaders
- Individual leaders Covid-19 impact
- Future behavioural responses post Covid-19
- Organisational factors: Covid-19 impact

2c. Implications for personal leadership practice

- Impact of complexity on individuals' leadership practice
- Covid-19 learning

3. Development of future leadership practice

An example extract from the mind map is given in Appendix 8.

Key themes under each heading were identified, and further subbranches added which represented the key themes of the data being reviewed. When printed it provided a unique one-page summary of all of the key research findings categorised by research question.

3.6.8 Data Collection Stage 3: Focus Group

The final research stage comprised a focus group. Because of the impact of the Covid-19 pandemic it was difficult for senior leaders to prioritise their time to engage with this activity, although it did go ahead with fewer attendees than had been anticipated.

Cohen (2011) highlighted that focus groups are not without their challenges in educational research contexts. Whilst the attendance was not as high, the potential range of views in the conversation was not as expansive as hoped, and the lack of recording preventing more reflective note-taking of the outcomes, the session did achieve the desired requirements of validating the data and identifying an overarching focal point (the importance of purpose). The lack of recording, which was only noticed after the event, did mean the detailed nuances of the conversation could not be reviewed. However, detailed notes had been taken which captured the main ideas stated. These have been used to inform the findings, although less emphasis has been placed on this evidence in comparison to the interview and survey data.

3.7 Methodological dilemmas and limitations

With the focal point of higher education as the selected domain for this research, and in particular the higher education institution within which I have been employed, this automatically presented a key methodological dilemma. Johnson (1994) highlighted the strengths and weaknesses of undertaking research in one's own institution. With the advantages of accessibility to individual participants and a pre-existing knowledge of context and areas of sensitivity, there are also disadvantages of absolute impartiality and detachment from both the people and the context. This can lead to non-disclosure by some participants, or confusion about personal job role and adopted researcher role. Holmes (2020) also considered the dilemma of positionality, i.e. the position a researcher has chosen to adopt within a given research study, recognising that this has the potential to impact on all aspects and stages of research. He suggested three ways through which researchers can identify and develop their positionality, which I found helpful in reviewing and addressing this methodological dilemma.

Firstly, locating myself in relation to the subject – I acknowledged and was open with my research participants (and supervisors) that I had a wealth of experience and knowledge related to organisational excellence and the interplay between individuals and organisations. However, I recognised that this was established through limited lenses, and had not been informed by complexity thinking or the more detailed exploration that I had planned. To minimise this, I consciously and actively aimed to distance myself from the results of the survey and interviews as they were emerging. I aimed always to bring my researcher curiosity to the fore, following faithfully the categorisation and note-taking approach in order to allow key themes to emerge, rather than being forced by my own perspectives. I believe the research is therefore an honest reflection of the data gathered.

Secondly – locating myself in relation to my research participants. Whilst I knew all of my interviewee respondents, my role of researcher was known and respected by all who engaged in the interview process. By using semi-structured which I had formulated in advance, I was able to reduce the risk of bias by keeping a clear focus on the questions, aiming to elicit the narrative of the individual. Any follow-up questions focused on exploring any points made by interviewees and eliciting further insights. The surveys also allowed information to be gathered in ways where data could be anonymised. By reducing direct personal interaction with the individuals who were providing this data, I allowed for greater impartiality to this part of the data collection and analysis process.

Whilst I could have chosen an alternative higher education institution where I was not known, this was discounted for two key reasons. First, for practical and accessibility reasons – it would have been harder to access an alternative HE institution to the depth and breadth needed. Secondly, for learning implementation reasons – the aim of my research is to support and enhance the application of learning in practice, thereby research supporting the development of my own professional practice and leading to more informed understanding of the leadership landscape in which I am working in order to enhance and improve it further.

Finally, my location in terms of the research context and process i.e. recognising that both myself and the context are likely to influence my research in some way. Being clear on the focus of the research and not straying into wider areas, as well as not pre-judging or bringing too many of my own views into the research work given my prior knowledge was important. I also acknowledged that the circumstances within which my research was taking place were changing (e.g. because of Covid-19) and therefore my research approach

needed to change to accommodate this. As far as I was able, I took a reflective and reflexive approach, considering my learning and the context and what this meant in terms of my own research practice, and also considering the implications this might have on my research process and outcomes. This was iterative throughout my research and whilst I am not able to determine the level to which I was able to keep my positionality in balance, I feel I consciously attended to this dilemma as best I could.

The first methodological limitation to be addressed is the fact that the methodological framework used for this research could be viewed as having limitations or providing a specific view of the issues investigated and the data collected. It could be argued that utilisation of a mixed-methods approach is based on a philosophical mindset that acknowledges complexity and engages multiple viewpoints (Creamer, 2016), and as such the research methods employed automatically assume a level of complexity. Whilst there may be some truth in this, the use of methods that were grounded on emergence, iteration, and the ability to step into and away from the data was right for this study. Other studies that take a dialogic, narrative or more logo-scientific stance may be able to expand and add to the learning in this research. I believe that analysis from many angles adds to rather than detracts from learning.

The second methodological limitation was that of scope. The scope of my research was limited by time, which affected the size of the research sample chosen, the choice of using only one university rather than several for comparative analysis, and the breadth and depth of the literature review. A key limitation to this single case study based approached is the transferability and generalisation of the learning to other HEI contexts. With the dynamics of universities in the UK, and beyond, being different to this case study university

(particularly given this research considers the dynamics between the individuals, the organisation and their context – all of which will be different) it could be argued that learning from this research is limited. However, my hope is that there will be enough commonality of issues, themes and learning illumination for leaders in other HEIs to consider aspects of this research which may resonate with them, enabling them to test out aspects of this learning in their leadership practice – thus continuing the research on an informal basis.

Focusing on just the Senior Leadership Group also provided a limited scope meaning that it has not been possible to assess the perceptions of more dispersed leaders or leadership groups, including those on the 'front-line' or at differing leadership levels. Again, it may be possible to consider outcomes and adapt to these differing leadership contexts over time, noting elements which may generalise well, and others that require adjustment and/or further research to explore more deeply.

The third limitation was response rate to the questionnaires, being only 37 at each stage. This could be seen to be limited in terms of the data gathered and could call into question the validity and quantitative robustness of the data. However, many of the responses showed good correlation, and with the questionnaires being only one of three sources of data collection, it was felt that they provided a useful triangulation and additional nuancing to the overall analysis. The validity of stating that a mixed methods approach was used could also be called into question given the qualitative data was foregrounded over the quantitative data in the development of the conclusions for this research. In reality, the intent to utilise a mixed methods approach was actioned in the research phase, with the

conclusion of the research utilising all of the outputs although pragmatically recognising that the richer responses came from the qualitative data.

The impact of the Covid-19 pandemic provided both a dilemma and an opportunity for this research. I was fortunate in that I did not need to make any significant methodological changes to my research approach. I did adjust my interview questions for the final interviews to check whether changed circumstances would have invalidated or significantly altered my previously collated data, and I did use MS Teams for my focus group, rather than holding the session face-to-face.

Finally, as someone who lives with dyslexia, I have more difficulty interrogating numbers and using analysis tools such as NVivo, which I did review and then discount. This influenced my choice of using more narrative based coding methods and basic data analysis / graph creations in excel, as well as the use of mind mapping. My analysis methods may therefore have been limited by such factors.

3.8 Ethical considerations

A range of ethical considerations have been taken into account based on the methodology chosen. A full ethics application was submitted as part of the Confirmation of Research Study process and was approved in line with the School's ethics process, which adheres to BERA requirements. The main areas for ethical consideration included:

- *Informed consent*: the invitation to participate in the research was sent initially by the University Executive Board member who has oversight of the Senior Leaders Group. This provided organisational endorsement for the research, including reinforcing the voluntary nature of participation. For those who did participate, a request for signed

permission was requested by all interview and focus group participants to ensure they were comfortable with not just what they were being asked to engage with, but also the methodology, approach, potential outcomes and their use. This informed consent (Appendix 2) included an explanation of the rights that participants had as part of the research, including the right to withdraw at any time, the right not to answer any questions, and the right to confidentiality.

- *Anonymity and confidentiality:* participants were provided with the assurance that their responses would not just be treated confidentially (except within the boundaries of the focus group session where re-contracting as a group was needed) but that they would also remain anonymous as part of the reporting process. All data collected has been held on an encrypted data-stick to ensure data security and integrity.

- *Impartiality*: separation between my 'role at work' and being a 'researcher at work' could have caused concern for some individual participants if they believed that their engagement might impact (positively or negatively) on any other aspect of our working relationship. For example, an individual may enthusiastically agree to participate with my research believing that this may allow them preferential treatment in terms of acceptance onto the Leadership and Management Academy programmes for which I am responsible. This was not the case, and I took care to ensure separation of roles and the impartiality with which this research was being undertaken. As many of those responding have either taken part in research work or are familiar with the research/researcher environment, the impartiality of my role was well respected.
- *Equality, Diversity and Inclusion:* ensuring all members of the Senior Leaders Group felt able to contribute to this research was very important. Ensuring the information and

approach was tested and was available to individuals in a way in which was appropriate to their needs was taken into consideration at all stages in process. The questionnaire and interview questions were all available in alternative formats should they have been needed.

- *Access to outcomes:* contracting with individuals at the beginning of the process in terms of the outcomes that may emerge as a result of their engagement was important. As a minimum I committed to sharing a summary of my final work with all interview participants (who were the only identified participants), as well as inviting all members of the Senior Leaders Group to a presentation of findings event at an appropriate point (subject to internal approval).

3.9 Chapter summary

This chapter outlines the rationale for the overall research design as well as the detail of the design and analysis of data at each stage. With multi-dimensional lenses needed to explore complexity, higher education, individual cognition, organisational maturity and leadership practice, a grounded theory-based approach provided the ability for interconnectedness to be explored and for the traditional boundaries of research to be stretched. The contribution to knowledge from this research includes that fact that this methodology takes account of, and captures lived experiences and perceptions of the participants. The interplay between the individuals and their environment has been a significant driver for this work and has been of particular relevance over the latter part of the research collection period.

4 Results

4.1 Introduction

Reviewing the results from the three-stage research approach that spanned from 1 July 2019 to November 2020 has been an interesting process, not least because of the occurrence during this time frame of potentially one of the most complex global events in recent history: the Covid-19 pandemic. Having undertaken the first survey and set of interviews, and also the second survey prior to the pandemic's arrival, the final set of interviews provided the opportunity to check to some extent how much people's perceptions had changed about complexity, the higher education sector and their leadership response. This stage, and the third consolidation stage, allowed a point of reflection back through some of the findings to calibrate how relevant they still were, or whether the landscape had changed so significantly that they were perhaps not reflective of current and potentially future lived experiences. It was heartening to hear that whilst the landscape had certainly shifted, the learning from the research had not. In many cases the Covid-19 context had brought to the fore, and even brought to life, some of the factors highlighted in the earlier research, rather than diminishing them.

This chapter presents the results gathered, walking through the main themes explored and highlighting key areas emerging. Findings from the different research stages are presented in relation to each of the research questions in order to provide a focus from the wealth of data collected. Whilst initially it was anticipated that both qualitative and quantitative data would both provide equal depth of insight, the reality of the lower level of quantitative data captured meant that this was used to add additional insight, including providing specific themes and factors which were utilised in the resultant model developed from this research. The role of the quantitative data at analysis stage therefore adopted more of a

triangulation role, reinforcing and being reinforced by themes emerging from the literature and the qualitative data (Flick, 2018). In this way the quantitative data still holds relevance, supporting the validity of the overall knowledge claims as part of an integrated data analysis approach. Conversely, the qualitative data from the interviews, which provided a richer narrative, has been foregrounded and was also used to triangulate some of the quantitative data. Adaptions made to the interviews to take account of the Covid-19 pandemic were also able to be highlighted. Chapter 5 then considers the implications of these findings and their relevance to the Covid-19 context (and beyond) that we find ourselves in today.

4.2 Alignment with the research questions

As highlighted in the previous chapter, the data collection methods were aligned to each of the three research questions, which when considered in totality sought to answer the overarching question for this research study. The presentation of the results has therefore been aligned with the research questions, provided as a reminder here in Figure 11:

Research questions addressed	Data collection stage
1. Do senior leaders within one higher education institution perceive the higher education environment to be more or less complex, and what is the rationale for this understanding?	• Data collection stage 1, augmented by Data collection Stage 2
2. How do leaders perceive complexity in one English higher education institution, including the relationship between organisational and individual factors?	• Data collection stages 1 and 2
3. What are the implications for the development of leadership practice in the future?	• Data collection stages 2 and 3

Figure 11: Alignment of research stages with research questions

4.3 Research question 1: Complexity in higher education

Research question one aimed to consider more broadly the higher education sector, considering leaders' perspectives about the level of complexity they felt existed and the factors and reasons for these perceptions. The starting point for this focused around the nature of complexity itself, its definition, whether it could be controlled or managed, and the factors that made things seem complex.

4.3.1 About complexity in general terms

When considering how to define complexity in the first interviews, the majority of respondents stated that complexity was multi-dimensional, something that had many factors, some of which could be competing. Individuals also described complexity as having a level of interconnectedness with the interaction of multiple variables / facets.

> *"Complexity is having lots of things that are somehow interconnected, and sometimes not, not always clear about how they fit together."*

> *"Complexity is a knotted ball of wool….. if you pull on one thread then some other threads will come undone somewhere else."*

They observed, however, that the cause and effect of these interactions was not always clear as variables could impact on each other in unknown ways. Interviewees felt that complexity required effort to understand and navigate through.

4.3.2 Complexity factors - general

In terms of some of the factors that make things seem complex, there were a range of areas commented on. Three themes occurred most frequently in interview responses:

- People and culture, including people having different abilities, interactions, perspectives, expectations, emotions, behaviours, beliefs and values
- When things or situations are not easy to understand, analyse or recognise as some things are hidden / not seen (there can be a lack of clarity or things are unknown)
- When there are multiple interconnected often moving parts, usually across multiple boundaries with multiple nodes

> *"Wherever people are involved things get complex – we are all complex."*

> *"Say you take people and feelings and values out you just base it on information you can still get a huge complex spider web of information once you layer all those other things on as well, which makes it truly truly complex."*

Different interviewees also highlighted additional factors, such as having competing rules, demands, evidence and regulation; whether there was stability or instability of the environment or system; and the pace and speed at which the system operated. The size, shape and scale were also considered to impact on complexity. One respondent noted that often organic growth over time has meant that different parts have been added which are now not fully understood, and there can be an inability or unwillingness to simplify this.

When considering whether complexity can be controlled, managed or changed in a professional setting, the majority of interview respondents felt that complexity could be managed. Just over half felt that complexity could be understood, with around half believing that complexity could be changed and controlled. Some individuals felt there could be a simplification of the narrative to make complex issues / things more understandable, others felt complexity could be reduced, simplified and described more effectively through considering its component parts.

> *"….it's possible to describe a complex system in terms of its component parts without necessarily changing it, or being able to change it…."*

4.3.3 Is the sector complex?

Having considered complexity in its general form, the next area of focus was to consider complexity in the context of the higher education sector in England. There was overwhelming agreement that the HE sector is complex, with 34 out of the 37 survey responses answering 'yes' and 7 out of 8 interviewees also confirming positively. Those individuals who suggested that the higher education sector was not complex had all joined the university in the last 5 years. They felt that the complexity of the sector was subject to personal perceptions, which could mean that complexity is being overstated and the sector might not be as complex as we think. Those who had experience of other sectors, such as the health sector and the aviation sector, found that the HE sector seemed less complex because if things go wrong there is usually not such an immediate impact to life as there might be in the NHS or in the airline industry – there are fewer mission critical / safety critical drivers. Complexity was in these cases considered in terms of ultimate impact - i.e., loss of life.

4.3.4 Complexity factors – sector specific

In considering some of the reasons why the HE sector is complex, a number of key themes emerged from the interview data.

Policy, regulatory, funding, political and other external factor changes have on the one hand provided clarity to the sector and on the other led to competing dynamics and

pressures. Some respondents felt there had been increased political interventions from government leading to a simplified notion of what a 'good' university looked like, which was not helpful. For others, government initiatives such as the Research Excellence Framework (REF), the Teaching Excellence Framework (TEF), degree level apprenticeships and changes to the funding model have added challenges to how and what universities can prioritise, complicating the types of skills needed by staff and making more complicated the 'product' base of universities, including what they stand for. Changes to overseas policies and freedom of movement, the increased levels and pace of change in the political landscape, and the shift to greater levels of public scrutiny through the media were also highlighted as key factors. Alongside this there was felt to be an increased burden of self-regulation across the sector, including the need for many universities to manage the complexity of needing to abide by hybrid laws that apply to both charities and commercial businesses, a factor that hampers decision making and governance arrangements in a number of areas.

Financial and funding changes were also noted as a key factors impacting on the complexity of the sector, with the resultant changes in demand this has placed on research, teaching and commercialisation. It was felt that this has led to competing demands within universities, and the notion that universities now need to be managed in a more business-like fashion. Uncertainty over student funding, fees and the whole financial model that universities are working to, coupled with the changing nature of the student demographic and the uncertainty in terms of the diversification of funding streams were all cited as being of significance.

Changing expectations on the sector from parents, students, employers, government and other stakeholders was highlighted as significant. Interview respondents commented on the complexity that comes from managing these complex stakeholder relationships, many of which have competing demands. They outlined their impression that universities now need to perform more and more different functions and that this was leading to a re-alignment, or even a mis-alignment, of university purpose(s). This was potentially leading to people having different focuses and priorities, some of which may seem to be competing. This was also seen as potentially leading to conflicting ideals: university as a community vs university as a business.

Sector competition was identified by around a quarter of interview respondents as being important with increased competition, including marketisation, globalisation and new competitors to the market. A growing diversity of types of providers (on-line, modular, specialised, apprenticeship degrees, private providers etc.) were also cited. Marketisation was highlighted as bringing tension to the sector, leading to competing expectations – business model vs educational institution; employability vs the desire to educate people as individuals. Competition for both staff and students were also noted as increasing in importance and difficulty.

Interview respondents felt there was a growing cynicism towards the sector in terms of the value that it adds, there being an increasing move towards 'value for money' and employability. The changing relationship with a much wider student population who have greater variety of needs, expectations and demands were also noted.

> *"Sector as a whole is complex, because on the one hand to be a university is to be an educational institution, it is to be an institution with a social responsibility which is probably local, regional, national and international. It's to be a major employer and run something like a small town. At the same time as being an educational institution it has to function like a business. It has to meet all kinds of requirements which are not its own priorities but are set by various government or quasi government institutions. Its marketing is really complex nationally and internationally. There are lots of tensions between things – right thing from one perspective is not right thing from other perspective, so having to weigh up competing prioritise all the time."*

Additionally, individuals also commented on the fact that the changing role, pace of growth and remit of universities is leading to greater difference between universities with different choices being made by each university. The sector is becoming even more individualised / autonomous rather than homogenised, adding complexity to the sector as a whole as universities grapple with multiple purposes. The size of many universities is also changing, with a number growing in size and reach, including developing institutional partnerships internationally and/or in other UK locations, adding to the complexity of their operating infrastructure.

The changing culture of the sector is also providing a real complex challenge across the sector as a whole, including where there is a shift from a more personalised approach (e.g. academic areas managing the direct relationship with students across the whole student life cycle), to a more automation focus where greater technological interventions (including the use of artificial intelligence) is shifting the relational dynamics. The massification

agenda and the introduction of university wide systems for recruitment and management of the student life cycle, rather than systems held by academic administrators locally as has been previous practice, has been a fundamental operational and cultural shift. Different cultures, behaviours and ways of working in universities are changing over time.

> *"The systems are trying to manage the expectations of delivery but they are taking away the individuality of things. In some respects that's good in other respects it's not so good. The purity of an idea, or the purity of the service that could be given to students is lost, but you have consistency. A lot of it is about delivering consistence, certainly at student level and then making that consistency as good as possible, so the experience is trying to be getting better, but the consistency is the initial thing that people will go for, so everyone is trying to do the same thing."*

The impact of new digital technologies and the opportunities presented by information, data and knowledge management was at the forefront of respondent's minds, especially through the pandemic. The emergence of new systems, the debates about online teaching and marking, the use of artificial intelligence and the increased focus on the management and use of data for student profiling, recruitment and institutional risk management are all seen as areas receiving increased focus. Interestingly the rapid organisational and cultural adaptations made as a result of the Covid-19 pandemic that accelerated online teaching has created a step-change in this area. Sustainability, on-going measurement of quality, and the impact on the student experience are all areas of unknown impact though, and so further research into whether this has added to or removed a level of complexity would be interesting to consider.

International market changes mean that rather than being a local or national market, the higher education sector in England is very much part of a global education system, particularly in funding terms where the recruitment of international students has a significant impact on university finances. The regulatory frameworks surrounding research including the measurement of impact and the focus on collaboration (national and international) has also shifted the focus on how English universities interact and are impacted by international markets. The Covid-19 pandemic brought this into sharp focus, with an immediate cessation of international travel and a legacy of uncertainty around international mobility.

Internally created complexity and confusion was highlighted as being very real in the sector, as universities are not necessarily well structured; they can be difficult to navigate and often have different decision-making structures, even within their own boundaries. Whilst not necessarily intended to be homogenous there is a sense that the organic growth of many universities, particularly those that have been in existence for substantial periods of time, have made it difficult for more agile ways of operating to be introduced. Legacy governance structures, committees, rules and regulations are perhaps being challenged now more than ever before, although this in itself is leading to uncertainty.

The alignment / misalignment of different stakeholders, including responding to their priorities, demands, focus, views and motivations is linked in part to the changes in regulatory and government agendas and interventions, although in part it seems that there is a wider public voice (often through the media) that can add complexity, if not chaos, to the way universities operate. Recently the very public scrutiny of Vice-Chancellors' pay and

the unionised debate about pensions and working hours / contracts have sparked consternation across the sector.

Individuals are professionally bound to be individualistic, embracing academic freedom, autonomy and freedom of expression. In a sector which has historically recruited and promoted individuals (particularly senior academics) based on their personal knowledge, subject expertise and their ability to express these in an individualistic way, the cultural dynamics within the sector can feel quite different to that of other sectors, even those with similar areas of what might be described as 'professional practice', such as the NHS and the blue light services. Academic freedoms of expression, investigation and debate have long been held as privileges which are a core underpinning tenet that defines the sector. Alongside the many benefits of these freedoms also comes a tension between individual, collegial and 'corporate' endeavours.

There are therefore a range of factors which are emerging that give insights into the complexity of the higher education sector. Based on the literature, many have common features with other sectors, although some appear more unique. However, it is likely to be the combination of these particular factors and the inter-play between them that are determining the very specific complexity conditions that the sector is experiencing.

4.3.5 Is the level of complexity changing?

When questioned prior to the Covid-19 pandemic, the majority of interview and survey respondents felt that the complexity of the sector was changing.

- *Over the past 3 - 5 years:* 30 out of 37 respondents completing the survey, and 7 out of 8 of the interviewees believed that the HE sector had become more complex, although 5 survey respondents believed it had the same level of complexity.

- *Over the next 5 – 10 years:* 7 out of 8 interview respondents felt that the sector is likely to become more complex in the future, with reasons given including the development of new teaching models e.g. micro-credentialing; greater inter-disciplinarity; summer schools; dual intakes and a wider range of qualifications. Broadening the university's focus away from core business (through the introduction of conferencing, accommodation, and other income generating activities) were also highlighted. Alongside this, government intervention, policy changes and different ways of working within and across universities (collaborations, partnerships, mergers) were noted. The changing nature of the student body; new competitors locally and globally, and the changing drivers from new technology were all referenced as likely to have an impact. Five respondents commented on looking at our *"DNA"* or *"circuit board"* and considering how we might need to *"wire things differently so that we can come up with new solutions".* This seemed to be because *"as a country we don't know what we want universities to be – whether it is to be an FE college extension, whether we want them to be drivers of social change, whether we want them to be research powerhouses, all of that. I don't think we know what we want that's why I think we are at an inflexion point and hopefully will come out of this inflection point with a better understanding of where we want to be and that could drive a drop in the amount of complexity."*

The overall picture for the sector is therefore one that is complex, influenced by a host of external, internal and individual factors. The level of complexity people expect to have to deal with in the sector is expected to rise, although individuals describe complexity in general as something that can be managed and that universities will need to adapt to in the future, whilst being clear on what is being taken forward from the strong heritage of the past.

> *"I think there will always be a strong need for the heritage and the traditional values around the university. I don't think they are going to become extinct or anything. But I think they are going to have to adapt their behaviour, their operating practices, their service offer to remain competitive in what I think is an increasingly more complicated world."*

4.3.6 Research question 1 summary

The evidence therefore seems to suggest that leaders within one higher education institution *do* perceive the higher education environment to be complex, with the majority indicating that it is likely to become more complex in the future. Respondents highlighted a range of factors which have influenced this understanding, with the main concerns focusing around external environmental factors, whilst also recognising that complexity can also be created internally. Whilst most felt complexity could be managed, some also believed that it was subject to personal perception.

4.4 Research question 2: Complexity at the University of Sapientia - organisational/individual factors

Research question two aimed to consider in more detail complexity in one English University – the University of Sapientia (a pseudonym to protect the identity of the university in which the research took place). This case study example has been used to explore the university more closely in terms of complexity, considering firstly whether the university was actually a complex organisation, and then considering some of the factors as to why this might have been the case. In particular this research aimed to look at the organisational and individual factors that might impact on the nature of this complexity. Through this, deeper insights upon which future implications for leadership practice could be grounded were hoped to be gained. The starting point was to consider complexity at the University of Sapientia itself.

Organisational complexity factors

4.4.1 Organisational complexity - is the University of Sapientia a complex organisation?

Individuals who were interviewed were invited to consider whether the university was a simple or complex organisation. All respondents felt that the university was a complex organisation. Over half of the respondents noted that the size and structure of the university added to its complex nature. The breadth and diversity of activities, including a growth of non-core provision (e.g. commercial activities, not just teaching and research) was also highlighted as adding to its complexity. A number of respondents mentioned the fact that the university had different cultures and different ways of doing things, as well as continuously needing to deal with cultural change.

> *"As an organisation we are complex and that really has to do with the breadth and diversity of all the things that we do"*

It was also noted that the university had complicated organisational and management structures which have grown organically over time, often with multiple parallel processes in place to achieve the same outcome. One respondent commented that for Sapientia this might have been because:

> *"Russell Group universities are constructed from the constituent parts of the individual schools, which are fiercely independent and have been channelled into Faculties, and then Faculties are then channelled into the university structure"*

Having multiple aims, objectives, perspectives and a lack of overall clarity of vision and mission; competing internal and external priorities; and interconnectedness of information flows, decision-making and collaboration were also highlighted as problematic. Three respondents also noted that having overseas campuses added to the complexity of what the university is, who it is for, and the kind of experience it wanted to provide. One respondent identified that:

> *"the notion that academic colleagues are semi-autonomous is a persistent culture and practice."*

The tension of being able to work with freedom, coming up with innovative ideas and being creative whilst also being expected to fit in the structure, rules and regulations of the university was highlighted as creating rather than reducing complexity.

Interestingly, there were a few comments suggesting that whilst the university is complex in nature, it may not be as complex as we think. This echoed previous comments about the way in which individual perception is a factor in considering whether something is complex or not. The university could be considered as complicated rather than complex. Respondents felt that the university has an overall mission that has remained constant over time, and that it has grown, thrived and survived over many decades, responding to and reacting to change.

When considering the broader context that the university is operating in, 32 of the 37 survey respondents felt that the University of Sapientia had limited rather than full control in terms of how it deals with this complexity. When the reasons were explored further, a number of key themes emerged:

- *Powerlessness* – there was a perception that with the existence of complexity came a feeling of powerlessness; this reflected the impression of there being both internal and external constraints. Senior leaders reported that this powerlessness came from the fact that they do not feel they have responsibility or permission to manage complexity, to take ownership for it, and they felt decision making was often not in their control. They felt they were not always part of the conversations that might have been helpful to them in decision-making processes – there was a gap between senior leaders and decision makers. One respondent described how senior leaders often want to build the

complete jigsaw, but many hold only 2 or 3 pieces and are not able to see or influence the whole picture, with internal chains of command and self-imposed constraints making situations feel more complex.

- *External factors* - there was a general recognition that the HE sector operates in a system with external factors and regulation becoming more prominent, providing constraints beyond the university's control. This included a number of issues that were prominent during the timing of this research, such as Brexit, pensions, VC pay, student demographics, and latterly Covid-19. There was an impression provided by a number of respondents that the HE sector, and the university, historically were not influenced as much by external factors and so this has felt to have contributed significantly to the perceived increase in complexity which couldn't be controlled or influenced.

It was also noted that the defining features of a university creates the ultimate dichotomy, which can be both helpful in dealing with complexity, and can also be hindering:

- A university is a community with many different facets, so it can be difficult to prioritise and find one single focus for work
- Academics are employed to do teaching and research because they can think
- Academics can find an argument in almost anything – which is a benefit and a problem
- None of this is wrong – it just leads to on-going discussion, organising and navel gazing i.e. focusing on the internal workings of the university, rather than the wider context and bigger picture.

- Many things are done on a case-by-case basis as centralisation and commonality is often denounced, discouraged, worked around – although this can be because attempts to centralise just don't work in practice effectively enough.

As highlighted previously, the very nature of the university environment therefore appears to create tension and complexity that has its own unique factors.

Having gathered the initial data on the management of complexity in July 2019 prior to the Covid-19 pandemic, the question as to whether it was felt the university has limited or full control over how it manages complexity was revisited with interview respondents in May 2020 to see if views had changed three months into the pandemic. There was an interesting mix of open responses which potentially reflected the different lived experiences of those in different parts of the university and the impact of local responses, as well as the response of the university as a whole. These have been collated here based on the general theme of responses received:

- Yes, the situation has changed – 2 respondents suggested that the number of people who feel they can't control complexity is likely to have <u>increased</u> as Covid-19 has brought another level of complexity; people have acknowledged they can't foresee complexity as much as they thought they might have done, so this may make them more risk averse – which could impact on decision making.

> *"I think actually it's probably shone a light on the complexity and the interdependences and the knock-on effects with greater clarity."*

- Yes, the situation has changed – 4 respondents suggested that the number of people who feel they cannot control complexity is likely to have decreased as people have been given permission to step up, solve things and make things happen – more junior as well as senior leaders have had the opportunity too and we have let them. Command and control has been simpler, easier to navigate and see through – both controlling and releasing, providing greater autonomy. Communication has been more focused and more widely shared, which has helped with engagement and understanding.

> *"I think the organisation will be better prepared now that it's been through this because it's had had an opportunity to put a lot of the things into practise and actually see how they've had it worked."*

- Yes, the situation has changed – 1 respondent suggested that we are looking at complexity differently - as a whole new series of problems, although with this complexity comes massive uncertainty, which in itself provides a new range of problems. Such a unified approach has not always been seen before, although we are all going through it and gaining from the experience. Teams are more aware and the university will be better prepared in the future.

- No, the situation has not changed – 1 respondent suggested that there are so many co-dependencies that people may still not feel in control and some people may have felt left behind. As the sector is not as highly regulated as other sectors (such as healthcare and the emergency services), the regulators still like to show they are in control. Universities UK certainly provided one voice initially, and was seen to be doing the right thing – it was good to work together and avoid duplication.

Some of the respondents also suggested that people felt the landscape had shifted significantly from previously, with larger issues taking precedence: the pandemic, lockdown, the economy. So, on the one hand we relinquished control of the larger issues and on the other took back control and gained more freedom with the things we could react quickly to, such as online learning. Universities seized the initiative and made things happen. The situation magnified and exposed weaknesses and failures, but also highlighted strengths. It shone a light on what had seemed complex, with interdependencies and knock-on-effects and for some things they just become clearer to people.

A key observation has been that over the years higher education has potentially lost sight of quality and has become too preoccupied with compliance. The Covid-19 situation changed this, by providing people the freedom to make changes, trusting that they would operate with quality in mind and following up with compliance later. Several respondents also used the term 'don't let a good crisis go to waste' if you want to eradicate some of the complexities that do appear to exist – a crisis can provide a reason to cut through all the 'noise' and focus on the larger things that matter, just making things happen.

4.4.2 Organisational complexity – identifying the university's complexity factors

Having considered complexity at the university in broad terms, a key aspect of this research was to consider complexity within this context from very specific angles, one of which was to consider specific organisational elements. The idea behind this relates to the notion that complexity has many inter-connected parts, some of which will be external to the university, and some of which will be internal. Understanding these internal factors a little more fully aimed to provide insights into whether there were any areas which leaders

might be able to change in the future, or might need to respond to differently, thus impacting on their leadership practice.

The first tool used was a slightly adapted version of the Complexity Assessment Tool – CAT (Maylor et. al 2013) which was personalised to the university context. Survey respondents were invited to consider a range of organisational factors related to complexity at the University of Sapientia as it is now, and as it is likely to be in the future. Maylor et. al (2013) suggested that there is more than one dimension to complexity, and therefore created the CAT around the three dimensions of:

- **Structural complexity** – which is associated with size, variety, breadth of scope, the level of interdependence of people or tasks, or the pace of work, and the complicatedness of the level of interconnectedness.
- **Socio-political complexity** – which is associated with the importance of the university, its people, power and politics especially within the wider community and sector. The number of stakeholders represents structural complexity, but their different agendas cause socio-political complexity.
- **Emergent complexity** – is the uncertainty and change caused by an actual or potential change in either a structural or socio-political element.

Structural complexity

What the data from the survey indicated was that respondents felt that the University of Sapientia had a similar number of structural complexities that it was not addressing well (8) to structural complexities that it was addressing well (7). There were 4 areas identified which some individuals rated as being addressed well, and a similar number rated as not

being addressed well, which potentially demonstrates the differences in personal perception when considering complex factors.

The structural areas that individuals scored as not being addressed well and as being addressed well related to the following areas:

Structural complexities not addressed well	Structural complexities addressed well
How clearly articulated and understood internally and externally the university's vision is	The scope and purpose of the university is well defined
How clearly success measures are defined	Quality and regulatory requirements are well defined
How familiar staff are with the technologies they need to do their work	Staff have the management tools and skills needed to support the work that is required across the university
How well staff across the university deal with their area of work in a commercially mindful way	The right people are allocated to undertake the right work
How well understood and defined is business, resource and people planning	Budgets can be used flexibly
How clearly defined and managed are the university's partners and suppliers	There is an inter-relationship between different areas of work
Whether accurate, timely and comprehensive data reporting is possible	The pace of work is achievable
Whether collaboration across multiple disciplines and departmental areas happens regularly and consistently	

Figure 12: Structural complexities at the University of Sapientia

Of these, there were several factors where the university was felt to be weaker currently, and either the factor would remain the same, or become more complex. These are therefore key areas of focus for the university to develop its organisational strength in the future:

- How clearly success measures are defined
- How familiar staff are with the technologies they need to do their work
- How well staff across the university deal with their area of work in a commercially mindful way.

Alongside this it was felt that careful attention should be paid to managing the pace of work and ensuring that resources were available for staff when needed. These were factors that were identified as potentially becoming more complex in the future and so the university needed to be ready to deal with these. Establishing a stronger scope and purpose for the university; gaining the support from stakeholders and enabling them to have a realistic and shared understanding of the value of the university were also identified as key areas for future focus and action.

Socio-political complexity

In terms of socio-political complexity, the majority of respondents felt that the university addressed the majority of areas well. This suggests that senior leaders believed there is strength in how resources are used, business cases are developed, teams internally work together, and how external stakeholders are aligned, supported and demonstrate their commitment to the university. When considering whether these factors would change in the future, it is interesting that the majority of respondents suggested that most factors would either remain the same or become less complex in the future.

However, there were a number of areas where it was identified that the university was not managing factors well currently, a few not at all well, although they will be slightly less complex in the future. Whilst it could be considered that these require less attention, it still

seems important to consider how complexity is being reduced, and whether actions can be taken to reduce complexity still further and/or increase current performance. Links to strategy implementation activities may be useful. The factors identified here included how business, resource and people planning is well understood and defined; whether the university's suppliers and partners are clearly defined and well managed; whether collaboration happens regularly and consistently across multiple disciplines and departmental areas; and whether there is accurate, timely and comprehensive data reporting.

Overall, the analysis of this data indicated that people were most concerned with structural complexity factors. There seemed to be less concern for socio-political complexity, which is slightly surprising given the factors raised previously around cultural dynamics and power in the sector. Potentially though, this speaks to the historic and individualistic nature of the sector, and the organic growth of a higher education system that can no longer operate in individualised structural pockets but is highly interconnected in ways that are sometimes logical, although often mysterious.

4.4.3 Organisational complexity – understanding the university's ambidexterity & capacity for change

In exploring organisational complexity, consideration was given to the university's ambidexterity and capacity to be flexible and adaptive to change, recognising that agility, flexibility and operating at pace are key organisational elements needed to deal with complexity and complex change. A range of questions were therefore asked which were based on the instrument developed by Judge and Douglas (2009). They drew on work related to organisational flexibility, organisational learning and an organisation's receptivity

to change. Judge and Douglas (2009) identified eight distinct but inter-related dimensions, as outlined on page 115, that concerned issues of human capability, informal organisational culture and formal organisational systems/processes.

It is noted that there are limitations with the methodology; in particular that it does not specifically measure the task environment; it does not consider the size of the changes being undertaken; it does not consider the nature of the organisational change; and the methodology was developed with organisations in the USA. However, it was felt to provide a starting point to a further organisational conversation about where attention might need to be focused in terms of change capacity.

Each of the eight dimensions were explored through the survey, and in more detail in interviews, with three dimensions emerging as being of most significance in terms of impacting on the university's change capacity. The additional area of organisational ambidexterity was also explored in summary and is added here as a final dimension for consideration.

1. Trustworthy leadership

The data gathered suggested that the trustworthiness of leaders had the potential to impact negatively on the university's capacity for change - i.e., this was a significant area of development focus that the university needed to address. When considering the Senior Leader's Group as a collective group, respondents highlighted that whilst there was strength demonstrated in senior leaders' collective ability to protect the university's core

values whilst encouraging change, they were weakest at demonstrating humility while pursuing the university's vision.

In order to address this, it was defined that a strong sense of togetherness amongst the leadership community of the university, with genuine listening and learning from each other taking place is needed. Relationships, rapport and understanding should be developed based on dealings with someone over time, and trust must also be demonstrated. Being visibly pro-active and authentic, and having a more open mindset with one another is also important. Transparency and openness of decision-making and communication in the right sort of way, with no hidden agendas and clear visibility was also considered to be critical. People stepping up as leaders and experiencing it, understanding it more fully and therefore trusting more openly should be encouraged; and having a clearer strategy and narrative around change was felt to be useful in term of providing direction.

> *"There is something in leaders demonstrating affinity with staff through their actions."*

2. Effective communication

The data for this dimension provided clear evidence that respondents felt that across all four factors related to communication there was room for significant improvement. The clearest responses showed that 25 respondents disagreed / strongly disagreed (compared to 9 respondents who agreed / strongly agreed) with the notion that members of the Senior Leader's Group effectively communicate and flow information to those on the front line. Communication across different parts of the university was also felt to require improvement according to 22 respondents. Information from and to 'customers' was

generally felt not to be effective as well, although 13 respondents neither agreed nor disagreed, suggesting that there was a lack of clarity about whether this happened effectively or not, or whether it should happen perhaps.

Challenges related to getting communication right were also highlighted:

> *"It's a challenge as we want people to have autonomy and agency but we want them to be on message."*

> *"stop expecting that all these communications are actually going to land where and how they were expected to land."*

When solutions to improving communication were explored it was felt that speaking with an open, honest, authentic voice was needed. It was identified that there needed to be a good mix of formal and informal communications, including assurance, repetition, open discussion with clear messages. This should also include more personalised communication, with simplified communication channels. Given the complexity of communication within the university currently, it was felt that a reduction in conflicting communications channels, and improvement in resourcing for internal communications activities in order to reform, extend and simplify communications channels between the university and individuals was needed. Also, leaders need to take greater responsibility for two-way dialogue, for being authentic and for taking ownership of communications; and staff need to be more curious, find out more for themselves and should feel freer to ask questions.

It was also highlighted that there was a need to paint more pictures through communications, use videos and vignettes to make then real. And saying something even if there is nothing to say was felt to be important – it is good to socialise ideas early and get feedback.

> *"You've got to try and paint a picture for the university in terms of what is it trying to achieve. You've got to have the big picture and you've got to paint that for people as they need to be able to see that. I think number one is we've got to paint big picture so that all the staff across all levels can understand it."*

3. Systems thinking

The data suggested that this is also a key dimension for action by the university. The factor that stood out most is where 23 respondents disagreed or strongly disagreed with the factor which suggested that staff recognise interdependent systems implications of change, with only 5 respondents agreeing with this statement. This suggests that senior leaders perceive that systems thinking and the recognition of the impact that interdependent systems have on change is not fully understood, and they do not believe that they or the wider staff population know how to deal with this. The importance of institutionalising change was also felt to be an area of weakness, and work could be done to improve the alignment of incentives with desired changes. There is a suggestion that this factor may be happening in some areas as 12 individuals agreed/strongly agreed with this statement, although 17 disagreed/strongly disagreed. In a similar way, there was a split view in terms of whether the university have enough staff who recognise the value of addressing the causes rather than the symptoms with 12 people agreeing/strongly agreeing and 13 disagreeing/strongly disagreeing. This again was an area where senior leaders seemed to

have no clear view, with 11 neither agreeing or disagreeing, suggesting there may be a lack of awareness or understanding in this area, or potentially there could be apathy in terms of whether this matters or not. What is important about this data is that it reflects senior leader perceptions and perspectives and has not been triangulated with staff who are working within the systems. For them the view might be quite different as they are closer to the operational elements of the systems, including the intersect between systems – with lived experiences as to whether these work or not.

When these responses were explored more fully with interview respondents to consider how systems thinking could be further embedded within the university, a number of potential actions were offered. It was suggested that there needs to be a wider understanding and appreciation of other areas – people thinking wider than their own areas – creating more permeable boundaries and removing the blinkers so people can see more of the whole picture. Breaking down silos was also highlighted, recognising that the organisational structure does not support systems thinking based approaches.

> *"Understanding and having a view of where people fit into the university and what their role is and how it relates to others still needs to be explained."*

> *"For me it comes down to organisational structures and how we do or don't do things at the moment …… fewer and larger organisational units, so you breakdown these fiefdoms, those barriers so that people are physically in an environment that enables more systems thinking - there are fewer barriers therefore there are fewer blinkers on your imagination."*

> *"Once you have an organisation as big as this organisation, it's a very long way from one end of the pipeline to the other end and the rationale for why you're doing what you're doing is much more likely to get lost on the way."*

It was also identified that there is a need to speak the same language (less jargon, titles and acronyms), follow the same systems map, help people understand where they are in this system – people need to know what the system is. And there is a need too for development and training in systems thinking – leaders need to know what this is, understanding the opportunities it brings, the mechanics of how it works and why – aiming to reduce defensiveness and protectionism, and beginning to recognise the problem.

The emphasis given was that it is the organisational design that needs to change to create more of these opportunities, and that members of the Senior Leader's Group need to relinquish power and hierarchy to allow greater freedom for the system to operate. A university wide understanding of systems thinking in its holistic sense rather than within specific systems was considered desirable.

4. Organisational ambidexterity

Responses indicated that the governance systems of the university are not allowing as much ambidexterity as might be helpful, particularly in terms of enabling a rapid response to shifting priorities or changes to the external environment, or enabling coherence across the university. Seventeen respondents also agreed that management systems cause the university to waste resources on unproductive activities.

4.4.4 Organisational complexity – summary

The research confirms that, based on the perceptions of research respondents, the University of Sapientia is a complex organisation because of its size, structures, breadth of provision and campuses and because of the organic nature in which governance and organisational structures have grown over time. The people, cultures and semi-autonomous way of working also adds to this complexity. Leaders' report that they feel they have limited control over this complexity because they feel powerless to deal with it; they feel much is dictated by external factors and also the elements that define universities as universities, such as scholarly activity, are being diminished. The university's experience of dealing with the Covid-19 pandemic has meant there has been a shift in focus and attitudes towards the complexity of the university, with this believed to have both increased and reduced in different ways.

Moving forward it is felt that the university needs to establish greater trust in its leadership; continue to develop more effective communications; and embed learning, understanding and practices around the concepts of systems thinking. Being clear on success measures, greater use of technology, commercial mindfulness and also real and meaningful collaboration across boundaries are also ways in which the university may be able to address complexity in the future.

Individual complexity factors

As well as considering the wider context and the organisational factors within the university, this research also looked at individual factors related to personal experiences of dealing with complexity. Recognising that everyone is different, this research aimed to consider whether there were common elements that provided individual capability, capacity and readiness for dealing with complexity, and whether there were elements which (knowingly or unknowingly) held people back. Individual factors were considered in two ways – individual leaders acting as a collective (the Senior Leaders Group), and individual leaders acting independently (interview respondents, who were also members of the Senior Leaders Group, but responding about themselves).

4.4.5 Individual complexity – collective leader readiness to deal with complexity

The Senior Leaders Group of the university is a collective of circa 110 senior leaders from across all areas of the university. Membership includes academic and professional services staff who hold significant areas of responsibility in terms of university operations. Members of the University Executive Board in the UK are also part of this group. This group has been the focal point for this research and so it was important to consider complexity in the context of this group collectively, as well as individuals within the group.

When considering readiness to deal with complexity, respondents of the first survey rated the readiness of the collective membership of the Senior Leaders Group on a rating where 1 was 'not at all ready' and 10 was 'absolutely ready'. They rated between 4 and 6, with one person rating 8. One of the key reasons for the rating being in this range was because the Senior Leaders Group was felt to be a collection of individuals with great insight, intellect, and deep knowledge in their academic fields, although they are not well

connected together and they were not considered to fully act collectively as a group. There was concern expressed that the level of leadership competency and capability demonstrated by individuals when they came together was more limited, indicating that the group is not yet ready for whole institution thinking, and current behaviours still indicate individualistic thinking exists. It was also felt that there was a lack of understanding of broader sector issues; how to manage relationships well; how to deal with complexity and how to manage a wider range of stakeholders. The breadth of knowledge (wider frame of reference) beyond the HE sector was also not always evident amongst this group, as for many their only experience has come from working within the sector. It was noted that this led to inward thinking and focus, a preoccupation with university matters, and local matters within the areas that senior leaders represent.

> *"I think the frame of reference and wider experience of our senior leaders is quite narrow. We clearly have an advantage that we have some deep experts within the sector that do understand education and research really really well. But do they understand and have skills and the leadership qualities to deal with all of those things that I talked about earlier, the disruptors, the changes to the sector?"*

Given that complexity had been defined as having many inter-connections, it was observed that dependencies and inter-dependencies are not fully understood, including the impact / consequences of actions and decisions on others / other areas. There was no work undertaken that binds people together or that means people are working in a unified way – there is no one set of goals or drivers, as has been suggested as good practice in the literature referencing senior team dynamics. Respondents commented that people are

likely to fall back 'into their tribes' very easily and are likely to have answered these questions from an individualistic point of view, demonstrating that they are likely to be quite narrow in their thinking. The implication being again that the group was not acting as a collective. There was felt to be a need to listen more, imagine the future and consequences more fully and have greater preparedness and readiness for dealing with complexity – it was felt this was lacking institutionally.

It was recognised that members of the Senior Leaders Group should be advocates and visionaries for the university, not sitting on the fence. It was also recognised that this position led to a lack of energy and drive, which is not likely to be helpful in terms of driving change, meaning there was likely to be a reduced capacity for change. It was also noted that this is likely to be an intrinsic feature of HEIs where individuals tend to focus on themselves and do not regard themselves as part of a whole university, rather the university is host to their work.

Despite recognising that there were certainly areas for further development, it was recognised that some improvements had already been helpful in either reducing complexity already or enabling a more complexity focused approach. These were identified as:

- Better governance and decision making through single committees looking at a wider picture across the university.
- Process and system improvements have been undertaken which have reduced complexity in some areas.

- Recruitment of leadership professionals, people from outside the sector, and individuals with different ranges of experience has been helpful in bringing new insights and ideas into the university.

> *"I think that as a cohort there is an increasing amount of willingness to collaborate. I see quite a number of people working to overcome individual complexities……. The green shoots are there but they need to grow a lot more yet."*

4.4.6 Individual complexity – individual leader readiness to deal with complexity

When considering their own readiness to deal with complexity as a leader amongst interviewees, the range of responses was much broader, ranging from 5 – 10 (where 1 was 'not at all ready' and 10 was 'absolutely ready'). A broad range of responses reflected this scoring, although the main emphasis seemed to be that individuals had greater confidence in their own abilities to gather insights (even if that meant not knowing everything); holding and managing situations; being pragmatic when it was warranted; and making the right decisions, with the best intent, for the people and the university.

So, individually, there seems to be a level of confidence, competence and capability that appears to be dissipated or lost when these individual leaders came together as a collective, which was interesting to observe.

4.4.7 Individual complexity – complexity factors to enhance how leaders deal with complexity

During the first interviews, individual leaders were asked to consider any specific factors that would enable them to become even more accomplished at dealing with complexity. A broad range of range of responses were number of responses were received which were grouped into the following key themes:

Personal understanding	Personal confidence	Trust
• Expanding frames of reference (including other sectors) through benchmarking, sabbaticals, job shadowing, secondments • Of people and cultures • Dependency issues (people / data / systems) • Ways of thinking and operating e.g. analytical skills, problem solving, systems thinking, future thinking, dealing with complexity, timely decision making • Alignment to strategy and mission • University operations	• Taking and managing risks • Getting things wrong • Ability to recall detail • Positive mindset • Decision making and judgement – even if there is no obvious solution • With ambiguity • Accepting a lack of clarity and control • Using complexity tools • Using coaching based approaches	• Networks • Data and systems • Working towards common goals • No blame • Best endeavours • Pragmatism (start somewhere)
Collaboration and shared endeavour	**Time for..**	**Organisational agility**
• Working together across silos • Enabling people to utilise the right skills • Different perspectives • Right for the university as a whole (one team) • 'One team' culture for the Senior Leaders' Forum • Better partnership working	• Reflection • Learning • Skills development • Listening • Applying learning in practice • Clarity and focus • Clear communications	• Clearer approach to complexity • Capacity to think at the right level • Experimentation • Institutional viewpoint (a view from the balcony) • Demystification through simplification and/or storytelling • Better quality information is shared in a timely way • Saying 'no' as well as 'yes'

Figure 13: Factors that could enhance leaders' ability to deal with complexity

These themes indicated that leaders were highlighting the need for a mix of personal and reflective skills as well as operational, organisational and collaborative skills. This insight provided a useful contribution to the structural shaping and content of the Bricolage Leadership Model, which is shared in more detail in chapter 5.

4.4.8 Individual complexity – summary

From the responses gained, the data suggests that individual leaders believe they have greater confidence and competence in dealing with complexity, potentially within their own boundary areas. However, when these leaders get together as a collective the ability to act together cohesively appears to be dissipated. This dynamic suggests that whilst the university may have the capability and capacity in its leaders to deal with and manage complexity, it is not harnessing this at an organisational level. The need to act together as leaders; set goals and work on unifying goals; sharing experiences with each other and gaining collective drive and energy appear to be needed.

A potential way forward is suggested through enabling leaders, individually and collectively to invest time in the development of their personal and mutual understanding of a range of issues and areas; to draw from their personal confidence, using this trustingly with one another in shared endeavours. Allowing time to listen, communicate and consolidate is important, as is the need to work together to enable a more agile university environment.

4.4.9 Research question 2 summary

The data clearly shows that leaders within the university believe that, in line with the rest of the sector, the University of Sapientia is a complex organisation. A range of organisational factors are highlighted, many of which connect with wider sector issues, with some appearing to be particular to the University of Sapientia at the current time. Whilst it was felt that there was limited control in terms of how some of these complexity factors could be managed, individual leaders personally felt more able and confident to deal with complexity when working in their own areas or across their personal spheres of influence. Individuals appeared to be more willing to take behavioural risks in terms of

their decision making and communications when acting individually rather than when acting as part of a leadership collective, as the collective response to complexity appeared to be more limited.

This starts to suggest an interesting interplay between the individual, organisational and wider complexity factors that leaders perceive, how they perceive these, and the impact this has on their behavioural choices. Potentially the reliance on the positionality of individual leaders and their individual practice is no longer a strong enough method of enabling effective leadership through such complex organisations which are operating in such complex conditions. Potentially consideration of a greater focus on the mindset and actions of shared leadership practice, what this looks and feels like more fully in terms of both individual and organisational operation is needed.

4.5 Research question 3: Implications for leadership practice

Research question three drew on information about the behavioural complexity of those in leadership positions who engaged with this research. Through this, and together with insights from the final stage focus group, it was hoped that key themes which could have implications for the leadership practice of these higher education leaders could be gained.

4.5.1 Behavioural complexity and leadership practice

Lawrence et al. (2009) drew from research that suggested that behavioural as well as cognitive complexity is required of leaders and managers if they are to address on-going and competing demands in their roles. In its simplest form, behavioural complexity is the capacity of a given leader to engage in a wide repertoire of behaviours (Hooijberg and Quinn, 1992). A person with high behavioural complexity is able to engage in a wider array of behaviours than a person with low behavioural complexity. Specifically, behavioural complexity is *"the ability to exhibit contrary or opposing behaviours (as appropriate or necessary) while still retaining some measure of integrity, credibility, and direction"* (Denison et al. 1995, p. 526).

The instrument they developed is based on the Competing Values Framework (CVF) created by Quinn (1984) which outlines two pairs of contrasting values or capabilities that define the behavioural breadth within which a manager might act. The first pair concerns organisational focus (internal or external) and the second pair emphasise stability or flexibility in the organisational structure. One opposing quadrant contrasts behaviours that create continuity versus change, whilst the other contrasts priorities of results versus relationships:

	Internal Focus	External Focus
Flexible Structure	**Relationships** *"Relating to People"*	**Change** *"Leading Change"*
Stable Structure	**Continuity** *"Managing Processes"*	**Results** *"Producing Results"*

Figure 14: The Competing Values Framework

Lawrence et al. (2009, p. 4) suggests that *"a behaviourally complex leader both maintains continuity and leads change …[*and*].. a behaviourally complex leader transcends the paradox of results versus relationships"*. What this suggests is that leaders need to be able to be capable and confident in encouraging hard work at speed, focusing on competition and ensuring the delivery of results whilst also maintain harmonious relationships, showing concern for others, supporting their development and encouraging innovation and participation.

The instrument developed by Lawrence et al. with multiple indicators for each quadrant, whilst not without its limitations, provided an interesting starting point for visualising these varying factors. A caveat to this was that responses were self-reported by leaders and so may not have accurately reflected the demonstrated behaviour as experienced by others. The survey was issued online prior to the Covid-19 pandemic and was completed by 37 members of the Senior Leaders Group. It therefore reflects experiences at that time, although the data was also reviewed after the Covid-19 peak as part of the final interview process.

The results indicated that – according to their own self-assessment - members of the Senior Leaders Group overall held a level of behavioural complexity that was able to balance both the need to achieve results whilst maintaining a strength of relationships with people. This suggested that most members of the group have a competitive focus (but not necessarily in terms of improving results); they work hard; and can respond to emerging issues. Getting work done quickly seemed to be something that respondents felt less skilled in overall, although this could be in recognition that speed does not always equal accuracy. Alongside this there was reported overall strength in allowing people to contribute opinions and participate in decision making.

Where behavioural complexity appeared less evident – according to their own self-assessment - was in individual's overall ability to manage continuity in a stable environment or lead change. Whilst there was some indication that leaders inspired others to try new things, respondents reported that there seemed to be a greater tendency for teams to operate in more traditional ways. It was also (self) reported that leaders were not as skilled at anticipating future needs or starting bold and ambitious initiatives. The lowest skill areas that were self-reported were around ensuring the understanding of guidelines, policies, procedures and processes, as well as being able to project manage tightly.

Given the change in circumstances with the Covid-19 pandemic, and to explore with senior leaders what might have been the rationale for the responses provided in the questionnaire, these key results were explored further at the second interview stage in May 2020. At this point in time, the university was in the early stages of its response to Covid-19 with staff still in crisis response mode. The hard journey through 2020 and

beyond was something that respondents at the time potentially did not realise was ahead. From this exploration, additional themes began to emerge, which are outlined as follows.

In terms of managing continuity in a stable environment, the results indicated that - according to their own self-assessment – members of the Senior Leaders Group felt that overall, the higher education environment could feel quite comfortable, with respondents becoming complacent and experiencing inertia, accepting the status quo. There are routines with things ticking over, and people can be enjoying the moment. In such a stable environment people do not necessarily feel empowered, there is a reduced freedom to act, no space to change and limited control, with people feeling that their sphere of influence is limited.

> *"We surround ourselves with the comfort blanket of rules, regulations, processes and systems to the point where we infantilise ourselves and we are initially reluctant to make changes and probably can't make change because the comfort blanket of rules, regulations, the processes that we wrapped so tightly around us that we restrict our movement."*

In terms of leading change, leaders who were interviewed noted that their perceptions of both self and others were that leaders in the group were not always able to look beyond their own boundaries. Understanding why things needed to change was important, with the impression given that this was not always understood if change was 'done to' people, rather than them being part of the change approach. It was felt there was a disconnect between those directing large scale change and the lived experiences of people on the front line. Change fatigue and initiative overload were also cited as current reasons for this

response, with a weight of expectation at Director level in terms of leading change, but less on other levels. The rotational nature of a number of academic senior roles was also highlighted as problematic, with institutional memory lost; everyone's personality and priorities are different; academics have traditionally focused on building their own profile and subject, not a wider perspective; and the tension between being a local ambassador and university advocate remains.

4.5.2 Implications for future leadership practice

In considering these issues and the implications, respondents noted that there were five key areas of action that individual leaders could focus on in terms of leadership practice in the future:

Individual ownership of personal actions and reactions – there was a strong emphasis on individuals being clear about having personal ownership and accountability for their own actions, reactions and learning, regardless of whether they can control or manage the situation around them. Developing behavioural complexity was seen as a personal responsibility that leaders should take ownership of.

Enablement of collective endeavours across boundaries through strong and trusting relationships - reaching collaboratively across boundaries and enabling people to take action at the place closest to the point of need, as well as leading beyond boundaries by working collaboratively with others to achieve shared goals. Implications for wider areas need to be considered, not just own area.

Greater situational and environmental understanding, augmented by broader frames of reference – providing broader perspectives through which existing cultural norms can be considered, framed and re-framed where needed, potentially providing greater freedom to act and more informed decisions to be taken.

Personal confidence, empathy and consistency when dealing with complexity – breaking it down into component parts where necessary, focusing particularly on interdependencies; and also taking decisions at speed wherever possible, even if not everything is known, reducing prevarication and caution. Being people rather than task centric.

Effective and simple communication – helping people to understand what is relevant and important, creating simple messages, using relevant data and seeking feedback.

From this evidence, there starts to emerge a pattern which suggests that the dynamics of leadership practice are at the intersection of the individual, those around them, their organisation, and the environment or system they operate in. What seems to be required is a level of behavioural, cognitive and emotional complexity that allows leaders to be both whole and a part of shared leadership practices – having equal responsibility for themselves and also for the wider system. When looking across the whole research data-set in the final focus group, participants highlighted that a critical factor that was missing, that connected all of these domains, was **purpose**. It was suggested that the purpose of higher education has become diluted and fractured over time, with different stakeholders defining different purposes for different parts of higher education provision.

> *"Purposes are grating against each other all of the time."*

As a university it is not always clear what we do and what we stand for. Individually many academic staff are chameleons on a daily basis, shifting their purpose from teacher to researcher to administrator. Focus group participants debated whether the sector had lost clarity of purpose because of the different ways in which higher education is now judged, flipping the personality of the university and its focus of endeavour every year or two, as it focuses on REF one year, and then TEF another. They also discussed whether 'entitlement' was part of the fabric of Russell Group universities and how this might have impacted on the challenges of transitioning the purpose over time.

What did become clear, however, was that the Covid-19 pandemic cut through the 'operational noise' allowing the university, like many others, to share a common sense of purpose: to keep people safe and save lives. Through actions that protected staff and students (facilitating study and work from off-campus); through research endeavour to find medical solutions; and through practical actions to support local and national health and community services by providing equipment, trained staff, accommodation, parking and so on, the actions of leaders and staff were united and focused on this one intent. This values-led approach focused attention on people doing the right thing with clear conviction alongside others who had the same intentions. The final section of this chapter reflects on the impact, implications and potential learning that has been gained from this very unique experience.

4.6 Covid-19: initial impact and implications

Having undertaken the majority of the primary research prior to the Covid-19 pandemic, and then having the chance to consider the impact of the early months of the pandemic on leaders' views during the closing research stages, it has been important to explore the impact these lived experiences have had on senior leaders at the university. The use of a grounded theory-based approach, as an iterative data collection method, meant that the overall research design was not impacted by the pandemic, although it did provide the opportunity to reflect on its impact as part of the final research stages. With most of the data responses and research questions already answered, the pandemic did not appear to have skewed any data collected, providing instead an opportunity to revisit and validate (or otherwise) some essential concepts visited previously to see if the changed circumstances would now lead to a changed response.

This section therefore considers the additional research findings that emerged based on the organisational and individual responses to the early stages of the pandemic, as well as starting to consider implications for the future.

4.6.1 Organisational complexity – the impact and influence of Covid-19 on organisational practices

When revisiting the responses to findings related to organisational complexity and ambidexterity (originally gathered in January 2020, revisited in May 2020), the majority of interview respondents commented that people now had a real lived experience which they will take forward with them, and that it was likely that the pandemic would provide a catalyst for increasing change, particularly for systems, processes and governance.

People have gained confidence and recognised that they have pulled together and worked together towards the same objective, so they know it is achievable – they have seen how they and the university have been able to adapt. It was recognised that people may see that it is possible to change things more quickly, just get things done and work together to achieve things where needed. In terms of ways of working, it was considered that there had been a review of delegation, with people being trusted more. Removing the burden of documentation, reducing the meeting culture and using technology to drive new ways of working were all possibilities that have been opened up for the future. It was highlighted that people have moved out of their comfort zone, many have stepped up, so there could be an enhanced appetite to maintain some of this momentum for change and transformation, especially for things that were not working as effectively as they could.

It was also felt that the university's management systems have been flexible enough to enable change to happen quickly and in a managed way, with different systems and processes enabled within this which could be enabled or disabled quickly in future. However, it was recognised that it had been people who have made the biggest changes, rather than the systems.

Interestingly one respondent commented that a light had been shone on areas where there was a waste of resources which has now been tackled, meaning that the university has moved at pace and tackled issues it might not have done otherwise. It was also recognised that the Covid-19 pandemic had provided the opportunity to see more clearly the shared eco-system, and how this has been aligned to find workable results. There was a desire for this to continue into the future, and a hesitation that previous ways of working would stop this from happening.

It was felt by a number of respondents that if the university seizes the opportunity to change and makes changes to governance and procedures, then it might be possible to remain ambidextrous.

> *"I mean there's been a huge amount of talk about agility hasn't there over the last few months and it would be interesting to ask that same question now because a lot of the things that seemed impossible, like rewriting all the regulations for everything, turns out you can do them in two weeks if you have to."*

However, there were also some caveats. In the Covid-19 situation the stakes were high for everyone; there was human public interest, and everyone was more focused on fewer things – everyone wanted to do what they could. It was acknowledged that this was a time of crisis and that there is a risk the university would move through this and nothing would actually have been fully reformed, there will just be a papering over with a crisis response, with parts of the university still working at cross-purposes.

> *"We need to rip the plaster off our management systems and processes that are holding us back."*

It was also acknowledged that leaders were having to deal with problems and issues that had not been planned for, such as the sudden self-isolation of significant numbers of students on campus; complete freezes to staff recruitment and spending; scrutiny from unions on how funding (particularly linked to pay) was being managed and how decisions were being made. Staff anxieties about home situations, including having caring

responsibilities; balancing work and home-schooling; and concerns about returning to campus were all new areas of leadership for many in the university which they needed to navigate urgently and sensitively. Individual conversations mattered, and not all leaders felt equipped, or confident, in how these were enacted.

It was also felt that there was a risk that people could slip back into their old ways with senior leaders being protective of their own areas – especially in terms of finances. Silo working could remerge very easily, and some people could continue to be risk averse. With the student landscape also changing radically and the HE landscape likely to be even more complex in the future, there was not confidence that the university (or sector) will take the opportunities for the radical changes needed and that it may still not adjust quickly enough.

Whilst Covid-19 as an event was not explored formally as part of the research, what was of interest was whether the impact it had had on lived experiences changed the perspective of individuals in terms of their attitude towards complexity. As part of this it was observed that Covid-19 was a simple but serious event, rather than a complex one, so had not necessarily set leaders up to deal with complexity. Some people may have potentially learnt from the experiences and be able to deal with more complex issues in the future. One respondent noted that not everything had potentially changed – just been suspended for a while. Leaders are not altogether sure what the new version of 'normal' will be, so they cannot necessarily plan for it. It was also recognised that it is acceptable for a once in a lifetime change to enable a focus on such priorities, but difficult to do this on an on-going basis.

4.6.2 Individual complexity – the impact and influence of Covid-19 on collective leadership practices

Interview respondents were invited in May 2020 to comment on whether the behavioural response of the Senior Leaders Group had changed as a result of the early stages of the pandemic. There was an overall consensus that the behavioural response of members of the Group had changed, generally in a positive way, with a number of reasons being cited for this. It was acknowledged that Covid-19 was a crisis that provided a common goal, a shared objective, and the need for a collective and quick response. No-one felt disadvantaged – everyone was in the same position tackling the same issues – personally and institutionally. There was a sense of all being in this together as a community, with a recognition that this was a national / international / global crisis – people galvanised together in order to do good for the greater good. There was also a recognition that there was more at stake than the 'usual' things that we focus on.

> *"I think it was the emergency situation that meant everyone does have a loyalty and affiliation to the institution and wanted to do their best, particularly by the students."*

> *"The cause is obvious. Almost any community comes together at a time of crisis and I would have been astounded at the University community, a liberal, collegiate, supportive environment had not come together the way it had in the face of this diversity, I'd have probably given up and gone home."*

> *"I think it's the call to action, I think it's the imperative. I think it's the common goal that everybody's driving towards. I mean, in the University we try and boil so much of the ocean. But if we actually focused in on three or four really important business problems that we're trying to solve, and we put our effort and resources into that would be so much more successful, I think."*

Personally, interviewees reported that they had a better understanding about relationships, interrelationships and interdependencies, and there was a greater recognition of co-dependencies and how one decision or action could impact on another. Trust was also given and taken. Interviewees believed there was less fear about change, people were more willing to take risks and have a go and there was an air of positivity. At the same time, they recognised that showing vulnerability was also acceptable.

The lived experiences of individual leaders suggested that they have solved problems they did not think they could solve and have been surprised and pleased. They now have a lived experience, know it can be done and have the confidence to have a go. They felt better informed and understood what they were capable of as individuals and as a university. They believed lessons have been learnt which can be replicated into the future, both individually and organisationally.

Interestingly it was felt that the pandemic created a sense of loyalty and affiliation to the university, and to the students. This has resulted in a more collegiate response – people worked together and there was a real willingness to do so, reaching across boundaries in ways that had not been achieved before. As part of this collaborative response it was reported that there had been a 'breaking down of fiefdoms', with people feeling

empowered to go above and beyond, to take risks at different levels, to improvise and to make mistakes without reprisal.

In terms of leadership role-modelling, there was a clear recognition that the Vice Chancellor and University Executive Board members provided leadership, clear command, simple messages and direction, and people complied. Senior leaders looked to the Executive for this direction and then empowered people to act. It was felt that senior leaders encouraged and nurtured this autonomy, gave permission to people to get on with it, they let it happen without trying to intervene or be controlling. 'Your best is good enough' was a key phrase a number of individuals cited as being a hugely powerful message provided by the Vice Chancellor to staff across the university – people were given autonomy and authority to make this happen, and people worked with it.

From an organisational perspective, elements of bureaucracy were cut down or removed which allowed actions and decisions to happen at speed. The creation of Gold and Silver 'command' groups who met daily allowed decisions to happen swiftly. These were immediately communicated through the instigation of a daily and then weekly senior leaders' briefings live online. The focus moved rapidly from decision making via lengthy committee meetings with many in attendance, to short online gatherings of those who had the expertise to inform and make decisions, and then focused conversations with those who could cascade and action them. This appeared to energise individuals who worked at pace. They also saw success and felt good – they recognised they could solve things. A couple of respondents did feel, however, that the situation had polarised some people, with some willing to enable change and others dogmatically opposing. So not all behavioural responses were positive.

One respondent commented that more people have seen 'the wiring diagram' of the university – including some of the knowns and some of the unknowns. This was particularly evident when all spending was halted and an Emergency Finance Group was established to review and approve/decline any requests for spending across all parts of University operations. This led to immediate transparency of the types of activities people were requesting funding for, and aspects of university operations where changed practices were needed.

Because of the nature of the sample of this research group however, what is not clear is whether leaders at all levels will have had the same experience. There was an intimation from some of the interview respondents that leaders in their areas had certainly thrived, although in others some had found the situation much more challenging. From this it therefore is not clear whether the university managed the complexity of the pandemic well for all layers of leadership, and whether the reflections of this senior group of leaders are reflected across the rest of the leadership (and staff) population. Those on the front line of on-line teaching, student accommodation and staff and student welfare may suggest a different narrative which would be worthwhile exploring in order to understand and evidence the broader picture.

4.6.3 Future complexity - Covid-19's impact on dealing with complexity in the future

It has been an important aspect of this research to understand, as far as practicable, whether the experiences and attitudes that have been exhibited through the early stages of the Covid-19 pandemic have led to changes that need to be taken into account for the future. In May 2020, the majority of interview respondents felt this would impact positively on individuals' future capacity and attitude towards dealing with complexity – some felt quite considerably. Again, a note of caution is suggested in recognition of the limitation that the perspectives that this one group of leaders may bring to this situation, and whilst a helpful starting point, findings could be usefully validated/triangulated with the broader leadership community.

Interview respondents recognised that learning from this experience needed to be taken forward, including how as a university there was a need to:

- Focus on just three or four really business critical problems only and solving them first.
- Encourage senior leaders and others to continue to work collaboratively together.
- Have the confidence that it will be alright.
- Be more flexible and adaptable.
- Keep the team ethic.
- Maintain the closer relationship developed between the University Executive Board and the Senior Leaders Group.
- Maintain the improved level, openness, honesty and more authentic tone of communications, with ownership in different places in the university. It needs to continue to thank and praise staff, and connect people – leaders and staff together. Keeping in touch regularly has been seen as vital.

Additionally, it was also felt that as a university there is a need to be less complacent, grasp opportunities for change, create agile systems and processes, take a few more risks, find ways to work together more effectively, ignore most of the complexity and focus on specific things to work on – worry about the rest later. There need to be opportunities created to reflect and see what we have achieved, recognising that change can be a force for good and therefore be less fearful moving forward.

Individual leadership was recognised as important, keeping a calm and steady environment, standing back and trusting people to do their best whilst being ready to respond. Alongside this, taking a people centric approach, having empathy and really recognising what people are dealing with is important to maintain, including recognising where local things can happen and detail can be devolved and the stresses and strains they are under – it is about taking people along the same journey. Interview respondents also felt that uniting people behind a cause or a common purpose, and being clear what to focus on now, was less about complexity and more about clear leadership and stronger relationships between people. The university should not make assumptions about how things are - better systems and one version of the truth is needed.

Alternatively, it was also recognised that there were also challenges for the future, with the recent events providing challenges for individuals and universities. The level of change fatigue is increasing, and some people may not wish to learn from this experience, preferring to stick with current systems and processes. There also continues to be a conflict between people and systems, especially as systems start to be wrapped around adjusted ways of working. There can be a lack of professional confidence amongst some, with some needing micro-management throughout the pandemic. The shape of the workforce is likely

to be different, particularly given the loss of jobs and those remaining having less capacity. And those on fixed term contracts remain concerned about the impact of delayed research on performance metrics. Having just one thing that people can get behind where no-one felt disadvantage was seen as key: ‘we could do it again if….’

Complexity therefore seems to be changing, and leaders’ response is impacted not just by their personal choice but also by the environmental conditions that leaders find themselves in that impact on the range of choices they feel they might have. Whilst Covid-19 has provided a global challenge that nations collectively have had to address, the university at a more local level has also needed to adapt and change, and this has been demonstrated to have clearly impacted on leadership behaviours.

4.7 Chapter summary

This chapter has brought together insights of the higher education sector from both individual and organisational perspectives. It has considered in some depth the concept of complexity in the sector and the factors that influence this based on these two perspectives. It has explored the significance of these factors from a leadership perspective, starting the process of reflecting what this means in terms of the implications for leadership practice in the future.

Bringing all of these elements together has provided a new contribution to the body of knowledge related to the complexity sciences, leadership and higher education. The data gathered, when connected and considered in an integrated way, potentially offers a new way to shape this English university in the future, particularly in terms of its leadership and organisational approaches.

The next chapter therefore takes this data and presents a discussion of the findings, noting how this aligns with, diverges from, and adds to, the literature.

5 Discussion

5.1 Introduction

In this chapter, I consider the findings from the literature and research undertaken, reviewing what has been learnt about complexity, leadership, and higher education, and what the dynamics between these mean for future leadership practice in one English case study university. I focus first on the learning that the complexity sciences have brought in enabling the higher education sector, and in particular this case study university, to be viewed as a complex system. As part of this I also consider how this can help enhance senior leadership practice. Secondly, I consider the learning gained from understanding individual cognition, and having brought together all elements of learning from this research, I offer a new model that aims to provide new insights for the development of leadership practice for senior leaders in this one higher education institution. As part of this I also consider the question of purpose, which has been an emergent theme in the research, and which could be an interesting and fundamental point for consideration by both the university and individual leaders.

5.2 Understanding organisational complexity and considering the University of Sapientia as (part of) a system

A core element of this research has been the exploration of the dynamic between the individual, the case study university and the wider higher education sector. Reviewing this through the lenses of the complexity sciences has provided a way of considering this in a different way, focusing on the mutuality and interdependence of these relationships.

Through analysis of the results for research question one and part of research question two, where the complexity of the higher education sector and the case study university were reviewed, it is clear that senior leaders in the case study institution do find the sector complex, believing that it is likely to become more complex in the future. The recognition that a significant number of external factors impact this, and that internal factors can also create additional complexity, suggests that leaders do recognise the many inter-relational factors that contribute towards organisational complexity.

With many of the features of complex environments as highlighted by Watkins et al. (2017) and Siemens et. al (2018) (Figure 6, page 80) being evidenced by research respondents as existing in the case study university and its environment, reviewing these interconnected dynamics in this way has therefore seemed worthwhile. A review of the complexity sciences literature, and consideration of the research findings, has re-enforced the notion that the individuals, the case study university, and the higher education sector more widely, are operating as a system, and that this could be described as in Figure 15 (after Bronfenbrenner (1979)).

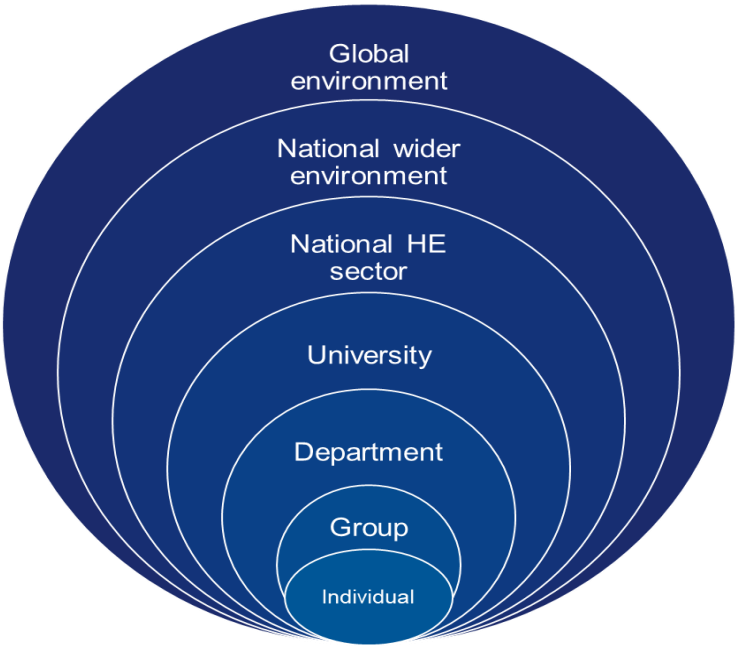


Figure 15: The HE sector as a system (after Bronfenbrenner's Ecological Systems Model, 1979)

Byrne and Callaghan (2013) also recognised that systems are described by the properties contained within them, and that changes are made based on the environment within which the system is located.

When exploring the university's capacity for change through the second survey, and followed up through the second interviews, systems thinking was one of the dimensions included for investigation. As outlined on page 115, this was defined as: *The ability of the organisation to focus on root causes and recognise the interdependencies within and outside the organisational boundaries (Kilmann, 1991).* The results highlighted that senior leaders believed that there was a lack of systems thinking across the university. This was evidenced by the lower scores / higher level of disagreement with the four factors related to this dimension. The factor that stood out the most was the one where 23 respondents disagreed or strongly disagreed with the factor which suggested that 'staff recognise interdependent systems implications of change', with only 5 respondents agreeing with

this statement. This suggests that systems thinking and the recognition of the impact that interdependent systems have on change is not fully understood, and senior leaders do not know how to deal with this. This is therefore a key element of leadership practice that needs to be enhanced. Whilst the concept of considering the HE sector as a system in this way may be known and understood by some, it does re-enforce the absolute need for all senior leaders to understand that this system exists and that the inter-relationships between the different parts of the system matters.

A further element of learning that has come from undertaking this research is that complexity science has provided a different framework for understanding that 'things' (in this case people and the university they work in) can, and do, operate in a non-linear way, and that instability and uncertainty exists. It recognises that within systems there is a need for both order and fluidity.

The literature indicated that the wider higher education sector is in a constant state of change, impacted by growing global competitiveness; financial, political and regulatory change; shifting student and stakeholder demands; growing competition; relentless accountability and the need to recover and recalibrate after a global pandemic. There is clear evidence that the wider global and national HE environment is far from static. Recognising that even once the system is understood that it could change significantly is also important, and so dealing with the ambiguity and uncertainty could be considered to be an essential leadership requirement. The need to lead into the known and the un-known, with fluidity and certainty, takes a particular type of leadership agility, with this research suggesting that it is not yet fully present in the Senior Leadership Group of this university. They recognised that the level of complexity is changing, the majority believing

that it is increasing, with most recognising that that there is a need to manage this, although they were not clear how this could be done, or whether they were able to do this given the organisational context they were working in.

When considering the case study university in more depth, research respondents reported that the University of Sapientia was a complex organisation, partly as a result of its size and structure, but also because of its multiple aims, objectives, perspectives and the tensions between being able to work with the freedom to come up with innovative ideas whilst expecting to fit within what were often considered to be fairly rigid internally defined rules and regulations. They highlighted it had complicated organisational and management structures, many of which had grown organically over time, often with parallel processes in place to achieve the same outcomes. They identified issues arising from competing internal and external priorities, challenges with the interconnectedness of information flows and the need for improvement in decision making and collaboration.

Many also cited that they felt they had limited control in terms of how they dealt with complexity, feeling powerless to act, without responsibility, permission or the ability to see or influence the wider picture. They recognised that the defining features of the university meant that it was one organisation with many facets and areas of focus, with a tension between centralisation and localised autonomy and a governance and decision-making structure that both enabled and disabled progress. Allied to this, the research also identified three key dimensions from the second questionnaire (page 168) which highlighted the significance of, and need for, trustworthy leadership, effective communication and a greater understanding of systems thinking in this case study university. Having a greater sense of togetherness where there is openness and

transparency, clearer strategies and more connected relationships built on genuine listening, and a stronger sense of community was desired. As the literature suggests, this greater sense of connectedness of leadership can lead to an enhanced shared understanding of complexity, and more effective ways of dealing with complexity factors.

What this suggests is that the there is need to understand how to balance more effectively the need for an organisational design that provides both structure and creative freedom; how to create greater connected relationships and a stronger sense of local and university community whilst also enabling localised autonomy and centralised regulation; how to give power and trust back to individuals to allow them their own control whilst being mindful of the impacts and connectivity to any wider system implications. As Lowell (2016), Mason (2008b) and Snyder (2013) propose, there is a need to create the environment and conditions which encourage collaboration and empowerment through which complexity can flourish.

It is therefore suggested that senior leaders could be aided by learning that can be drawn from the Complexity Leadership Model (Figure 16), as developed over the last decade by Uhl-Bien and Arena (2017), which has been a foundational aspect of the literature reviewed for this study.

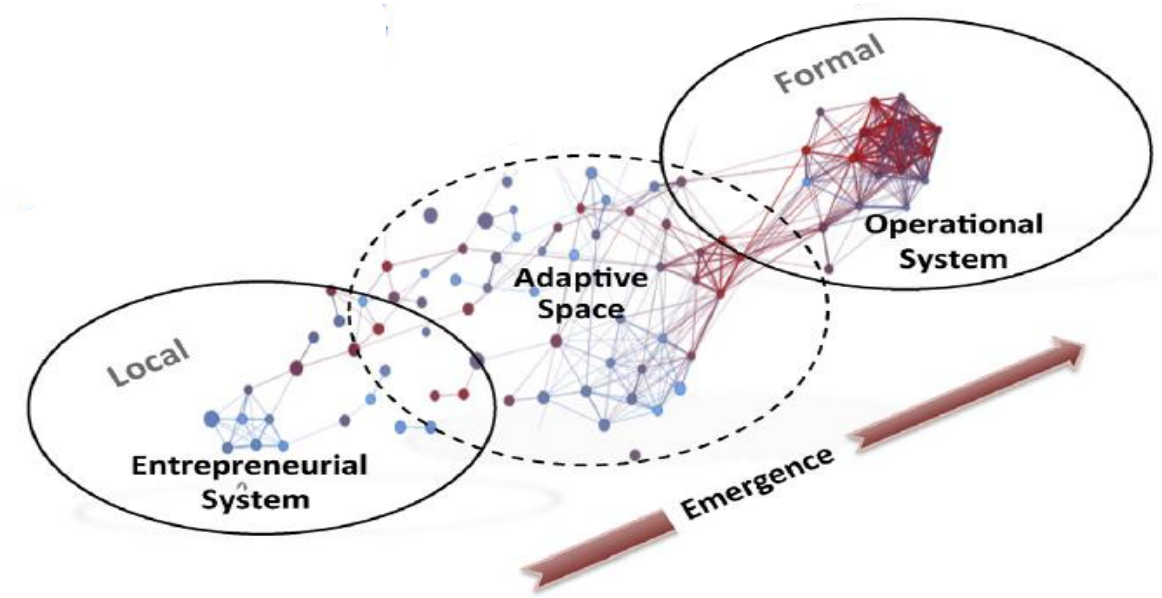


Figure 16: Organisational element of the Complexity Leadership Model (adapted from Uhl-Bien & Arena, 2017)

This Complexity Leadership Model offers a way in which leaders within the case study university could consider shaping the organisational design, management and governance of the institution differently, in a way that accommodates more of this systems-based approach. Within the university there are parts of university operations which require formalised operational systems, such as finance, human resources, procurement, teaching governance and elements of student administration etc. The need for formalised operating infrastructure and clear processes with a focus on zero errors in operation is desirable. This management of people through formalised structures is what currently exists across many HEIs as the operational norm and is the prevailing leadership approach that is experienced in the case study university. When considering universities from a more systems perspective, the benefits of the 'Adaptive Space' and the 'Entrepreneurial System' start to emerge.

What these spaces potentially provide is greater freedom to innovate, collectively, across boundaries and disciplines, even across institutions. The entrepreneurial system is where learning emerges from interactions. This could combine students, academics from specific or multiple disciplines and employers from specific sectors to provide a richer and faster paced learning experience, potentially located in a university setting, online and/or in the workplace. There are microcosms of this that exist already in the case study university, particularly for applied courses in the medical and allied professions, and to some extent in teacher education, although whether the full potential of this suggested approach is being realised is open to question. The adaptive space is the intertwining of operational and entrepreneurial, being the place where the organisational conditions are created to allow the flow of knowledge and creativity from the entrepreneurial space that has wider application potential to emerge and be formalised as needed into the operational structures.

These differing spaces that allow for both formalised structure, bureaucracy and control to sit alongside space for fast paced innovations without boundaries and with minimal rules to stifle creativity, strike considerable parallels with the conditions that the case study university operated with for the first 6 months or so of the Covid-19 pandemic. Operationally, there was a complete lock-down on finances and recruitment, and very tightly held approval processes in place for these. At the same time, academics and researchers were encouraged to work together across all boundaries, to be creative and innovate as they converted their teaching materials and sessions to online versions and worked together to find the breakthrough vaccine needed. There was a sense of liberation reported by interview respondents – people felt freed to work to their strengths and to

learn from colleagues, thus spiralling the learning effect. Where previously they had felt powerless, the conditions were created where they were empowered.

When considered in terms of teaching, the growing competition from corporate universities should be cause for concern. Through the review of literature, and particularly considering the changing nature of the relationship with the student population, there is real opportunity for universities to become even more entrepreneurial and adaptive in terms of teaching development and delivery.

Ultimately, what is suggested here is that within the case study university it could be reviewed where elements of this type of organisational design might already be working well and whether there is even more that can be done to enhance these areas of practice through policy and governance changes, and a broader understanding of this system-based approach. There is then the opportunity to look more widely across the institution in terms of how varying aspects of work are being led and managed, and whether there is an opportunity to look at this differently. In order to do this, I believe an evolved type of leadership practice is needed.

5.3 Understanding individual cognition and the development of a new model for leadership practice

The research gathered in relation to research questions two and three suggests that the way individuals organise their thinking about the complexity they experience around them impacts their approach and response to it. In the case study university, whilst individual leaders stated that they had greater confidence in their own abilities to gather insights and think more pragmatically, this appeared to be dissipated when they came together as a leadership group, with individualistic thinking that referenced narrower frames of reference coming to the fore. This suggests that whilst it will be important to focus on supporting the development of individual leaders, there is also an argument for considering the development of shared leadership practice. It is for this reason that a model of leadership practice that can be applied at different levels of the system is being suggested as an output from this research. Whilst expanding the breadth of leadership practice amongst individual leaders is desirable, it is recognised that when using a distributed and/or systems leadership approach elements of leadership practice can be distributed amongst a group who together then provide collective leadership strength and insight. As long as those in the group collectively demonstrate all areas of leadership practice suggested, then it is this collaborative cognition that matters – it is not just about one individual leader holding all the qualities and skills, as is often considered to be the case.

Having considered the organisational factors related to complexity, and the emergence of the significance of systems and systems thinking within this, considering complexity from the individual perspective has also been illuminating, particularly given the stance taken that individuals are an active part in the creation, shaping and interpretation of the system they occupy. Insights gained from reviewing cognitive complexity suggests that a better

understanding and appreciation of complexity concepts; emotional intelligence; self-learning; dialogue and systems thinking will all support the development of greater mental agility that will support enhanced cognitive complexity. These factors were supported and augmented by research respondents, who cited leaders needing personal understanding and confidence; trust in the system and each other; the ability to enable collaboration and agility; and time for listening, skills development, learning and reflection (Figure 13, page 179). The literature also suggests that those with greater cognitive complexity are able to construct their understanding of complexity differently, often helping others to also understand complexity in a more simplified way. All of these factors are therefore important in considering how leadership practice needs to be shaped in order for leaders to feel more confident, individually and collectively, to lead in a complex environment.

Looking more broadly at the exploration of leadership literature undertaken for this research in general terms, and for the HE sector specifically, has indicated that the role that leaders hold, and the leadership practice that needs to be exhibited is becoming more demanding. With leadership characteristics from this literature gathered in a mind map for ease of analysis (see Appendix 7), a range of factors emerged as key themes. The need for academic and professional credibility; the need to manage operations with agility and people with compassion; and as Shufutinsky, DePorres, Long, and Sibel (2020, p. 24) highlight, the fact that *"leaders must be able to embrace and accept unlearning, discomfort, continuous inquiry, conflict, and to lead ongoing knowledge creation in complex and uncertain scenarios."* When considering leading through such complexity, leadership that enables ambidexterity and change and trustworthy leadership were key factors in achieving this. The need for leaders to exhibit genuine listening skills; build relationships, rapport and deep understanding based on dealings over time; to be visibly pro-active and

authentic, with an open mindset and an openness and transparency of communication, with no hidden agendas were also cited.

What also became clear from evaluating the eight dimensions of organisational change capacity based on the Judge and Douglas (2009) framework (section 3.4.3 and section 4.4.3), were that four of these themes where shown to be most significant. The first highlighted the need for trustworthy leadership, with a strong sense of togetherness and personal rapport in relationships. The second was need for effective communication, leaders who knew how to speak with an open, honest and authentic voice; who could use formal and informal communications effectively; and who could personalise communication and create authentic dialogue. Systems thinking was recognised third as a quality and practice that was generally not well understood or enacted by HE leaders at this case study university. The final theme saw the need to recognise interdependent systems; to reduce defensiveness and protectionism of boundaries; to relinquish power and hierarchy to allow greater freedom to operate in a wider system with more permeable boundaries, were all seen as desirable.

Bringing these different elements of learning together starts to suggest that there is a need for internal personal focus as well as external action and interaction as a core part of any leadership practice. The need to continue to develop personal awareness and insight as well as connecting with others is vital. As section 4.5.2 outlined, the outcomes from the use of the Competing Values Framework (Figure 14, page 183) supports this, with individual ownership of personal actions and reactions; enabling collaborative endeavour across boundaries through strong and trusting relationships; having personal confidence, empathy and consistency when dealing with complexity; and effective and simple communication

echoing the call for this mix of introspective reflection, inter-personal awareness and communication as well as enabling action.

Considering this range of characteristics alongside the Complexity Leadership Model (CLT) (figure 3, page 20), which was a key starting point for this research, there appears to be alignment. The CLT model as a framework for leadership adaptability suggests that the skills to manage operations effectively are needed, as are the skills to support collaboration and innovation. Uhl-Bien (2021) highlights that centralised and top-down leadership can co-exist with collective, relational and distributed leadership, providing the ideal conditions for adaptability, and therefore being able to enact both can be helpful. Implicit within this then is the need for management across boundaries, management of the system as well as specific operations, and enablement of action by the people.

When this broad spectrum of findings is considered alongside the array of leadership models and theories that currently exist, there are elements of many of them that speak to these requirements, although no one approach that brings them together. Strengthening the focus on self as well as others is a key need, as is the focus on both systems and operational leadership. Based on the identification of this gap, I considered these four areas and further developed these as key leadership dimensions.

These differing dimensions reflect the multiple aspects of leadership practice being highlighted throughout this research, consolidating elements from the leadership literature, the Complexity Leadership Model, the Competing Values Framework, the Judge and Douglas framework, and the interview and questionnaire data. Using these primary and secondary sources that considered the dynamics of complexity and the individual and

organisational responses to this highlighted that in terms of future leadership practice there is a need for clear and decisive leadership of operations; a need to understand and manage effectively the dynamics of systems; the need for an ability to connect individuals and the organisation through effective cultural and behavioural leadership; and a call to understand and manage self as a critical part of any leadership practice. All of which requires clarity of personal identity and purpose, aligned with, and in tune with, the wider context and purpose of the higher education sector as a whole.

In light of this, I am proposing a new model for leadership practice which combines the range of elements that have emerged from this research as being necessary for the future. This model, shown in Figure 17, I have called **Bricolage Leadership Practice**.

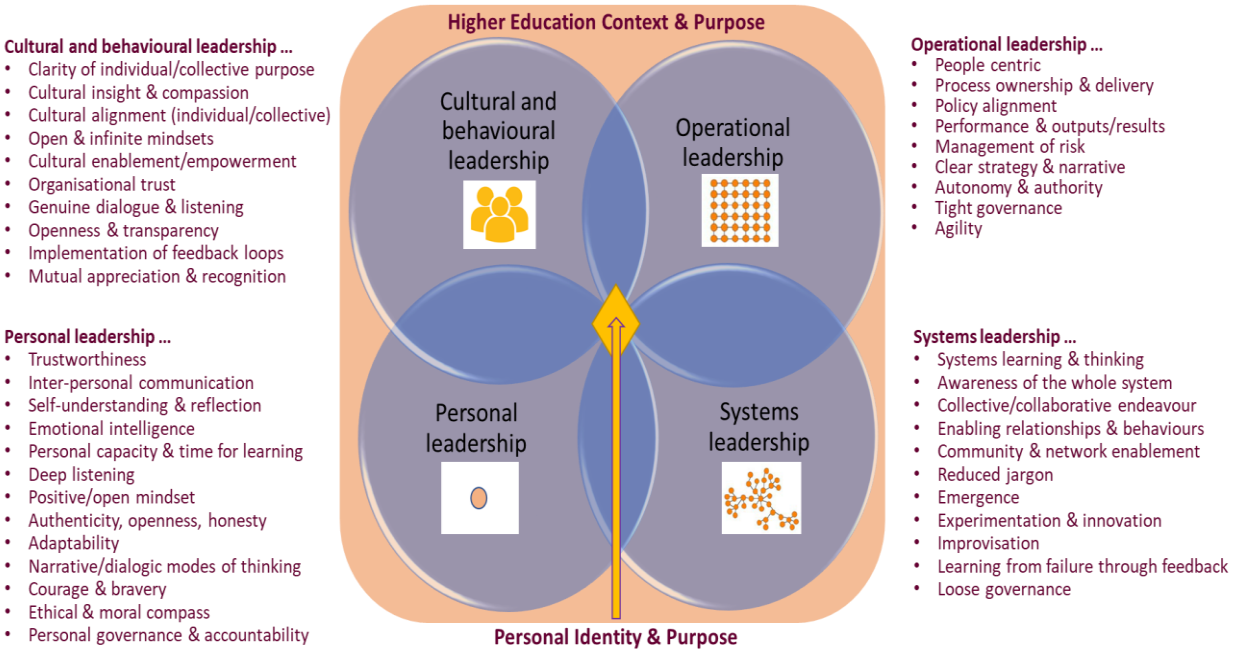


Figure 17: Bricolage Leadership Practice (Steed, 2021)

The term bricolage was originally coined by Levi-Strauss in 1966 and in broad terms was about using whatever resources are to hand in order to create novel solutions. Developed as a concept since then, it is seen as a notion where there is a capacity to see beyond the present, whilst not overlooking the available and current resources. Weick also used the term bricoleurs to describe leaders who needed to bring together disparate information, making sense of them in order to more effective leaders (Brazer, 2019). Paolino (2020) identified a number of the features of bricolage as including:

- A skilful learning dimension
- A response to surprises and unexpected events
- Adaptive actions
- Departure from routines and embracing change
- A bias for action
- Creating new 'services' from existing resources

Alongside this there is a strong sense of collective endeavour and decision making, and a collective ownership of task and outcome. Social identity is also firmly connected, meaning that the identity of the individual is present and important, whilst also being nested, moderated and influenced by the connections, relationships, and interactions with others. This model therefore moves away from being an 'individualistic' internalised leadership approach to one which anticipates, expects and encourages adaptation with the environment.

For me, this provided a concept that works at an individual and collective level. For individuals to look inside themselves at the personal resources they have available to them, to fully understand what they are and learn how to develop and apply them effectively is what is critical. Alongside this, that sense of reaching out and taking adaptive actions and

creating new ideas and innovations which are collectively owned. Organisationally this also has the potential to work in terms of shared leadership practice at any level in the system. The aim of this new model is not to suggest that existing leadership models and theories are no longer fit for purpose, as I believe they all have their place, and that situations and circumstances may require drawing from a range of them at any one point in time. What this model aims to do is provide a more focused guide to some of the more essential requirements for leadership practice in this case study higher education institution at this point in time, as informed by this research. It synthesises some of the main ingredients that those in leadership, and non-leadership positions, can use as a focal point through which they can consider and develop their own leadership practice. Likewise, those responsible for leadership development in higher education more widely may also find such a model of interest.

The element of purpose included in the model has been an underlying and emergent theme throughout the research. From the literature there seemed to be a sense of evolution over time, a gradual morphing from one purpose to another, or in fact a gathering of multiple purposes as new ones have been added in. The journey for the sector has moved from being educators of the elite and generators of new academically driven knowledge, funded in large by society as a way of investing in the development of the future; to being responsible for the social, moral, physical, mental and educational development of a wide range of tomorrow's workforce - sold directly to them, whilst delivering research that solves world issues, and running commercial activities to gain additional income to support future university investment.

What I believe could be an underlying cause of much of the complexity in the case study university as described by research respondents is the lack of clarity in terms of what the university stands for. What they described in terms of the complexity factors at this university also related to the wider sector, including the challenges for individual institutions in dealing with issues such as externally imposed policy and regulations, funding changes, competition across the sector, the changing expectations of the sector by a range of stakeholders, the changing role and remit, the changing culture, the impact of new technologies, international market changes and internally created complexity due to internal organic growth. There was a suggestion that individual institutions have embedded governance, organisational structures, and ways of working that draw from the past and that are difficult to re-imagine in this current and fast evolving landscape, especially when it is not fully clear what the current landscape for the sector actually is. The multitude of competing demands on universities from such a wide range of stakeholders makes it difficult for senior leaders to choose to focus in one direction or another; instead research respondents were clear that all agendas needed to be balanced and met.

Bringing clarity to the core purpose of this case study university, that can be clearly articulated and understood, could be the fundamental change that is needed in order to cut through the complexities that it is currently grappling with. Alongside this, helping to translate, connect and clarify the individual and collective purpose of those who work in and lead the university is also needed.

5.4 Chapter summary

This discussion chapter has taken a macro view of the results from this research, reaching across the multi-layered and multi-faceted research elements to bring out the insights that have been gained from considering the dynamics of complexity within the higher education sector and in particular one case study university, and what this means in terms of the development of senior leadership practice in this case study university. Whilst there remains significant richness in the depth of data discovered, the underlying themes that resonated throughout included: considering the higher education sector as a system with the University of Sapientia as a part of this; re-thinking the organisational design of the case study university and how within this both the fluidity and formality of complexity may be able to be embraced; how being clearer about core purpose may help to shine a light on levels of complexity that may have the potential to be removed, as well as helping to provide greater personal and organisational alignment; and finally a new model for leadership practice, Bricolage Leadership Practice, which brings together many of the elements of leadership practice that have been highlighted throughout this research that are considered to be needed both now, and in the future.

6 Conclusions

6.1 Conclusions and contribution to knowledge

The aim of this research was to explore, discover and allow concepts and ideas to emerge, using a grounded theory-based approach. It sought to draw from a range of research disciplines, providing a contribution to knowledge by connecting the fields of complexity science, leadership, higher education, individual cognition and organisational readiness.

Whilst intuitively it seemed that the English higher education was a complex sector, and that the case study university was also complex in the way it operated, this has not previously been formally reviewed or evaluated, nor lessons learnt in terms of what this means for leadership practice in this English context. This research shows that whilst individuals within this one case study university have confirmed these suppositions, there are many factors that both influence and contribute to this. The recognition by individual participants that they were operating in a local and wider system which impacts their choices, actions and reactions has been useful to capture in this context, as has the realisation by this senior leadership group that an enhanced level of systems thinking is need by themselves as individuals, as well as collectively as group, so that they can work more effectively together.

Visualising how this complex system could be interpreted in a different way has also been new, with the specific consideration of the Complexity Leadership Model as a way of making meaning of how this university system could be managed differently. Using this framework alongside the wider learning from the complexity sciences has provided a lens through which sense could be made of a number of the dynamics at play, particularly in

terms of the tensions between the need for tight organisational systems and fluidity to allow for ambiguity and uncertainty. What has emerged from the research is the overriding focus on the HE environment of governance and regulation, which is perceived as having tightened rather than loosened the 'operational management' effect. This raised the question of the causal nature of complexity, and whether this was being generated externally, internally or individually. With the answering appearing to be 'all three', what this research has also revealed is that the overwhelming majority of respondents felt that the sector was becoming more complex, with many feeling that they had limited rather than full control over this, feeling powerless to deal with the external factors being highlighted. What many of them did agree on though was that they could control their own personal response to this, again emphasising the personal responsibility leaders have for their actions and reactions.

A unique contribution to knowledge that this research makes is not just the consideration of complexity and higher education, or complexity and leadership in higher education, but also the connection to readiness – both individual and organisational. The sense of connectivity and influence that individuals have was thought to hold relevance, although it was unclear at the beginning of the research whether this would be the case. Ultimately it has been shown that individual cognition and self-understanding holds relevance in terms of how individuals, in this case senior leaders, perceive, interpret and influence the environment around them and therefore make choices about their actions and reactions, which often then have significant impact on others and their environment. The dynamic interplay between the individual leader, their environment and what this means for their leadership practice, and how much of the management of this dynamic rests with the individual has been intriguing to discover. However, what this research also suggested was

that whilst individual leaders believe they have a good level of confidence and competence in dealing with complexity, albeit still needing improvement in certain areas, it is when these leaders get together that the collective ability to act cohesively appears to be lost. This suggest that whilst the university is harnessing this individual capability, at an organisational level it becomes dissipated. This need to act more effectively as a collective highlighted a key theme which also emerged from this research – that of purpose. Clarity around a shared purpose that enables people to work in a unified way, even within different parts of the system, was highlighted as being needed.

Considering this case study university, and the wider HE sector, as a system, adds to the existing and emergent work in this area. Reviewing this from both individual and organisational perspectives and considering the interplay between them has been novel and has added additional insight to this area of growing interest. Most significantly this research used a grounded theory-based approach which allowed the emergence of information, themes and concepts which may not have otherwise arisen had a more traditional method of research been undertaken i.e. model-led. Whilst models such as Complexity Leadership have been used to help shape the meaning of the results gained, this research did not set out to test the absolute fit of such a model within this context. Instead several models, theories and researched informed thinking, as outlined in the literature review, helped to shape the direction of the research. The grounded-theory approach also allowed the research to flex and incorporate changes in the context and conditions under which the research was taken, most notably the early stages of the Covid-19 pandemic during which the final stages of data collection were completed. This was important to achieve given the significant impact this event had on the individuals, institution and global environment which this research has been considering.

From this emergent approach a new model for leadership practice has therefore been suggested. This connects a range of differing areas, providing a new contribution to knowledge in relation to the enhancement of leadership practice in this one English higher education institution. Intended as a conceptual and reflective framework for leaders in higher education (and potentially beyond). It offers the potential to be a first step in the development of a new competency framework for the enhancement of leadership practice in higher education. It could also be developed into an assessment tool through which leaders could formally or informally understand and assess the strengths and gaps in their leadership practice. It seeks to develop learning amongst the leadership and academic community that leadership practice is multi-dimensional and the development of it is likely to be a life-time journey of learning.

Finally, this research has suggested that individual effectiveness does not equate to group effectiveness, and that ultimately it is the adaptation potential between self and others that is of key significance. The application of this model to leadership teams as well as those in individual leadership roles may help to bridge the gap between individual and team effectiveness, with the key element of having a shared sense of purpose and a personal identity within this being an area that should not be neglected.

6.2 Implications for future research

This research has been limited in scope in its application to just one higher education institution in England, and to one group of senior leaders operating at a specific leadership level. Consequently, future research would be beneficial across a wider range of HEIs, including the potential for a greater level of comparative analysis between differing university types, such as Russell Group universities, post-1992 universities and even

corporate/private universities to review whether these findings, and the Bricolage Leadership Practice model are transferable, or worthy of further adaptation.

Future research might also consider in more depth the wider policy and regulatory environment, considering the sector in its entirety as a dynamic system, understanding more fully the relationship between policy, regulation and the organisational design of HEIs. The question of the purpose of the higher education sector is also worthy of further investigation, with wide stakeholder input from within and outside the sector.

Application of these findings may also hold relevance to other sectors which might appear to operate in similar ways, such as the NHS and blue light services. Whilst the focus may be different in these sectors, consideration of leadership practice within these complex systems is likely to be of interest.

From an academic perspective, social scientists and those exploring leadership and leadership practice in more depth may find the insights gained from combining the complexity sciences with leadership useful to explore further. As outlined in the previous section, there is opportunity to enhance and apply in practice the Bricolage Leadership Practice model and to gain further insights from this in order to continually develop and enhance this approach.

I also believe this research has provided an opportunity to continue to demonstrate that the design and development of research studies using approaches such as grounded theory is important for the research community to consider, particularly in the social sciences, given the historic leaning towards more controlled, experimental and quantitative methods

that have been favoured (Douglas, 1976). I hope this study has shown that research can be emergent, reaching across a number of disciplinary boundaries, with findings providing a richness at both a micro and macro level. I would suggest that future research approaches recognise the value of such combined methods.

Finally, this work has built on, extended and further shaped my own personal knowledge of the dynamics of organisational and individual complexity, illuminating what I may need to build within my own leadership practice, as well as how I consider shaping and developing the leadership practice in this case study institution, which is a key responsibility of my role. It has provided the opportunity to reflect on the areas of leadership development and practice that I may be able to influence and re-shape, and those that might be part of the wider system which will be harder to influence and navigate, although will ultimately have an impact. It has taught me that quite often there are no right or wrong answers, and what might be right today may be wrong tomorrow, and that holding this level of ambiguity and uncertainty as a leader takes a much deeper level of self-understanding and self-leadership than might have been first imagined. However, it has also taught me that complexity can also be adjusted through our own perspective and self-narrative, and that on occasions taking a more simplified look at situations may be the most sensible solution needed.

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8 Appendices

8.1.1 Appendix 1 Information Sheet

Can understanding the dynamics of complexity provide new insights for senior leadership practice in one higher education institution in England?

Researcher: Carol Steed
Programme: Professional Doctorate in Education (EdD)
Supervisors: Toby Greany and Sarah Speight

THE RESEARCH

This research is being undertaken in the University of [ ] using a case study approach. It provides a new contribution to knowledge by considering the complexity of the Higher Education (HE) sector in England and the changing nature of leadership within this HE context. The research draws on understandings and insights from the complexity sciences and complexity leadership theory and the new learning this may provide. It also considers the dynamic interplay that both individual and organisational development have on the potential application of complexity principles in practice in this context. This research seeks to determine from this investigation whether there are any implications for leadership practice in the future.

A key part of this research is the active participation of senior leaders in the University in order to gain perspectives and insights not just of the theory, but of its potential application in practice. By using an iterative research methodology which has a number of research stages, it is hoped that the opportunity for exploration, insight and understanding is deepened. It is hoped that the outcomes of this research will be of interest to anyone in a higher education setting who wants to enhance their leadership practice.

YOUR OPPORTUNITY TO BE INVOLVED

There are three key ways in which you may be asked to participate in this research:

- Completion of an on-line questionnaire *(both questionnaire stages now completed)*
- Interviews *(two interviews: 1 - 1.5 hours each: second interviews currently underway)*
- Focus group *(one focus group of around 3hrs in length – to be booked for September 2020)*

Your participation is entirely voluntary and you can withdraw at any time. All data gathered will be held securely and all information is confidential with full anonymity provided in the final submission/report.

This research is not sponsored or supported by the University. It is personally funded and being undertaken in my own time.

CONTACT

If you have any further questions about this research, please do get in touch.
Carol Steed carol.steed@

8.1.2 Appendix 2 Consent Form

Research title: *Can learning from complexity leadership theory provide new insights for leadership practice in higher education?*

Researcher: Carol Steed
Programme: Professional Doctorate in Education (EdD)
Supervisors: Toby Greany and Sarah Speight

- I have read the Information Sheet and understand the context for the research.
- The nature and purpose of the research has been explained to me and I understand my involvement in / contribution to it.
- I understand and agree to take part, knowing that I can withdraw at any time and that this will not affect my status now or in the future.
- I understand that the information gained from this study may be published, although any information I provide will remain anonymous. I understand that if I am involved in a focus group that I will be identifiable to others in the group.
- I understand that the interview/focus group will be recorded, and this data will be stored electronically in the form of an audio recording. I also understand that this may also be transcribed for analysis purposes only.
- I understand that only the researcher will have access to this data, which will be stored in a secure place, with all data files password protected and encrypted.
- I understand that I may contact the researcher or supervisor if I require further information about the research, and that I may contact the Research Ethics Co-ordinator in the School of Education if I wish to raise any concerns about my involvement in this research.

Signed …… (research participant)

Print name ……

Date ……

8.1.3 Appendix 3 Questionnaire 1

Complexity, Higher Education and Leadership Practice: A research investigation

Complexity is subjective, it is experienced differently by different people. This questionnaire seeks your personal views of complexity in higher education, exploring these from a number of different perspectives.

The questionnaire is split into three sections: the wider HE sector, the University of [BLANKED OUT] now, and the University of [BLANKED OUT] in the future. Please complete all sections and all questions as honestly as you can. Given the range of colleagues being asked to complete this, I am sure that some debate may arise as to the provenance of some of the question sets. Whatever your academic viewpoint, I would appreciate your support in completing this anyway. They have all been chosen with a specific rationale in mind.

It should take you no longer than 10 minutes to complete the questionnaire in full. Please also complete your personal details as requested. These will be held confidentially and will only be used for data analysis purposes.

Further information about this research is included in the information sheet on the email sent to you that included the link to this questionnaire. Please read this before completing the questionnaire. The deadline for completion is Thursday 8 August.

This Doctoral research is not sponsored or supported by the University. It is personally funded and undertaken in my own time.

Thank you for taking the time to complete this questionnaire.

1. By completing this questionnaire I confirm that I have read the information sheet and understand the context for the research; I understand that I can withdraw at any time; I understand that the information gained from this study may be published, although any information I provide will remain anonymous *

- ◯ Agreed
- ◯ Other

About complexity in the higher education sector in England

In this section you are invited to complete questions that consider complexity in general terms and it's broadest sense (i.e. structure, systems, processes, people) in the context of the higher education sector in England, as it is now, and how it might be in the future. Please answer from your own personal perspective, not a perspective that you feel represents others in your type of role - purely your own view.

2. Do you believe the higher education sector is complex *

- ◯ Yes
- ◯ No
- ◯ Don't know

3. Do you believe the complexity of the higher education sector is changing *

- ◯ Yes
- ◯ No
- ◯ Don't know

4. In your view, looking back over the past 3-5 years, do you believe the higher education sector has become *

- ◯ More complex
- ◯ Less complex
- ◯ Has about the same level of complexity
- ◯ Don't know as have only just joined the sector

5. In your view, over the next 5 years, do you believe the higher education sector will *

- ◯ Become more complex
- ◯ Become less complex
- ◯ Will have about the same level of complexity

6. Which three factors do you believe are impacting most on complexity in the sector *

7. Within this context, do you believe the University *

- ◯ Has full control over how it deals with and manages complexity
- ◯ Has limited control over how it deals with and manages complexity
- ◯ Has no control over how it deals with and manages complexity

8. Please use this space to add any other comments or thoughts

About complexity at the University of [BLANKED OUT]

In this section you are invited to complete questions that consider complexity in general terms in the context of the University of [BLANKED OUT] as it is now, and as it might be in the future. In this context, 'work' represents the type of work that you are involved with at the University, be that teaching, research or professional services activities. Your answer should reflect an 'on average' or 'in general' perspective, therefore offering an overall approximated view. Again, please answer from your own personal perspective, not a perspective that you feel represents others in your type of role - purely your own view.

9. In the context of the University as it is today (part 1) .... *

	Yes	No	Don't know
The University's vision is clearly articulated and understood internally and externally	○	○	○
The scope and purpose of the University is well defined	○	○	○
Success measures for the University are clearly defined	○	○	○
Quality and regulatory requirements are well defined	○	○	○
Staff across the University are familiar with the technologies that they are required to use in their work	○	○	○
Staff across the University deal with their area of a work in a commercially mindful way	○	○	○
Business, resource and people planning is well understood and defined	○	○	○
The University's suppliers and partners are clearly defined and well managed	○	○	○
Lines of responsibility for tasks and deliverables are clearly defined	○	○	○
Accurate, timely, and comprehensive data reporting is possible	○	○	○

10. In the context of the University as it is today (part 2) .... *

	Yes	No	Don't know
Staff have the management tools and skills needed to support the work they are undertaking	○	○	○
Sufficient people with the right skills to match the work that is required across the University	○	○	○
Leaders and managers have adequate oversight of staff (i.e. direct reporting is effective)	○	○	○
The right people are appropriately allocated to undertake the right work	○	○	○
Collaboration across multiple disciplines and departmental areas happens regularly and consistently	○	○	○
Budgets are sufficient for the work being undertaken	○	○	○
Budgets can be used flexibly	○	○	○
There is an inter-relationship between different areas of work	○	○	○
The pace of work is achievable	○	○	○
Resources are available when needed	○	○	○

11. In the context of the University as it is today (part 3) .... *

	Yes	No	Don't know
The business case for work that is undertaken is clear	○	○	○
The goals for the work undertaken align with the University's strategy	○	○	○
Across the University, where teams exist, team members are motivated and function well as teams	○	○	○
Where work is delegated to teams, the team has the authority to make necessary decisions	○	○	○
The design and delivery of the work involves on-going organisational/cultural change	○	○	○
External stakeholders are aligned, supportive and committed to the University	○	○	○
External stakeholders have a realistic and shared understanding of the value of the University	○	○	○

About complexity at the University of [BLANKED OUT]

12. In the context of the University as it will be in the future, do you expect this situation to (part 1) .... *

	Become less complex	Remain the same	Become more complex	Don't know
The University's vision is clearly articulated and understood internally and externally	○	○	○	○
The scope and purpose of the University is well defined	○	○	○	○
Success measures for the University are clearly defined	○	○	○	○
Quality and regulatory requirements are well defined	○	○	○	○
Staff across the University are familiar with the technologies that they are required to use in their work	○	○	○	○
Staff across the University deal with their area of a work in a commercially mindful way	○	○	○	○
Business, resource and people planning is well understood and defined	○	○	○	○
The University's suppliers and partners are clearly defined and well managed	○	○	○	○
Lines of responsibility for tasks and deliverables are clearly defined	○	○	○	○
Accurate, timely, and comprehensive data reporting is possible	○	○	○	○

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13. In the context of the University as it will be in the future, do you expect this situation to (part 2) .... *

	Become less complex	Remain the same	Become more complex	Don't know
Staff have the management tools and skills needed to support the work they are undertaking	○	○	○	○
Sufficient people with the right skills to match the work that is required across the University	○	○	○	○
Leaders and managers have adequate oversight of staff (i.e. direct reporting is effective)	○	○	○	○
The right people are appropriately allocated to undertake the right work	○	○	○	○
Collaboration across multiple disciplines and departmental areas happens regularly and consistently	○	○	○	○
Budgets are sufficient for the work being undertaken	○	○	○	○
Budgets can be used flexibly	○	○	○	○
There is an inter-relationship between different areas of work	○	○	○	○
The pace of work is achievable	○	○	○	○
Resources are available when needed	○	○	○	○

14. In the context of the University as it will be in the future, do you expect this situation to (part 3) .... *

	Become less complex	Remain the same	Become more complex	Don't know
The business case for work that is undertaken is clear	○	○	○	○
The goals for the work undertaken align with the University's strategy	○	○	○	○
Across the University, where teams exist, team members are motivated and function well as teams	○	○	○	○
Where work is delegated to teams, the team has the authority to make necessary decisions	○	○	○	○
The design and delivery of the work involves on-going organisational/cultural change	○	○	○	○
External stakeholders are aligned, supportive and committed to the University	○	○	○	○
External stakeholders have a realistic and shared understanding of the value of the University	○	○	○	○

15. Please use this space to add any other comments or thoughts.

Your Details (for analysis purposes only)

Please complete the following information so that any patterns in responses can be reviewed. They will only be used for analysis purposes only and all information will be aggregated.

16. Your name (optional)

17. Faculty / School / Professional Services Department

18. Primary job family

- ◯ R&T (includes R&T, R & T&L)
- ◯ APM

19. Length of time working at the University

- ◯ Less than 3 years
- ◯ 3-5 years
- ◯ 5-10 years
- ◯ More than 10 years

20. Your age group

- ◯ 25 years and under
- ◯ 26-39 years
- ◯ 40-50 years
- ◯ over 50 years

8.1.4 Appendix 4 Interview Questions 1

Opening

- Thanks for attending, giving your time etc.
- Format for the interview (timing and flow)
- Confidentiality
- Explanation of recording approach and agreement to this
- Consent form introduction

Introductions

- My role as researcher
- Information about the research, why I'm doing it and the research process / method
- Overview of the research questions (printed on card as a visual prompt for participants to read)
- Participants role in research process and what I need from them
- Opportunity for clarification questions

Confirmation of interview

- Confirmation to proceed on basis of what is understood
- Signing of consent form

Questions

About complexity

1. How would you define complexity, what does this term mean to you in a general context, not necessarily in a higher education context e.g. if you were defining it for a child?

2. Tell me a little more about what you think are the factors that make things seem complex?

3. When considering complexity in a professional setting, do you think you can control, manage or change complexity? How?

About complexity and the University

4. Having considered complexity in a bit more detail, would you say that the higher education sector/environment is complex? Please give reasons for your response.

5. Do you believe the University is a simple or complex organisation? Please explain the reason for your answer.

6. Over the last 5-10 years, do you think that the higher education sector has become more complex? Please explain and give examples for your answer if you can.

7. In your view, in the future (i.e. the next 5-10 years?), will the sector become a more or less complex environment to operate in? What are the factors that are impacting do you think?

8. On a scale of 1 – 10, where 1 is not at all ready and 10 is absolutely ready, how ready do you feel senior leaders at the University are to deal with complexity? Please give reasons for your response.

9. If there was one factor that you feel would enable senior leaders at the University to be even better able to deal with complexity, what would it be?

About complexity and your own leadership practice

10. What, if any, impact do you think complexity has on your own leadership practice (e.g. your decision making, your behaviours, your leadership of others)?

11. On a scale on 1 – 10, where 1 is not at all ready and 10 is absolutely ready, how ready do you feel to deal with complexity as a leader? Give examples to illustrate if you can.

12. Are there any specific factors that you feel impact on how you believe you deal with complexity?

13. If you had to choose just one of these factors that you feel would enable you to be even more accomplished in dealing with complexity, which would it be?

Any other observations

14. Are there any other observations you would like to make about complexity and your University context?

Thanks and close

- Reiterate confidentiality etc.
- Reiterate next steps and invite further opportunities to be involved
- Thanks for time and active participation
- Opportunity to send on any further reflections, material, insights etc. if wish to

8.1.5 Appendix 5 Questionnaire 2

Complexity, Higher Education and Leadership Practice: A research investigation - Part 2

This questionnaire seeks to explore complexity at the University of [BLANKED OUT] from an individual leadership and University perspective. It is the third of five research stages, following on from a previous questionnaire issued and in-depth interviews, and will be followed by further in-depth interviews and a focus group. You do not have to have participated in the previous research stages to complete this questionnaire.

It is split into several sections and you should answer questions in all sections as honestly as you can. It should take you no longer than 10 minutes to complete the questionnaire in full. Please also complete your personal details as requested. These will be held confidentially and will only be used for data analysis purposes.

Further information about this research is included in the information sheet on the email sent to you that included the link to this questionnaire. Please read this before completing the questionnaire. The deadline for completion is 24 February 2020.

This Doctoral research is not sponsored or supported by the University. It is personally funded and undertaken in my own time.

Thank you for taking the time to complete this questionnaire.

* Required

1. By completing this questionnaire I confirm that I have read the information sheet and understand the context for the research; I understand that I can withdraw at any time; I understand that the information gained from this study may be published, although any information I provide will remain anonymous *

- ◯ Agreed
- ◯ Other

Leadership behaviours and complexity

In this section you are invited to complete questions that consider different types of leadership behaviour. Through understanding our behavioural responses in these areas, we can understand more about our ability to deal with and lead through complexity.

Please answer from your own personal perspective, not a perspective that you feel represents others in your type of role - purely your own view. You should also answer from the perspective of where you are now, and not where you feel you would like to be in the future. Please be as honest as you can in your personal assessment, considering what others may say you actually demonstrate in practice.

2. I would describe myself as being skilled in ... *

	Strongly disagree	Disagree	Neither agree /disagree	Agree	Strongly agree	Don't know
Anticipating and identifying future 'customer' needs	○	○	○	○	○	○
Creating a climate amongst staff for open discussion and participative decision making	○	○	○	○	○	○
Providing fast responses to emerging issues	○	○	○	○	○	○
Starting bold and ambitious initiatives	○	○	○	○	○	○
Keeping projects and work activities under close scrutiny	○	○	○	○	○	○
Being competitive to improve results	○	○	○	○	○	○
Allowing people to legitimately contribute opinions	○	○	○	○	○	○
Showing an appetite for hard work	○	○	○	○	○	○

3. I would describe myself as being skilled in ... (continued) *

	Strongly disagree	Disagree	Neither agree /disagree	Agree	Strongly agree	Don't know
Making sure formal guidelines and processes are clear to people	○	○	○	○	○	○
Expecting people to focus on the details of their work, and get this right	○	○	○	○	○	○
Encouraging members of the team to exceed traditional performance patterns	○	○	○	○	○	○
Launching new projects	○	○	○	○	○	○
Modelling an intense work effort	○	○	○	○	○	○
Recognising people's individual needs and being aware when people are burning out	○	○	○	○	○	○
Ensuring that University policies and procedures are understood	○	○	○	○	○	○
Meeting with 'customers' to discuss their needs	○	○	○	○	○	○

4. I would describe myself as being skilled in ... (continued) *

	Strongly disagree	Disagree	Neither agree /disagree	Agree	Strongly agree	Don't know
Inspiring direct reports to be creative and try new things	○	○	○	○	○	○
Enabling and encouraging career development and planning	○	○	○	○	○	○
Getting work done quickly	○	○	○	○	○	○
Emphasising the need for accuracy in work effort	○	○	○	○	○	○
Supporting people to achieve the right work/life balance that is right for them	○	○	○	○	○	○
Providing tight project management	○	○	○	○	○	○
Coaching people on career issues	○	○	○	○	○	○
Developing a competitive focus in myself and others	○	○	○	○	○	○

5. Please use this space to add any other comments or thoughts

The University's capacity for change

In the following sections you are invited to complete questions that consider the University's capacity for change. The first section considers capacity for change in general terms. The following section considers adaptability and the final section considers the performance of the University.

Your answer should reflect an 'on average' or 'in general' perspective, therefore offering an overall approximated view. Again, please answer in the context of the University as it is today and from your own personal perspective, not a perspective that you feel represents others in your type of role - purely your own view.

6. Members of the Senior Leaders' Forum collectively.... *

	Strongly disagree	Disagree	Neither agree /disagree	Agree	Strongly agree	Don't know
protect the University's core values whilst encouraging change	○	○	○	○	○	○
consistently articulate an inspiring vision of the future	○	○	○	○	○	○
show courage in their support of change initiatives	○	○	○	○	○	○
demonstrate humility while fiercely pursing the University's vision	○	○	○	○	○	○

7. Across the University as a whole, those on School and Departmental Executive teams *

	Strongly disagree	Disagree	Neither agree /disagree	Agree	Strongly agree	Don't know
effectively link senior leaders to front-line employees	○	○	○	○	○	○
show commitment to the University's well-being	○	○	○	○	○	○
balance change initiatives while getting the work done	○	○	○	○	○	○
voice dissent constructively	○	○	○	○	○	○

8. We have individual members of staff identified as change champions who... *

	Strongly disagree	Disagree	Neither agree /disagree	Agree	Strongly agree	Don't know
command the respect of the rest of the area in which they work	○	○	○	○	○	○
possess good interpersonal skills	○	○	○	○	○	○
are willing and able to challenge the status quo	○	○	○	○	○	○
have the will and creativity to bring about change	○	○	○	○	○	○

9. We have an organisational culture/cultures that.... *

	Strongly disagree	Disagree	Neither agree /disagree	Agree	Strongly agree	Don't know
values innovation and change	○	○	○	○	○	○
attracts and retains creative people	○	○	○	○	○	○
provides resources to experiment with new ideas	○	○	○	○	○	○
allows people to take risks and occasionally fail	○	○	○	○	○	○

10. Across all areas of the University, we have front-line employees who can.... *

	Strongly disagree	Disagree	Neither agree /disagree	Agree	Strongly agree	Don't know
open themselves to consider change proposals	○	○	○	○	○	○
have opportunities to voice their concerns about change	○	○	○	○	○	○
generally know how change will help the area where they work	○	○	○	○	○	○
generally view top management as trustworthy	○	○	○	○	○	○

The University's capacity for change (continued)

11. We have enough staff who recognise the..... *

	Strongly disagree	Disagree	Neither agree /disagree	Agree	Strongly agree	Don't know
interdependent systems implications of change	○	○	○	○	○	○
importance of institutionalising change	○	○	○	○	○	○
need to realign incentives with desired changes	○	○	○	○	○	○
value of addressing causes rather than symptoms	○	○	○	○	○	○

12. We have people throughout the University who.... *

	Strongly disagree	Disagree	Neither agree /disagree	Agree	Strongly agree	Don't know
are held accountable for their actions	○	○	○	○	○	○
meet deadlines and honour resource commitments	○	○	○	○	○	○
accept responsibility for getting work done	○	○	○	○	○	○
have clear roles and an understanding of who has to do what	○	○	○	○	○	○

13. Throughout all parts of the University, information flows effectively..... *

	Strongly disagree	Disagree	Neither agree /disagree	Agree	Strongly agree	Don't know
from senior leaders to those on the front-line	○	○	○	○	○	○
in a timely fashion	○	○	○	○	○	○
across different parts of the University	○	○	○	○	○	○
from (and to) "customers" and different parts of the University	○	○	○	○	○	○

The University's capacity for change (continued)

This set of questions considers the adaptability of the University, and the environment in which it is operating.

14. In the context of the University as it is today.... *

	Strongly disagree	Disagree	Neither agree /disagree	Agree	Strongly agree	Don't know
The management systems in the University work coherently to support the overall objectives of the University	○	○	○	○	○	○
The management systems in the University cause us to waste resources on unproductive activities	○	○	○	○	○	○
People across the University often end up working at cross-purposes because our management systems give them conflicting information	○	○	○	○	○	○
The University's management systems encourage people to challenge out-moded traditions and practices	○	○	○	○	○	○
The University's management systems are flexible enough to allow us to respond quickly to changes in the environment	○	○	○	○	○	○
The University's management systems evolve rapidly in response to shifts in our priorities	○	○	○	○	○	○

15. In the context of the University as it is today.... *

	Strongly disagree	Disagree	Neither agree /disagree	Agree	Strongly agree	Don't know
The University must frequently change its products and practices to keep up with competitors	○	○	○	○	○	○
Our products/services can quickly become obsolete/out of date in our sector	○	○	○	○	○	○
"Customer" requirements are fairly easy to forecast	○	○	○	○	○	○
Technology changes more quickly in our sector than in other sectors	○	○	○	○	○	○
There are few external threats to the survival and well-being of our University	○	○	○	○	○	○
Our sector is rich in investment capital	○	○	○	○	○	○
The University operates in a very dynamic, rapidly changing environment in technical, economic and cultural terms	○	○	○	○	○	○
The University operates in a very risky environment where one false step can mean the University's undoing	○	○	○	○	○	○
The University operates in a rapidly expanding environment through the expansion of old markets and the emergence of new ones	○	○	○	○	○	○
The University operates in a very stressful and hard to keep afloat environment	○	○	○	○	○	○

The University's capacity for change (continued)

This final section considers the performance of the University.

16. Please indicate the degree of importance you attach to each of the following areas in terms of their contribution to the success in delivering of the overall strategy of the University *

	Not at all important	Slightly important	Moderately important	Very important	Extremely important	Don't know
Financial profitability	○	○	○	○	○	○
Growth in overall size or portfolio	○	○	○	○	○	○
"Product" or service quality	○	○	○	○	○	○
Capacity utilisation (i.e. best use of human and other resources)	○	○	○	○	○	○
Process improvements	○	○	○	○	○	○
Employment stability	○	○	○	○	○	○
Employee development	○	○	○	○	○	○

17. Please use this space to add any comments or thoughts about anything you have completed on this questionnaire.

Your Details (for analysis purposes only)

Please complete the following information so that any patterns in responses can be reviewed. They will only be used for analysis purposes and all information will be aggregated.

18. Your name (optional)

19. Faculty / School / Professional Services Department

20. Primary job family

- ◯ R&T (includes R&T, R & T&L)
- ◯ APM

21. Length of time working at the University

- ◯ Less than 3 years
- ◯ 3-5 years
- ◯ 5-10 years
- ◯ More than 10 years

22. Your age group

- ◯ 25 years and under
- ◯ 26-39 years
- ◯ 40-50 years
- ◯ over 50 years

8.1.6 Appendix 6 Interview Questions 2

Opening

- Thanks for attending, giving your time etc.
- Format for the interview (timing, flow and permission to record)
- Confidentiality
- Participants role in research process and what I need from them
- My role as researcher

introduction to the research

- Reminder that this follows-on from their previous interview and is a further stage in research approach
- Last time considered what we mean by complexity, about complexity and the University and own leadership practice in relation to dealing with complexity
- Opportunity for clarification questions

Confirmation of interview

- Confirmation to proceed on basis of what is understood
- Signing of consent form

Questions

Follow-up questions from previous data collected…..About whether we control complexity and our response to this

10. In the first questionnaire issued in July 2019, 86% of respondents felt that the University has limited control over how it deals with and manages complexity. 14% felt the University has full control over this. Based on the situation as it was then, what do you think might be the reasons behind this response?

11. Given recent events, do you think this situation may have changed, and if so, how?

12. Whether you feel we can control complexity or not, do you feel you can control how you individually respond to it? How?

Leadership behaviours and complexity

13. Results from the latest questionnaire (January 2020, prior to recent events) suggested that senior leaders behavioural complexity reported that managing continuity in a stable environment (managing processes, policies, procedures etc.) and leading change (anticipating future needs, launching new projects, getting teams to exceed traditional performance patterns) were areas where they felt less able. Why do you think this might have been the case, and what actions might we need to take to change this?

14. Given the recent Covid-19 events, do you think there has been a different behavioural response from members of the Senior Leaders Forum than previously, for example in moving to full online learning within a week/two weeks, compared to if the VC had

asked for this 12 months ago? Why? What is it about individual mindsets and behaviours that may have been different?

15. Do you think recent events will have impacted on individual's future capacity and attitude towards dealing with complexity? Why?

The University's capacity for change

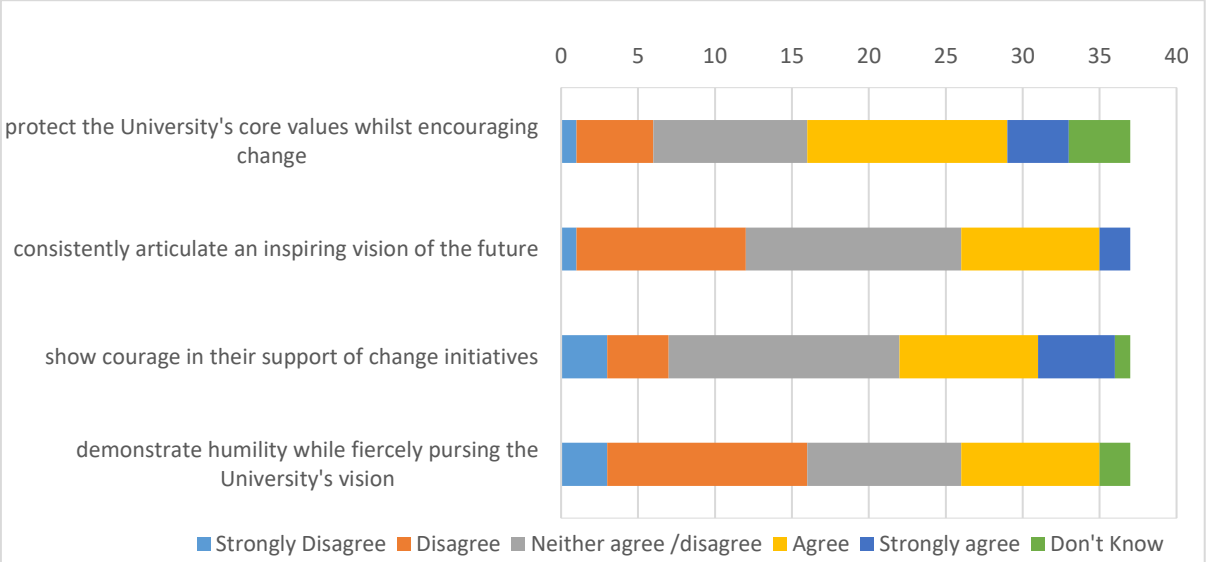
16. The questionnaire data also highlighted three key areas (below) which have significant potential to impact negatively on the University's capacity for change. If you had to identify 3 key actions to remedy each, what would they be?

    a. a lack of trustworthiness in leaders
    b. a lack of effective communication
    c. a lack of systems thinking across the University.

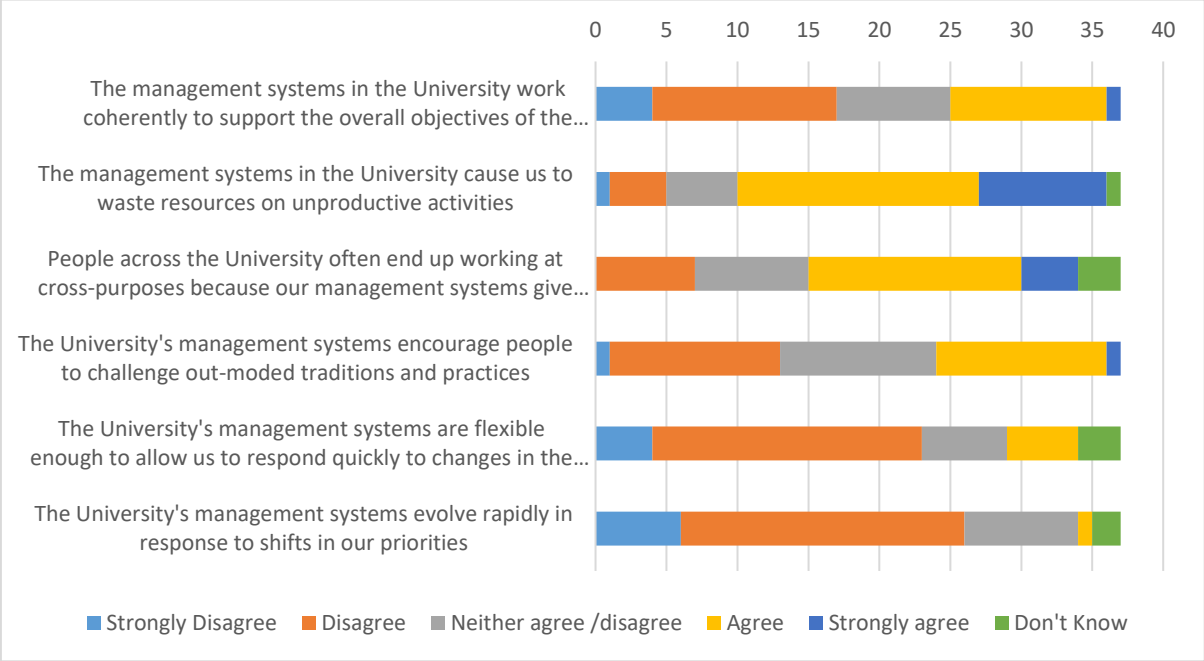
17. When responding to the questionnaire, a number of responses showed as *'neither agree/disagree'* for a number of the questions – some more than others. This type of response was particularly marked in the question relating to how members of the Senior Leaders' Forum work collectively – why do you think this might be? Does this provide any indicators of the senior leaders' collective readiness/capacity for change? (show this particular graph)

Members of the Senior Leaders' Forum collectively....

- protect the University's core values whilst encouraging change
- consistently articulate an inspiring vision of the future
- show courage in their support of change initiatives
- demonstrate humility while fiercely pursing the University's vision



18. Given the recent Covid-19 events, do you think that the results of the recent questionnaire in relation to organisational ambidexterity are still valid? Please explain the reasons for your answer.



19. Do you think recent events will have impacted on the University's ways of working in terms of how it deals with complexity in the future?

20. What might we learn from these events about how we consider and lead through complexity in the future, both as individual leaders and as a University?

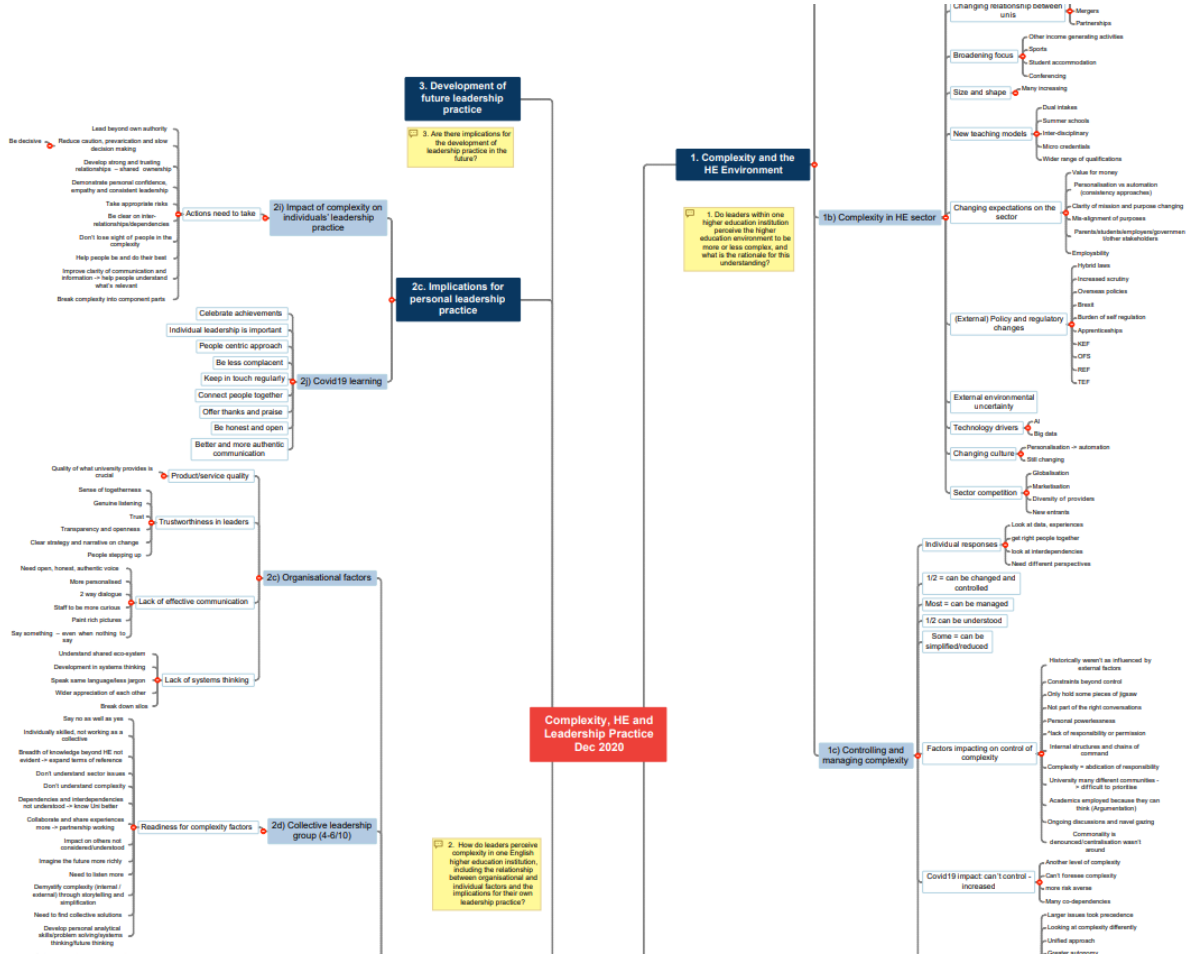
Any other observations

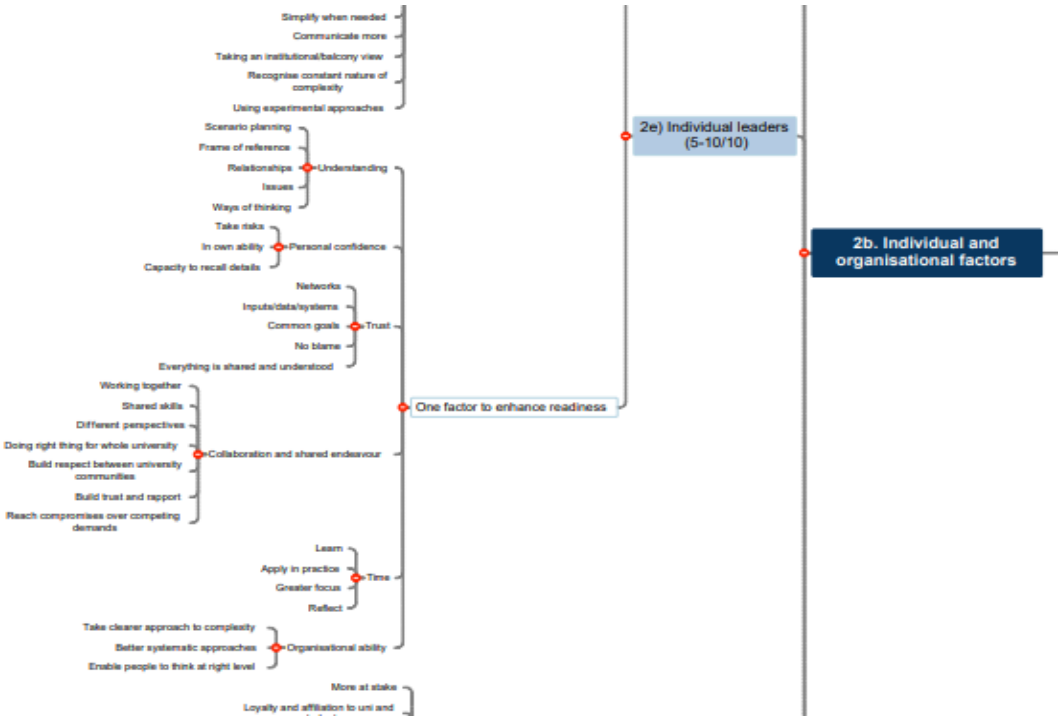
21. Are there any other observations you would like to make about complexity and your University context?

Thanks and close

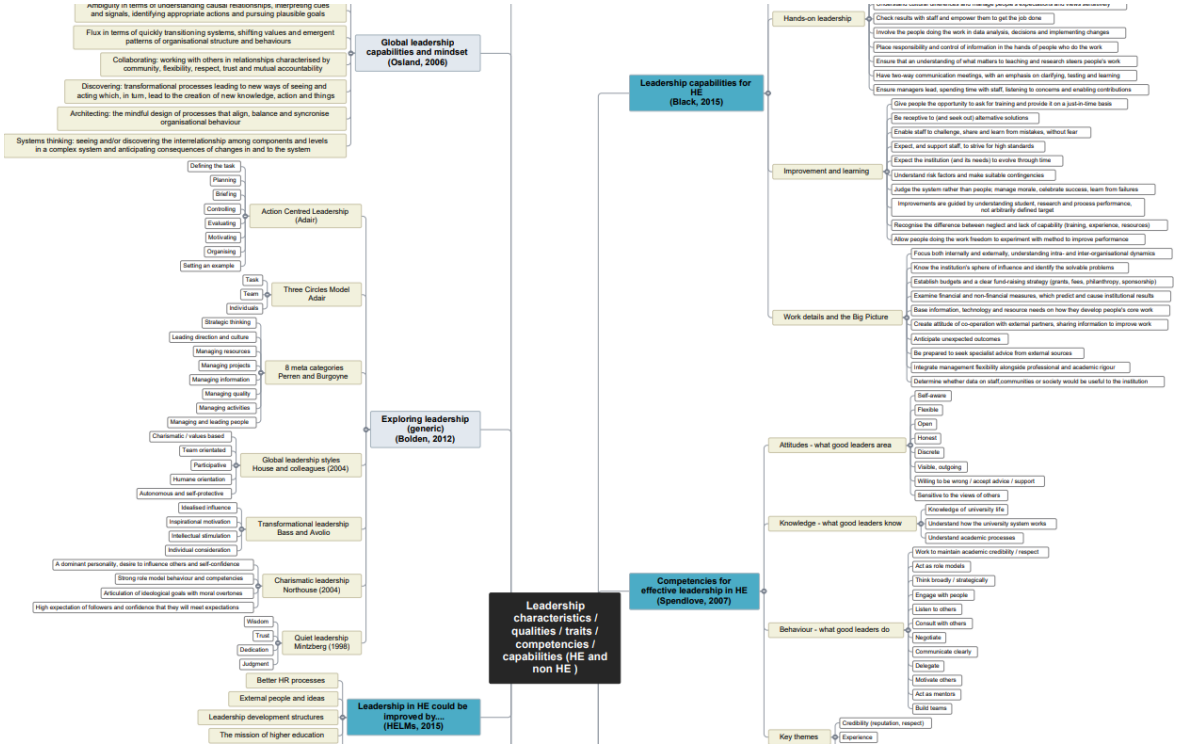
- Reiterate confidentiality etc.
- Reiterate next steps and invite further opportunities to be involved
- Thanks for time and active participation
- Opportunity to send on any further reflections, material, insights etc. if wish to

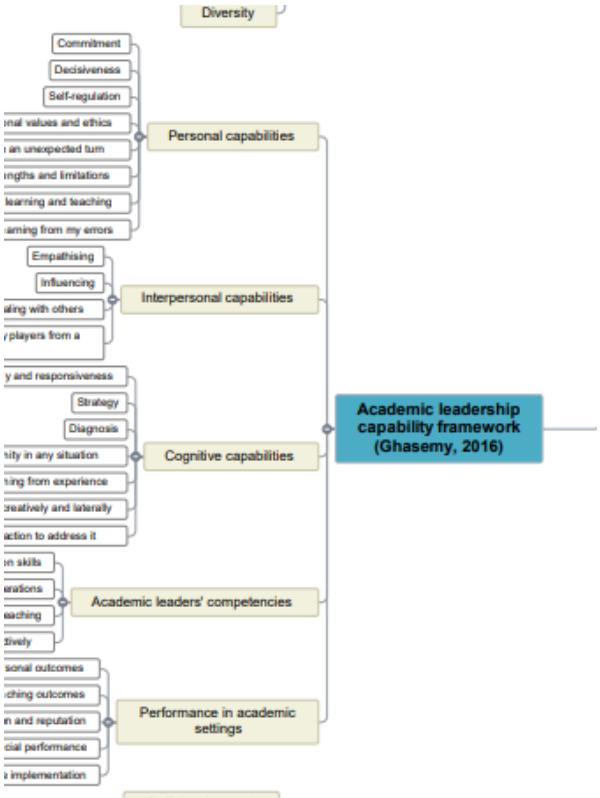
8.1.7 Appendix 7 Extract of mind map produced to consolidate final data





8.1.8 Appendix 8 Extract of mind map produced to consolidate leadership characteristics / qualities / traits / competencies / capabilities (HE and non HE) data





9 List of Figures