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Design Thinking as Pedagogy in Practice

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Abstract
Design Thinking is gaining considerable attention across various domains including education; however its use in Executive Education has not been documented much in the literature to date. By integrating Design Thinking principles and methodologies into the curriculum for Executive learners, we highlight the benefits and outcomes of using Design Thinking as a pedagogical approach. This study explores the effective application of Design Thinking as pedagogy in two modules of an Executive MBA programme at Newcastle University Business School. Through a combination of blended learning materials and experiential, collaborative projects with client organizations, we set out how learners were immersed in a human-centred problem-solving process, developing creativity, empathy, and the ability to identify innovative solutions to complex business challenges. The study presents data gathered from client feedback and learners' reflective assessments, demonstrating the effectiveness and impact of Design Thinking as pedagogy. The integration of Design Thinking principles empowered learners to feel able to lead change initiatives within their organizations in their respective discipline areas effectively. This study contributes to the literature on effective educational approaches in Executive Education, emphasizing the potential of Design Thinking as pedagogy in practice to equip learners with the skills and mindsets necessary for driving organizational innovation and sustainability.

Keywords: Design Thinking, Pedagogy in Practice, Executive Education, Future of Work

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1. Introduction

This study sets out how Design Thinking was effectively employed as pedagogy in practice focusing specifically on its application in two modules within an Executive MBA (EMBA) program at Newcastle University Business School. By integrating Design Thinking principles and methodologies into the curricula of these modules, we shed light on the benefits and outcomes of using Design Thinking as a pedagogical approach, specifically in, and especially well-suited to Executive Education.

Design Thinking as an innovative problem-identification and problem-solving approach has garnered significant attention in recent years across various domains. In a recent study, more than half of the total articles using the word "Design Thinking" have been published since 2010 (Cross, 2023b). Most of the recent growth of publications in Design Thinking has been within the business/management field, but there has also been notable growth in other fields, such as education (Cross, 2023b). A change has also been noted in the meaning of the phrase 'Design Thinking' to mean design intentions, goals, or styles to include how designers think and work, and more recently the use of design approaches in other disciplines such as business and management for example.

Beyond its applications in industry, Design Thinking is starting to be explored as a valuable pedagogical practice in educational settings across various academic disciplines. Several studies have explored the benefits of adopting Design Thinking approaches in education, with a particular focus on enhancing creativity, innovation, and problem-solving skills. Research studies have also discussed the potential of Design Thinking to enhance student engagement and motivation, by offering novel and experiential learning experiences that reflect real-world contexts.

We show how the integration of Design Thinking principles and tools has enabled learners to develop their creativity, empathy, and ability to identify innovative solutions to complex business challenges and worked as a catalyst for driving organizational transformation as evidenced in student assignments. Through a combination of blended learning materials and experiential, collaborative projects with client organizations, learners have been immersed in a human-centred problem-solving process that has enabled them to develop a deep understanding of end-users' needs and generate sustainable and user-centric solutions, whilst developing new ways of thinking and practicing themselves. Design Thinking as a pedagogy in practice engages learners in reimagining organizational processes, structures, and systems. By encouraging learners to challenge assumptions, experiment with prototypes, and embrace a culture of sustainability and continuous improvement, these two modules have empowered them to lead change initiatives within their organizations effectively and, we argue, has contributed to a change in their individual practice.

The study presents data gathered from client organizations' feedback and learners' reflective assessments to demonstrate the effectiveness and impact of Design Thinking as pedagogy in practice in these modules. The paper provides valuable insights into the tangible benefits of Design Thinking as pedagogy in practice, supporting its potential as an innovative and impactful approach to Executive Education.

By highlighting the application of Design Thinking as pedagogy in practice, this study contributes to the growing body of knowledge on effective educational approaches in Executive Education. It underscores the potential of Design Thinking approaches in Executive Education programmes, equipping participants with the necessary skills and mindsets to navigate complex business challenges and drive organizational innovation and sustainability.

Following the introduction, we position this study in the context of the literature on Design Thinking and the value of Design Thinking both in Executive Education and in the context of business organizations. We offer a critique of using a Design Thinking approach in the context of Executive Education before moving to present arguments for its adoption as part of a learner centered pedagogy. We then set out how a design approach was adopted in two modules on an EMBA at Newcastle University Business School, together with our findings regarding its impact. The study concludes with a discussion and some recommendations for further research.

2. Literature review

2.1. The definition and conceptualisation of Design Thinking

Design Thinking (Brown, 2008) has emerged as a valuable approach for innovation and problem-solving in various domains. Brown (2008) also highlights the importance of storytelling in the design process. Rooted in empathy, collaboration, and iterative experimentation, Design Thinking offers a human-centred perspective and approach to complex challenges (Kelley and Kelley, 2013; Plattner et al., 2010). Design Thinking has been associated with fostering creativity, promoting user-centricity, and driving organizational success in an increasing number of contexts (Liedtka, 2018; Dorst and Cross, 2001). Liedtka (2015) argues that Design Thinking is important in reducing cognitive biases that can hinder innovation and could explain how Design Thinking can lead to better outcomes.

2.2. The value of Design Thinking within organizations

According to Buley et al. (2019) the use of design approaches creates a more significant impact on people, practices and platforms, estimating five times the cost savings when compared to organizations not adopting these approaches. Design Thinking is clearly more valuable when used strategically and placed at the core of business activities (De Mozota, 2003) and there is extensive evidence of the positive impact of design on organizations when fully embedded (Buley et al., 2019; Westcott et al., 2013; Sheppard et al., 2018).

Organizations are increasingly recognizing the value of design activities and their impact on various organizational indicators. Design activities encompass a range of processes, including user research, prototyping, and iterative problem-solving, which contribute to the development of innovative products, services, and experiences. These outputs of design activities have been found to positively influence organizational indicators such as customer satisfaction, market performance, and financial outcomes. Furthermore, design interventions have been shown to support the enhancement of the creative confidence and entrepreneurial agency of participants (Carrion-Weiss, 2022).

2.3. The value of Design Thinking in Executive Education

The literature suggests that Design Thinking is a valuable tool for Executive Education, as it enables the development of innovative and user-centred solutions. However, there is a lack of understanding of design processes among educators and there are calls for a more multidisciplinary approach. This is not surprising given the importance and relevance of Design Thinking in modern business and management (Brown and Katz, 2011), the growing recognition of the importance of Executive Education in fostering innovation and creativity and the shifting landscape of global grand challenges such as climate change and Big Data which organizations and their leaders must respond to.

This study offers insights into how Executive Education can better prepare individuals for the challenges of future work. By incorporating Design Thinking into Executive Education, students are empowered to think creatively about how they can identify and solve real-world problems, starting with the needs of their target market and ultimately are better able to meet the needs of society.

Design Thinking has significant potential in Executive Education programs as a valuable approach for developing innovative and adaptive leaders. By incorporating Design Thinking methodologies, Executive Education programs can equip learners with the skills and mindset necessary to tackle complex business challenges. Through collaborative and iterative processes, learners are given an opportunity to develop the knowledge and ability to embrace ambiguity, experiment with multiple solutions, and rapidly prototype ideas to drive innovation. Research by Brown (2008) and Liedtka (2018) supports the effectiveness of Design Thinking in Executive Education, highlighting its potential to enhance problem-solving capabilities, foster creativity, and enable learners to navigate uncertainty in today's dynamic business landscape. This integration of Design Thinking in Executive Education programs holds promise for developing leaders who can drive innovation and adapt to global challenges.

Design Thinking has only recently become a popular topic in the context of curriculum and learning design in Higher Education (HE) (Grabill et al., 2022; Morgan and Jaspersen, 2022) and is as worthy of further study (Bene and McNeilly, 2020) because it has been shown to nurture collaborative ways of working and enables students to develop new perspectives. In addition, Rauth et al. (2010) assert that repetitive cycles of Design Thinking enhance Creative Confidence. However, there is little evidence so far of student involvement in the practice (MacNeill and Beetham, 2022) despite the recognized advantages this is likely to bring and even less in Executive Education.

2.4. The limitations of Design Thinking as pedagogy in practice

Design Thinking is an ill-defined term (Carrion-Weiss et al., 2022; Bailey, 2021) that can be contextualised and framed in different ways. Kolko (2018) identified two different interpretations of Design Thinking – one rooted in designing and one rooted in business. He argued that popularized versions of Design Thinking are based on a very restricted interpretation of real design abilities and downplay or even ignore the skills and expertise that professional designers have. Kimbell (2015) goes further in her nuance of the term, which can be looked at through three different frames: ‘Design Thinking as a cognitive style’, ‘Design Thinking as a general theory of design’, and

'Design Thinking as an organizational resource' - each of these design frames serving a different purpose, namely problem-solving, addressing wicked problems and innovation.

Others, such as Lee (2021) argue that the origins of Design Thinking within a design-as-making paradigm may limit its range of applicability. This is a fundamental criticism of the limits of Design Thinking for addressing systemic organizational, social, or environmental problems, and suggests that it may not be appropriate, sufficiently powerful, or inclusive for addressing such complex issues.

Cross (2023b) however believes that designerly ways of knowing, thinking, and acting can be relevant to tackling a broad range of problems, but should not be regarded as, "a universal issue-resolving cure-all". In the modules in this study, we are clear that we are using Design Thinking technique as pedagogy and are not claiming that a mastery of designerly thinking is a reasonable outcome for the learners.

3. Context of Study

The Executive Master's programme in Business Administration (EMBA) at Newcastle University Business School has been designed for senior leaders who want to balance employment with personal development to shape their organization's future and own career. Learners are all employed full-time at a Senior Management level. The programme introduces learners to key themes in the world of work and explores global challenges faced by organizations today.

Taking a part time blended learning approach, the programme offers a transformational education experience that is underpinned by critical thinking and analysis, and critical reflexivity. Engagement in real world challenges brings a rich learning environment and the opportunity to have immediate impact on individual and organizational performance.

The EMBA programme recognizes that its learners are experienced leaders in a context with significant tacit knowledge. The programme design reflects their embodied experience of both being in the world and making sense of it, learning through and with practice. Practice based learning is central to the programme. Practice in this context is defined as the lived reality of what senior leaders actually do on a day-to-day basis, negotiating choice, decisions, and ambiguity. The centrality of practice in the pedagogy is reflected in the belief shared with Dewey (1966) that learning is not a preparation for life, but learning is life. Learning is immersed in situated contexts, practice, practitioner research; questioning and challenging; enabling reflection and reflexivity in social learning spaces; and, in cohorts which are psychologically safe and developmental.

In preparing learners for an unknown future, the EMBA programme design reflects a paradigm shift that moves away from education done to people, towards processes of co-constructing emergent learning through dialogue and language. It disrupts the traditional dominant discourses relating to Executive Education, CPD (Continuous Professional Development), and training as "solutions to problems". Off the shelf

solutions inevitably represent past ways of knowing and this programme in contrast, enables learners to respond to an emerging unknown future by making collective meaning through language. Relational language and discourse are at the heart of the paradigm shift.

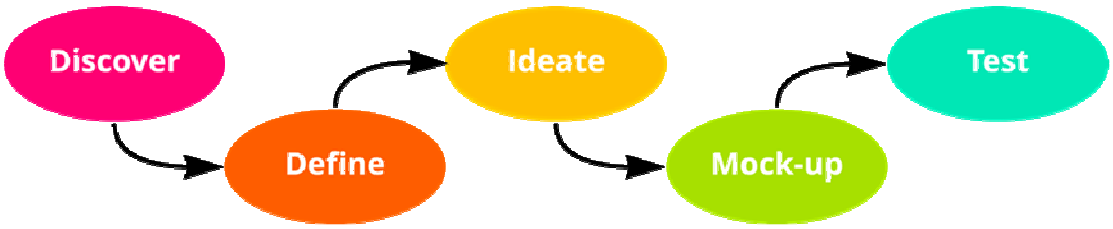
At the core of the pedagogy is the aim to challenge the normative, and to focus on the messiness of things; the complexity of leadership and the intractability of issues, facing up to the wicked problems of society. Design Thinking as pedagogical practice aligns well with this paradigm.

4. Method

Over the years and through the popularization of Design Thinking, expert design thinkers have attempted to capture its process and communicate it to non-practitioners. As a result, there are now numerous Design Thinking models, but some have become more popular than others within the world of enterprise such as the model captured by the global design firm IDEO (IDEO.org, 2015), the IBM Design Thinking 'Loop' (IBM, 2021), and the Design Council's 'Double Diamond' (The Design Council, 2023a, The Design Council, 2023b). These three models were shared with the EMBA learners prior to the project to introduce the concept of Design Thinking. Specifically, the accumulation of these frameworks was particularly interesting as it allowed the different stages of Design Thinking and their purposes to be conveyed, particularly the navigation between the phases of convergent and divergent thinking and the iterative nature of the process.

To offer a unique point of reference and more effectively communicate the process during the delivery of the activities, aspects of the language and structure of these three models were combined in a model (Figure 1) used in the pedagogical context.

Figure 1: The Design Thinking model used in the pedagogical context



However, it is essential to highlight that the Design Thinking model employed in the pedagogical context is reductionist and limited by academic constraints. This model - as well as the three other Design Thinking models introduced previously (IDEO.org, 2015; IBM, 2021; The Design Council, 2023a; The Design Council, 2023b) - fail to fully capture the non-linear and iterative nature of Design Thinking.

Rapid co-creation activities using Design Thinking have become essential in business as a way to quickly explore, prototype and test new ideas (Gardien et al., 2014) and adapt to the rapidly changing world (Bessant, 2005; Corso and Pellegrini, 2007; Daalhuizen et al., 2019). 'Rapid Design Interventions' (RDI) have evolved as a direct response to this demand from business organizations. RDI are high-paced and intense

workshops delivered according to design principles, tools, and methods by design facilitators (Carrion-Weiss, 2022). RDI can be:

- *Design-driven* and intended to help organizations develop or better products, services, or systems (Verganti, 2009; Knapp et al., 2016; Carrion-Weiss, 2022).
- *Design-led* and intended to create with organizations, an organizational strategy to achieve their potential or preferred future (Simon, 1996; Martin, 2009; The Design Council, 2023b; Carrion-Weiss, 2022)

The RDI delivered in the modules mentioned in this study took a design-driven approach in the form of a mini Design Sprint (Knapp et al., 2016), which proved an effective way to incorporate Design Thinking into pedagogical practice.

RDI were incorporated into two modules; 'Innovation & Enterprise' and 'Sustainability' which take place in the 1st semester of the second year of the EMBA programme and run consecutively. In these blended learning modules, online learning resources are released weekly with things to read, questions to answer and challenges to apply in the workplace. The module and assignments are introduced and put into context, together with the teaching and learning approach on the first in person study block day, and then learners participate in day 1 of the Rapid Design Intervention (RDI), also in person. Days 2 and 3 of the RDI follow two weeks later. On the Innovation & Enterprise module there were two client briefs and two teams of four learners (see Table 1 for the RDI Format). On the Sustainability module, there was one client who provided two briefs for different teams of four learners.

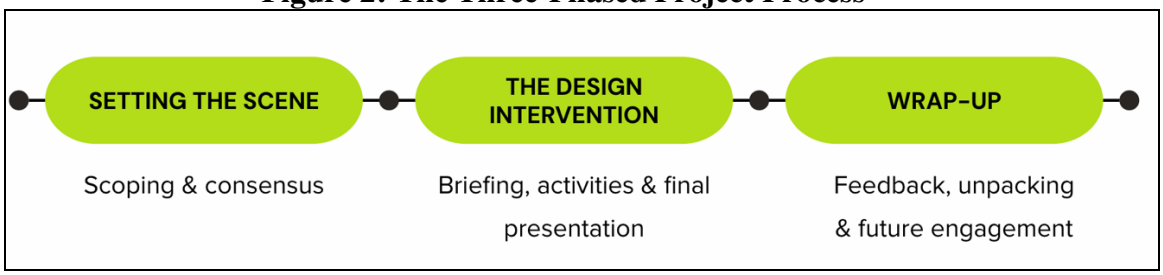
Table 1: RDI Format

Week 1		**Week 3**	
Study day	**RDI Day 1**	**RDI Day 2**	**RDI Day 3**
Innovation & Enterprise module	2 client briefs and 2 teams of 4 learners		
Sustainability module	1 client with 2 briefs and 2 teams of 4 learners		

The development and delivery of the modules in this study were achieved collaboratively and involved a range of stakeholders including an external Design Innovation consultancy, the academic team, external client organizations and professional support staff. Multi-stakeholder collaboration in the development of the offer was deliberate and is one of the key characteristics of a Design Thinking approach. Prior to the commencement of teaching there were a series of meetings to identify, develop and scope potential client projects. These projects served as the focus for the RDI interventions. The objective was to create shared value for the external clients, the learners, the programme and the wider School and University. The academic team saw these modules as an opportunity to integrate a responsible management approach and to deliver material value to the wider civic community. With this in mind, client projects were selected based on their alignment with the United Nations Sustainable Development Goals (United Nations, 2015), as well as a consideration of the clients' potentially limited access to resources such as consultancy support under normal operating conditions. The diversity of client organizations was also a consideration to enhance learning opportunities and the student experience.

Specifically, the delivery of the client projects followed a three-phase process involving all stakeholders (Figure 2).

Figure 2: The Three-Phased Project Process



- **Setting the scene | scoping and consensus**

Two meetings were conducted between the Design Innovation consultancy, the academic team, and each client organization during this phase. The first focused on understanding the client organization, their context, situation, and challenges. Insights from initial research conducted by the Design Innovation consultancy and from the initial meeting were gathered and analysed, which allowed for the identification of key themes and areas of opportunity for the client organization. These were reviewed in a follow-up meeting before agreeing upon the scope of the Rapid Design Intervention. The Design Innovation consultancy then developed a project brief for each client project, which captured the challenge(s) to be addressed by the Rapid Design Intervention.

- **The Rapid Design Intervention "The Sprint" | briefing, activities, and final presentation**

RDI were run over three full days (09:30 – 16:30), split 1+2. The first day of each RDI opened with a briefing session facilitated by the Design Innovation consultancy and delivered by the external client organization. Learners were then split into small teams and taken by the Design Innovation consultancy through a series of activities, from discovering and redefining the brief to developing concepts addressing this brief through ideation, mock-up, and testing. On the third and final day of the RDI, each team presented their work back to the client organization.

- **Wrap-up | feedback, unpacking and future engagement**

The external client organizations gave constructive feedback to learners immediately following the presentation of their work, which contributed towards their learning experience. The week following the RDI, the Design Innovation consultancy, the academic team, the client organization, and professional support staff reviewed the project outcomes and outputs and their possible implementation by the client organization. Potential future activities to sustain and deepen the relationship between the University and the client organization, and the implementation of innovation capability in-house were also discussed during this final phase.

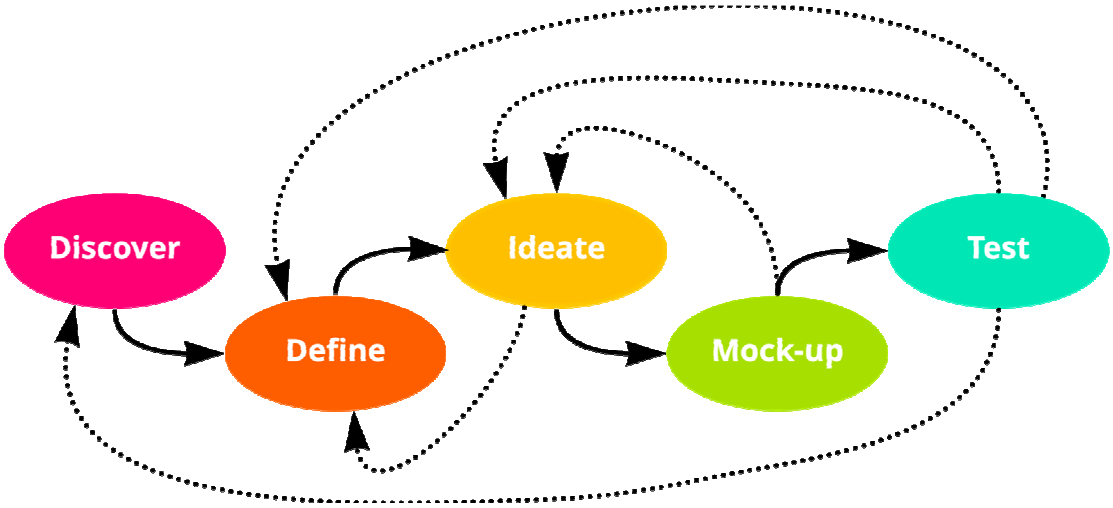
The summative assessment of the modules are (Innovation & Enterprise) a 4000-word essay setting out the identification, planning and potential implementation of an innovation or enterprise opportunity in their own work context and (Sustainability) a 4000-word report identifying a material sustainability issue for an (their) organization

and writing a strategic action plan to address this issue. To achieve this, learners were encouraged to apply Design Thinking to their own organizational context.

However, Design Thinking within an RDI context and with a very limited time frame in an academic context and Design Thinking within an organizational context differ. Indeed, in organizations, developing an opportunity addressing end-users' needs and generating sustainable solutions is more complex and more time consuming. In such instances, the application of the Design Thinking process and iterations of its different stages in a non-linear way can help.

To support the learners in their assessment process and enable the application of Design Thinking within organizational contexts, a second model (Figure 3) was introduced to the learners.

Figure 3: Design Thinking embedded within organizations



5. Discussion

In this section we discuss the initial outcomes of Design Thinking applied within a RDI context, the learning in each of the modules and the resulting shifts in learners' practices. The literature suggests that assessing Design Thinking is challenging, as it involves subjective and complex skills such as creativity, collaboration, and reflection (Kolko, 2015; Cross, 2023a) and is both a process and a mindset. Consequently, we include reflections from 'unpacking' and reflection exercises led by the Design Innovation consultancy at key points in the RDI process. We discuss the emerging themes from each 'unpacking' session, together with feedback and reflections from learners, the academic team and client organizations. This method of reflexive practice helped build team relationships, build creative confidence, and placed emphasis on the learning that has taken place. It also allowed for feedback enabling continuous improvement on the project process.

5.1. First Rapid Design Intervention

At the end of the first day of the first RDI, learners' reflections were focused on the team dynamics. Learners offered valuable insights and support to each other,

identifying in others where they could see personal growth or willingness to try unfamiliar and perhaps less comfortable ways of working, times when other learners helped and supported them, and noticing the manifestation of qualities and skills which they admired in each other. It was an affirming and positive way to end a day which had proved to be challenging for some who were being pushed to try new ways of working, outside their comfort zones.

At the end of the second day of the first RDI, the reality of having to present their work to their client in just a few hours with a short time frame for preparation weighed heavily on the learners and their perceived lack of time to prepare adequately created tension. When reflecting on the process up to this point, it was clear that some learners were enjoying the pressure of having to respond rapidly and iteratively to a client brief. Others expressed a wish for more opportunities to work in such an intense, focused, and concentrated way within their own employer organizations.

However, during the first RDI, all the learners felt that the process was 'uncomfortable' and 'unnatural' to them to some extent. The RDI contrasted with their lived experience of being expected to produce only polished and complete ideas at work. The 'rough and ready' nature of the work they were being asked to present as part of the Rapid Design Intervention was challenging their usual working practices. In addition, some learners struggled to understand and trust the overall process. Their normative approach to market analysis would have consisted of the statistical analysis of extensive datasets, rather than the anecdotal and qualitative approach employed in the RDI which felt rushed and inadequate to them.

On completion of the first RDI, learners reiterated the qualities and skills which they valued in each other and showed each other support and encouragement. Additionally, there was considerable evidence of self-reflection on personal biases and habits, both positive and negative, and how these could manifest in their behaviours both inside and outside of work. One learner highlighted how the opportunity to show up as a 'novice learner' had enabled them to relinquish control and present incomplete work, accepting that outputs were springboards and not the finished product. The RDI environment enabled them to work more creatively in a way that reflected on them as learners, as opposed to having to conform to their own perceptions of what was expected of them as practitioners.

The organisational culture and attitude supporting design and innovation is worthy of further consideration in this context. Many learners remarked on the stark contrast between their RDI experience and the organizational cultures they habitually worked in. Many felt that their own organizations would not be supportive of RDI, but considered how they might introduce some of the features and broader approaches they had experienced despite this.

5.2. Second Rapid Design Intervention

The experience of the first RDI enabled the learners to approach the second one with greater confidence. At the end of the first day of the RDI on the second module (Sustainability), learners reflected on how they had become confused following the Q&A session with the client and a key stakeholder. Although the Q&A session

clarified many points and questions the learners had, the learners struggled to reconcile the two very different perspectives offered by the CEO and the client stakeholder. As a result, the next planned activity in the RDI was adapted to better capture these potentially creative tensions (Sterling et al., 2018) that had been revealed between the client and their stakeholders. The learners were demonstrating their developing ability to think critically about the client organization and the scope of the brief they had been given and were struggling to make sense of material sustainability issues.

Learners became unclear about the authentic purpose of the client organization and the extent of their community-focus, which they felt did not stand up to scrutiny and appeared to lack integrity. At the outset of this RDI, the learners had been split into two groups, with different briefs, but the extent of overlap between briefs was felt to justify joining the groups and moving forward on one brief.

As the learners worked as one team, they unpacked the key issues they had identified. These centred around the fact that the CEO's core values were not clear. Specifically, learners were concerned that there was a lack of perceived authenticity in the client that presented a barrier to business success and was evident in an ill-defined value proposition. Learners felt the client was attempting to portray themselves as tackling all the Sustainable Development Goals (SDGs) (United Nations, 2015). This, the learners felt, demonstrated a lack of understanding of the conflicts and trade-offs inherent in the SDGs.

A full and frank presentation was made to the client about their need to review their core values and purpose, and a clear direct challenge was made to the client's current approach to growing their business. As part of these conversations, learners adapted and moulded the RDI process to create space for this exploration. Having merged two briefs into one, there were periods of deep reflection and exploration of individual positionality in relation to the project.

5.3. Evaluation of Impact

Just as Design Thinking was integrated into pedagogical practice, it also underpinned the approach to its own evaluation. The RDI events were evaluated using a variety of strategies including the assessment of learning outcomes, a learner evaluation survey, formative and summative assessments, client feedback and observation. During the regular periods of planned reflection during the RDI, learners were encouraged to write reflectively about their own development and their new perspectives on their organisational context and share their insights with each other. These written and verbal reflections were used to inform the development of the RDI 'live'. The written submissions of the learners, and their evaluation feedback provided a means to evaluate the impact of the RDI on their development, and on the substantial impact that they had subsequently had on their employer organisations, through the application of learning.

Although many learners either had little or no prior experience of Design Thinking approaches, or felt they were only appropriate in the context of the design of tangible objects, they were pleasantly surprised by how adaptable the approach was and how well it worked for broader corporate issues as well. The clients were also very pleased

with the process and were impressed by how effectively the RDI approach enabled the learners to grasp the key issues facing their organizations. Many substantive recommendations resulting from the RDI were taken forward by the clients following the RDI. Anecdotally, one of the clients subsequently appointed a learner as a Non-Executive Director (NED), a further benefit of external collaboration for both the client and the learner. Recommendations for one of the RDI clients resulted in increased website and LinkedIn activity, increased traction in early adopter client use of proprietary technology, early interest in a new emerging market and access to a new market.

One client commented,

> *"All in all, a hugely valuable exercise that I would recommend to any organization seeking to have a fresh set of eyes looking at them from an external perspective."*

Learners on the Sustainability module described how they had seen a significant shift in their own practice in relation to sustainability including the identification of material issues within their organizations, shifts in practice which reflected their own values and a recognition of power and privilege to bring about change. They were able to articulate this in a variety of ways in relation to themselves as individuals, their organization's strategy, and their role in leading and influencing others.

The learners' summative assessments offered rich evidence of the transformational nature of the module and the impact of the RDI on their learning experience. For example, one learner stated,

> *"…my learning on this module has greatly enhanced my understanding of what it means to be entrepreneurial and what I need to do to enable that within my own team and organization."*

And another commented,

> *"The module and assignment have provided me with plenty of food for thought and no little in the way of actionable learnings."*

In relation to the acquisition of knowledge on core sustainability issues,

> *"My understanding of the breadth and complexity of sustainability as an issue has developed through this module."*

And in turn how this translated to their own practice in relation to leadership in particular,

> *"I see significant opportunity to adopt some of the principles from this module into my own practice. I feel confident this is an issue on which I can lead and influence people to develop wider understanding of sustainability."*

Following both RDI, the learners went on to complete their final research project (dissertation). Further end of module and programme comments demonstrate the impact the experience had,

> *"I gained my first Director position at the same time as undertaking this module. Initially this felt like a conflict of focus, however I now see this as perfect timing to improve my practice and utilize my new platform. Reading about materiality then led me to assess my own role and areas of influence."*

> *"This programme has been nothing short of transformative for me, not just professionally but personally too. There are many very well-conceived and coordinated aspects of this programme that add up to be far greater than the sum of the parts."*

6. Conclusion

This study has explored the application of Design Thinking as a pedagogical approach within the context of an Executive MBA program at Newcastle University Business School. By integrating Design Thinking principles and methodologies into the curriculum, we have highlighted the benefits and outcomes of using Design Thinking as a pedagogy in practice. The findings demonstrate that Design Thinking, when used as a pedagogical approach, can foster creativity, empathy, and the ability to identify innovative solutions to complex business challenges.

The integration of Design Thinking principles and tools has allowed learners to immerse themselves in a human-centred problem-solving process, enabling them to develop a deep understanding of end-users' needs and generate sustainable and user-centric solutions. Moreover, it has empowered them to challenge assumptions, experiment with alternative options, and embrace a culture of sustainability and continuous improvement. These experiences have enabled learners feel equipped to lead change initiatives within their own organizations effectively.

The data gathered from client feedback and learners' reflective assessments provide valuable insights into the tangible benefits of Design Thinking as pedagogy in practice. The evidence supports the potential of Design Thinking as an innovative and impactful approach to Executive Education, enabling participants to navigate complex business challenges and drive organizational innovation and sustainability. This study contributes to the body of research on Design Thinking and education which is largely qualitative, employing case study designs, interviews, and surveys. While this approach offers in-depth insights into the impact of Design Thinking in specific programs, we call for more longitudinal and comparative studies to address the gap in the literature on the effectiveness, transferability, and scalability of Design Thinking pedagogical practice.

It is important to recognize that Design Thinking is an ill-defined term and can be contextualized and framed in different ways. While there are different interpretations and criticisms of Design Thinking, this study emphasizes the use of Design Thinking

as pedagogy rather than claiming mastery of designerly thinking as a reasonable outcome for learners. The Design Thinking process, in its linear and non-iterative form as a pedagogical approach in RDI (see Figure 1), offers a valuable way for learners to develop collaborative ways of working, new perspectives, and problem-solving capabilities. The application of Design Thinking by learners in their organizational contexts, as an iterative and non-linear process (see Figure 3) contributed to helping them lead change within their organizations and in their individual practice.

The study also highlights the learner-centred pedagogy within the EMBA program, which promotes co-constructing emergent learning through dialogue and language. It challenges traditional dominant discourses and embraces a paradigm shift that focuses on responsible leadership and leaderful practice. The program design recognizes the importance of practice-based learning, reflection, and reflexivity, creating a rich learning environment for experienced leaders.

The future of work is currently undergoing substantial transformation, driven by technology, and shifting societal demands. In response to these challenges and opportunities, Executive Education is a vital instrument for preparing leaders to navigate the dynamic business landscape. Nonetheless, traditional pedagogical practices are likely to be insufficient in developing what leaders need to address the complexities of modern-day organizational challenges. Integrating design thinking as a pedagogy in practice holds promise, offering valuable skills such as adaptability, empathy, and innovative problem-solving abilities. By fostering a creative mindset and providing effective tools and techniques, Design Thinking can contribute to transformative change in the workplace. Emphasizing the need for lifelong learning, the integration of Design Thinking as pedagogy in practice in executive education may play a pivotal role in shaping leaders capable of driving success amidst uncertainty within a rapidly evolving global arena.

Overall, this study contributes to the growing body of knowledge on effective educational approaches in Executive Education. It underscores the potential of Design Thinking as a pedagogical approach in Executive Education programs, equipping participants with the necessary skills and mindsets to tackle complex business challenges, drive innovation, and adapt to changing market conditions. By integrating Design Thinking into the curriculum, the EMBA program at Newcastle University Business School demonstrates its commitment to providing a transformative and impactful education experience for senior leaders.

We recommend further research into the potential impacts of integrating a Design Thinking approach into Executive Education specifically the value of the combined application of Design Thinking within the pedagogical context and Design Thinking within the organizational context. The integration of Design Thinking mentoring sessions would facilitate and support learners through their navigation and application of Design Thinking within their organizational contexts. Further longitudinal date to evaluate the impact of this approach over time is recommended, both to assess developmental impact on the learners, and the ongoing value of this impact on their employing organisations.

A Design Thinking approach offers a valuable means of developing leaders whilst simultaneously tackling global challenges such as sustainability and delivering impact beyond the institution. As a tool which involves working with a range of stakeholders, the authors also suggest an exploration of the potential of design thinking at the interface between teaching and engagement activities.

7. References

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