

# Design Thinking Within Entrepreneurship Education: Different Perspectives and Common Themes in the Literature



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**Abstract** Design thinking (DT) has been claimed to hold promise for bringing education into the twenty-first century. Many entrepreneurship educators are increasingly integrating DT into their entrepreneurship curricula. Thus, there has been a growing interest among entrepreneurial educators to understand the value and the conceptual interface of DT within entrepreneurship education (EE). The purpose of this chapter, therefore, is to illustrate the interface of DT within EE and its current discussion within the literature. This explorative literature review follows an interpretive approach to discuss general theoretical parallels and common core principles of DT in EE at different levels. The findings of this literature review contribute to a more profound perspective on the conceptual clarity of DT in EE.

**Keywords** Entrepreneurship education · Design thinking · Literature review · Entrepreneurial education

## 1 Introduction

Entrepreneurship education (EE) is considered to be one of the pioneering fields in the implementation of design thinking (DT) (Sarooghi et al., 2019). Over the last years, DT has emerged in a variety of educational contexts of entrepreneurship, including in the context of the EntreComp framework (Bacigalupo et al., 2020; Campbell, 2019). Recent developments have influenced the increasing use of DT in

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EE curricula, as Bacigalupo et al. (2020) describe DT as one of the three most important entrepreneurial methods. Recent research has demonstrated the wide application of DT in entrepreneurial contexts (Klenner et al., 2021) as well as among entrepreneurship educators (Kremel & Wetter Edman, 2019) and confirmed that DT is integrated into more than half of the entrepreneurship curricula (54%) (Sarooghi et al., 2019).

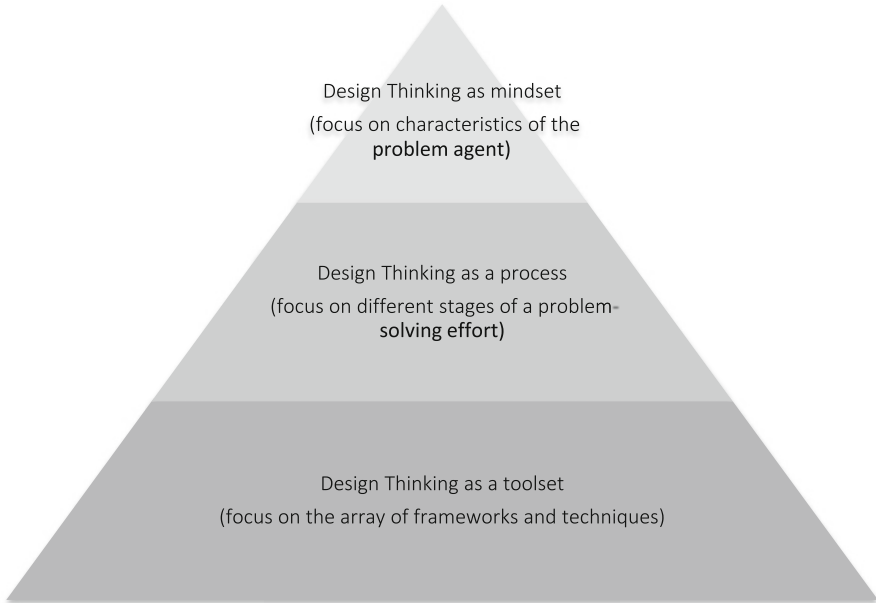
Despite the wide popularity and application that design thinking has gained in EE practice (Neck & Greene, 2011), the interface of DT within EE has not been discussed sufficiently in academia (Huber & Sailer, 2016; von Kortzfleisch et al., 2013) and DT has been overlooked by EE research. Moreover, especially, entrepreneurship educators have been characterised as lacking criticality (Fayolle & Gailly, 2008; Fayolle & Gailly, 2015) and jumping into new methods for teaching without questioning (Blenker et al., 2019). Thus, there appears to be currently no consensus on the level at which the interface of DT/EE occurs. While some present DT as an entrepreneurial method that can be used as a toolbox for entrepreneurship educators, others argue for using DT to design entrepreneurship education (EE) in general (Huq & Gilbert, 2017; Nielsen & Stovang, 2015). Design-based curricula and DT are one way to address the growing need for contemporary higher education. Indeed, future generations need to be equipped with DT skills to face uncertainties and address problems with a creative lens (Goldsby et al., 2017; Sarooghi et al., 2019). Therefore, there is a clear need for increased clarity across the range of entrepreneurial methods in order to improve existing EE practices (Mansoori & Lackeus, 2020). Crucially, the application of DT in EE is under-researched, and the underlying interface has not been constructed yet. Thus, the synthesis of common themes and unifying logic and the investigation of common theoretical groundings help stimulate theoretical sensitivity towards the concept of DT in the EE context.

The purpose of this chapter, therefore, is to illustrate the interface of DT within EE and its current discussion within the literature. This explorative literature review employs an interpretive approach to discuss the general theoretical parallels and common core principles of DT in EE at different levels. The review contributes to a more profound perspective contributing to the conceptual clarity of the DT/EE nexus. Its findings provide new insights into whether DT is just temporary or whether the integration of DT within EE is substantial. Finally, this chapter helps bring convergence to a common understanding of the value of DT for EE in order to inform future EE practices.

## **2 A Review of Design Thinking as It Pertains to Education**

### ***2.1 Design Thinking Within the Academic Discussion***

Although the term “design thinking” did not exist yet, researchers have been investigating the designer’s thinking process for the past 50 years (Boland & Collopy, 2004; Henriksen & Richardson, 2017; Simon, 1996). Today, a myriad of



**Fig. 1** Design thinking definitions structured in three categories derived from Brenner et al. (2016; Sarooghi et al., 2019)

definitions of the term “design thinking” proliferate in academic and practitioner-oriented literature and demonstrate the different perspectives taken on DT. Recent contributions have been made to explore and structure DT discourses. As an example, Johansson-Sköldberg et al. (2013) differentiate between three different perspectives: DT as a way of working with innovation (Brown, 2008), DT as a necessary skill that managers should adapt to solve organisational problems (Huq & Gilbert, 2017) and DT as part of the management theory (Boland & Collopy, 2004). In the same vein, Hassi and Laakso (2011) describe that DT within the managerial realm consists of three elements: a set of practices, a cognitive approach and a mindset. From a managerial perspective, Dell’Era et al. (2020) have recently identified four different interpretations of the DT paradigm characterised by different practices: creative problem-solving, sprint execution, creative confidence and innovation of meaning. Within the EE context, Sarooghi et al. in 2019 (Sarooghi et al., 2019) categorised the different definitions of DT into three different categories based on Brenner et al. (2016): mindset, process and tools (see Fig. 1). This logic of a pedagogical pyramid reflects the different stages of DT within EE (Huber & Sailer, 2016).

Figure 1 demonstrates the significant diversity in the definitions of DT. This diversity reflects the richness of the concept and the different perspectives on it. Within this paper, Sarooghi et al.’s (2019) classification of DT is further applied. Although DT is a fragmented term with very different complex definitions, common themes emerge. In particular, DT has been conceptualised through themes such as

wicked problems/problem-solving, empathy and human-centredness, tangibility and prototyping and interdisciplinary and multidisciplinary teams.

The first theme characterising DT is “wicked problems/problem-solving”. Because DT is often treated as a problem-solving approach, the idea of problems being “wicked” is essential to the concept of DT (Neck & Greene, 2011). This idea emphasises problem understanding as an important part in the design process—by that it is essential to structure, shape and understand the problem first instead of just identifying it and then to work towards the solution (Christensen, 2009; Neck & Greene, 2011). Rittel and Weber (1973) suggest that wicked problems are endless in a way that there is never a definite end to the problem-solving process, and as there is no definite solution to a problem, the solution can be only good or bad, or better or worse, but never correct. The idea of wicked problems comes with a special approach or “attitude” towards the problem-solving process (Boland & Collopy, 2004).

Thus, one element of DT is the approach to solving problems in a “human-centred” way, as illustrated in the next section. In contrast to a technology- or organisation-oriented approach, DT puts the human (needs) at the centre of the innovative problem-solving process (Kimbell, 2012). By putting people first, design thinkers show the ability of empathy to draw upon people’s real experiences and better understand their physical and emotional needs. Empathic design thinkers can, therefore, perceive the world from different perspectives and identify needs that inspire innovation (Blenker et al., 2019; Kimbell, 2012). Therefore, empathy is a centrepiece in defining DT as a human-centred approach to problem-solving (Blenker et al., 2019). In order to solve problems in a human-centred way, the next theme, “prototyping and tangibility”, plays an essential role in getting useful user feedback—and beyond.

DT embraces prototyping to develop and test an idea and obtain useful user feedback as stated by Brown (Brown, 2008): “The goal of prototyping isn’t to finish. It is to learn about the strengths and weaknesses of the idea and to identify new directions that further prototypes might take” (Brown, 2008, p.87). Prototyping, at its core, is about transferring ideas and explorations from a conceptual world towards a physical prototype. By this, prototyping is also a way to build a coherent convergence of different ideas, making it more tangible not only to the potential user but also internally to the project team itself (Brown, 2008). Regarding the fact that DT is often used to solve “wicked problems”, prototyping is a fitting method to approach a solution. “Wicked problems demand an opportunity-driven approach: they require making decisions, doing experiments, launching pilot programmes, testing prototypes, and so on” (Christensen, 2009, p. 20). Furthermore, the prototype (which can be a physical object but does not have to) can be seen as a constitution of a shared language and a way to communicate the idea (Brown, 2008) as well as inspire some further ideation (Sarasvathy et al., 2008). As described in the process models associated with DT, prototyping is included in most of the DT processes (Boland & Collopy, 2004; Brown, 2008). However, the idea of prototyping within design testing goes further than just “testing” and making things tangible. Prototyping in DT is not only used as a method, tool or step in the process; it also can be seen as an

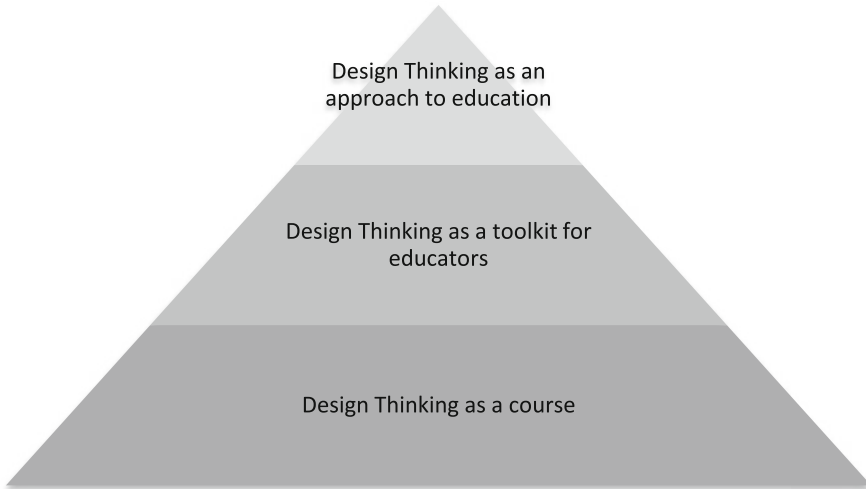
attitude or mentality within this context. In addition, Kelley's definition of prototyping as "thinking with your hands" characterises prototyping as a thinking mode.

DT embraces the doing and fosters an attitude of experimentation (Brown, 2008; Liedtka & Ogilvie, 2011), especially in multidisciplinary teams. Thus, the next theme has been identified as "interdisciplinarity and multidisciplinary teams" as an important element of DT. Building upon the idea of DT to be human-centred, the use of different perspectives is also represented in the ideal DT team, which is multidisciplinary, highly collaborative and not hierarchically structured (Brown, 2008). By this, diverse perspectives are represented internally by a project team with different backgrounds—and beyond by also including specialists' views and outside perspectives (Huq & Gilbert, 2017). This is a recurring theme in the DT literature (Johansson-Sköldberg et al., 2013) especially if DT is presented as a method for innovation (Brown, 2008). The last theme introduced in this paper focuses on "curiosity and creative confidence" as an important element of DT. Creativity plays a key role in the design process (Neck & Greene, 2011; Owen, 2007). In the popular literature, DT is often misunderstood in a way that any creative activity is labelled as DT (Henriksen & Richardson, 2017). Nevertheless, an optimistic, proactive and curious approach to creativity is a key principle of DT in a way that DT is driven by the desire to change things for the better (Henriksen & Richardson, 2017; Owen, 2007). Along with this comes the idea of "creative confidence"; in order to approach "wicked problems", design thinkers are required to be confident and optimistic about their own ability for creative problem-solving (Christensen, 2009). This section summarises the concept of DT in general, while the next section sheds further light on DT within the educational context.

## ***2.2 Design Thinking Within an Educational Context***

The world is evolving at a faster pace, and education must evolve with it. However, some argue that traditional ways of learning are unable to keep the pace. This demands a new culture of learning that focuses on learning within the world as opposed to teaching about the world. One way to create this culture is to integrate DT into education, as some believe that DT holds major promise in bringing education into the twenty-first century (Melles et al., 2012).

Figure 2 illustrates the different perspectives on a design thinking integration within education. In a similar logic as the design thinking definitions (toolkit/process/mindset) as Fig. 1 and inspired by Huber and Sailer (2016), it illustrates DT within the educational context—as a toolkit for educators, as a course or as a teaching approach. Thus, it reflects the incorporation of DT in education as described by Melles et al., as a course logic, as a course unit, as a seminar or, at its highest level, as an approach to education general philosophy (Melles et al., 2012). Additionally, DT education can be delivered in a design education context (design schools) and other schools, which aim to integrate DT in a non-design context.



**Fig. 2** Different perspectives/levels of DT integration in education, own figure based on (Melles et al., 2012)

While DT can provide a relevant toolkit of methods for educators, it can also aim for a whole new perspective on education. For example, researchers have proposed that the application of DT into business education can address issues and criticisms in business education. The current system of business schools has been criticised because of what is taught, how and to whom it is taught (Huq & Gilbert, 2017). This is not only relevant for business education, as application of DT in the educational context has already spread through many different disciplines (Beaird et al., 2018).

On its basic level, DT tools and methods can be applied in education such as integrating project work using the DT process and methodology and applying DT principles such as prototyping, testing and working in interdisciplinary teams. By this, DT in education will help to “design learning that enables students to work in multidisciplinary teams and enact positive, design-led change in the world” (Rauth et al., 2010, p. 2). Moreover, Rauth et al. (2010) reflected on DT as a learning model and “as a metadisciplinary concept and education model” (Rauth et al., 2010, p.1). Above this, DT can be perceived as a creative approach to education that promotes the idea of teachers as designers.

Besides structuring the level of DT integration in education (Fig. 2), DT education itself can be classified around the following themes and aspects: first, **iteration and learning cycles** are one important theme in DT education. The idea of iterative cycles switching between divergent and convergent thinking modes is key to DT and thus “Design Thinking education, therefore, addresses dealing with these cycles from the beginning on: The procedure of learning and the creation of knowledge within design thinking education are based on highly iterative proceedings” (Rauth et al., 2010, p.2). In this case, Rauth et al. (2010) see an analogy between the iterative

character of DT and the experiential learning theory (and its famous learning cycle) by Kolb. Along with this theme comes the idea of **prototyping** as a new way of thinking about education. Unlike common educational practices, where the “thinking about things” and the “doing things” are separate, the prototyping mindset of DT connects both (Henriksen & Richardson, 2017). Furthermore, learning in the DT literature is often described as learning by doing. Therefore, **project work and experiential learning** play an integral role in DT education. The idea of learning by doing was first introduced by Dewey (1938) as a theory of education, within which learning should be practical rather than theoretical. Rooted in this, educational research has developed this idea into a pedagogical approach called “project-based learning”. The design pedagogy is often based on the so-called studio learning, which basically describes that the students work on concrete projects and by that learn design principles (such as space, form and colour) in an integrated way “on the go” (Welsh & Dehler, 2013). These principles are consistent with the ideas of project-based learning and can be considered as a learner-centred pedagogy that proposes a collaborative, hands-on and active exploration of (real-world) project-based challenges (Gordon, 2013). Project-based learning is more than just the inclusion of a project—the project is a central part of the curriculum, though. This student-centred approach allows students to decide on their path to work on the project, where the project will lead them and what the outcome might be—while the role of the teacher is rather supportive (Gordon, 2013). Although most DT curricula include a mixture of readings and project work, the work on the projects is very important (Melles et al., 2012). In the literature, this is also known as authentic learning, when students are asked to apply the curricular knowledge to an issue related to everyday life (Reeves et al., 2002). Simon (1996) describes that DT education focuses on the use of artificial, tangible things such as boundary objects and prototyping (Welsh & Dehler, 2013).

The role of the student in education based on DT principles is active rather than passive. Students become creators of their own knowledge instead of recipients—in fact, learning in DT is a **student-driven process** (Welsh & Dehler, 2013). By applying DT principles, the students develop their own action paths as part of their learning experience. Due to the nature of design problems, the solution of a problem is not yet given, and therefore the students learn to find the solution by themselves. By this “contestability of any and all ideas (. . .) students become actively engaged in the construction knowledge” (Welsh & Dehler, 2013). This experience of learning based on DT principles enables students to move from passive recipients to critical and reflective individuals. Along with this comes the **collaborative role of the educator**. DT is a non-hierarchical discipline, and this principle of collaboration affects the role of educators in DT education. Therefore, educators “serve as collaborators, co-learners, and mentors rather than authoritative figures dispensing factual information” (Welsh & Dehler, 2013, p. 778). DT employs the ideas of critical pedagogy, where power in the classroom is decentralised. Welsh and Dehler (2013) described that in a student-driven course design, facilitators conduct “desk reviews” when difficulties arise. In these desk reviews, the teaching team approaches the group to review their progress and give guidelines rather than judgement.

Generally, the role of the teacher in this context can be described as rather passive mentoring than actively advising as it is one important point of design education to let the students maintain ownership of their idea/project.

Furthermore, in DT as a discipline, a **studio-like learning environment** or learning space plays a crucial role in design education. Designers and design thinkers often work in design studios that are typically open, highly collaborative spaces with different sources of inspiration. The room setup is a crucial part of a successful DT project, and the space should represent the principles of DT (collaboration, prototyping and creativity). The importance of a studio setup that meets students' needs is also evident in educational settings. The creation of the physical environment highlights the similarities and common themes between DT and experiential learning (Huber & Sailer, 2016; Welsh & Dehler, 2013). This section offers an overview of DT within an educational context, while the perspective of DT in EE is further illuminated in the following section.

### 3 Perspectives and Themes on the DT/EE Nexus

Since this chapter focuses on further conceptualising the interface of DT and EE, this section examines the existing literature in this field and gives an overview of the recurring themes. Several developments have resulted in a greater focus on conceptual links between DT and EE, as well as on entrepreneurship practice, entrepreneurship research and entrepreneurship pedagogy (Sarooghi et al., 2019). Research conducted on the interface of creativity and business illustrated analogue characteristics of designers and entrepreneurs such as experiential learning, mindsets and non-linearity (Penaluna & Penaluna, 2009). Recently, researchers have described the entrepreneurial ways of designing and designerly ways of entrepreneuring (Klenner et al., 2021). Developments such as the effectuation theory by Sarasvathy (2001), which heavily uses DT principles in its study of the entrepreneurial decision logic, as well as the lean startup approach, have contributed to the increasing use of a DT philosophy in EE curricula (Sarooghi et al., 2019). Dorst (2011) refers back to the terms “entrepreneuring” and “effectuation” when describing the process of creating new frames for problem-solving in design.

Clearly, the concept of DT shows parallels to the current debate on how to design and teach EE (Huber & Sailer, 2016). Despite the wide popularity and application of DT in the entrepreneurship practice, the interface of entrepreneurship and DT has not been discussed sufficiently in academia (von Kortzfleisch et al., 2013). While this research gap still exists, there are some publications contributing to the EE and DT nexus. These publications either present a conceptual model for the interface (Nielsen & Stovang, 2015; Sarooghi et al., 2019; von Kortzfleisch et al., 2013), compare different entrepreneurial methods (Mansoori & Lackeus, 2020) or focus on describing a case study of the utilisation of DT in entrepreneurship course design (Gordon, 2013; Nielsen & Stovang, 2015). In order to bridge this research gap, common



themes and a conceptualisation of the interface are illustrated in the following section.

## 4 Conceptualisation: Levels of Interface

### 4.1 *Conceptual Interface: Common Themes of Entrepreneurship Education and DT*

The conceptual nexus of both shows parallels in their core ideas and thinking modes of being human/problem centred, iterative and value creation oriented. Indeed, the boundaries between the disciplines are blurring as design is shifting towards a self-understanding beyond the pure design context and entrepreneurship transforming from a narrow management perspective towards a more holistic self-conception. Entrepreneurs can be seen as the designers of organisations who also design the world we live in (Sarasvathy et al., 2008). Thus, Mansoori describes the new perspective on entrepreneurship (as a domain that is “intentional, systematic, strategic and guided” (Mansoori & Lackéus, 2020, p.21)) as a perspective that has great commonalities with design science. In this section, the conceptual nexus and common themes identified within the literature are illustrated.

First of all, Sarasvathy and Vankataram (2011) described the scientific method as an analogue to the entrepreneurial method. The same has been applied to design attitude vs. scientific attitude (Owen, 2007). This way of thinking embraces the **divergent thinking mode** which is further expounded by Boland and Collopy (2004) who distinguish between a design and a decision attitude. While the decision attitude perceives problems as stable, the design attitude approaches a problem with the creation of new opportunities (Boland & Collopy, 2004; Huq & Gilbert, 2017). Further, Sarasvathy et al. “posit effectuation as an entrepreneurial logic for designing artifacts (...)” (Sarasvathy et al., 2008, p. 331). When comparing the effectuation logic (Sarasvathy, 2001) with the DT process model of the Double Diamond (Design Council, 2005), both concepts endorse the divergent thinking mode in the context of making opportunities by creative discovery (Sarasvathy et al., 2008).

Second, DT and EE show a high conceptual overlap as both emphasise **value-orientation and creation with limited resources**. This aspect has been described best by Simon saying “everyone designs who devises courses of action aimed at changing existing situations into preferred ones” (Mansoori & Lackéus, 2020, p. 111). This emphasis on value creation is represented in EE by the understanding of entrepreneurial action as the making of a positive difference (Sarasvathy & Venkataraman, 2011). Both concepts embrace value creation for other stakeholders (Johansson-Sköldberg et al., 2013; Mansoori & Lackéus, 2020; Sarasvathy et al., 2008). Similar to designers, entrepreneurs also use certain methodologies to solve complex problems and realise their aspired ideas in a process of world-making (Klenner et al., 2021; Mansoori & Lackéus, 2020). Further, both disciplines mention

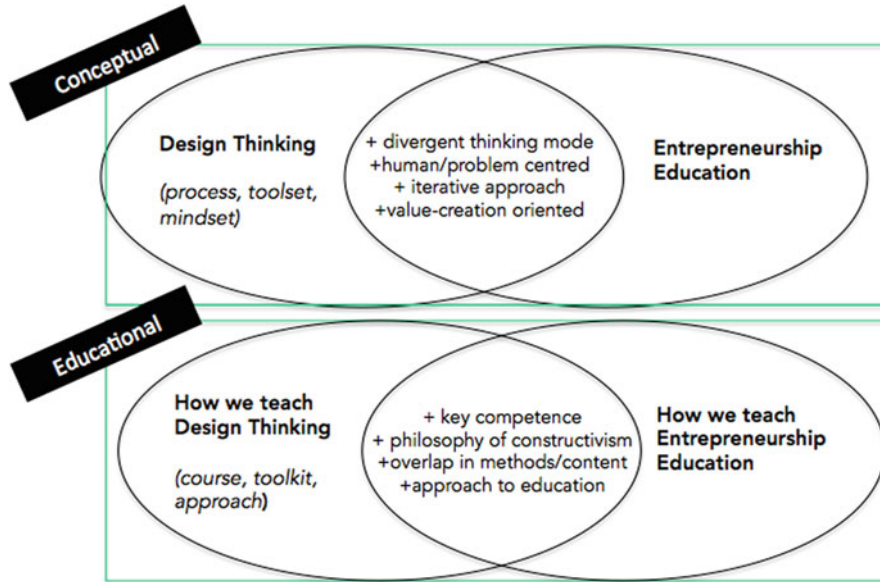


Fig. 3 Conceptualisation of the interface and core principles

the innovation and value creation process within the context of limited resources and an uncertain environment. Both in DT and in EE, problems are “wicked”, and therefore, the **iterative problem-solving** process relies on the subjective facilitation of individuals’ decisions (Klenner et al., 2021; Sarasvathy et al., 2008). Iteration is a core principle of all formalised DT process models (Brown, 2008; Design Council, 2005; Neck & Greene, 2011). Accordingly, Mansoori compares the nature of the entrepreneurial problem space with design: “As such, akin to domains such as design, entrepreneurship should be guided by rules, principles, heuristics and methods that are distinct and suitable for solving structured and ill-structured aspects” (Mansoori & Lackéus, 2020, p. 24) (Fig. 3).

## 4.2 Educational Interface of DT and EE

The interface between DT and EE shows a high level of overlap regarding their general educational philosophy, their similar understanding as a key competence and their actual teaching methods and pedagogical approach regarding the role of educators and students. First, reflecting on the evolution of both, DT and EE both have shifted from a rather specialist view towards a more generic understanding as a **key competence** that is relevant to everyone. While DT moved the idea of designerly thinking towards describing a way of thinking and doing beyond the design context (Henriksen & Richardson, 2017; Johansson-Sköldberg et al., 2013),

EE shifted its view from narrow to a wider and more holistic understanding as a way of thinking (Sarasvathy & Venkataraman, 2011). This shifting might be because both claim to transfer key competencies for the twenty-first-century learner such as the ability to solve open and complex problems in a creative and innovative way. Through this, both disciplines became relevant to “everyone”, and today both argue to be important beyond their traditional field of practice. DT has emancipated and freed the designerly way of thinking from being only relevant to designers, while EE is in the middle of a process of teaching entrepreneurship across disciplines (Sarasvathy & Venkataraman, 2011). At this point, EE and DT have a unified mission and can play an integral role in a possible new way of understanding education in general. Further, regarding the underlying **educational philosophies**, DT and EE both build upon the influences of constructivism such as experiential learning, critical pedagogy and active learning (Dewey, 1938; Gabriellson et al., 2020; Neck & Greene, 2011). Concerning the actual use of teaching methods, one of the recurring themes is the focus on project-based learning. Most DT curricula make use of project work on real-life cases (Henriksen & Richardson, 2017), and the engagement in real-life opportunities is also shown in EE (Pittaway & Edwards, 2012). Both concepts demonstrate a high level of “doing” in the experience of education by teaching the subject through the creation of experiences in practice (Neck & Greene, 2011). Moreover, both EE and DT embrace the use of continuous and iterative learning cycles by making feedback from others an integral part of the learning process (Rauth et al., 2010).

## 5 Conclusion and Further Research

This chapter questions whether the integration of DT within EE is temporary or a substantial contribution to pedagogy. It is no coincidence that EE “has been one of the pioneering fields in the implementation of design thinking” (Sarooghi et al., 2019). The literature review has illustrated substantial common themes and core principles in both conceptual and educational dimensions. This reinforces the fit of DT as a possible permanent addition to EE (Sarooghi et al., 2019). An investigation of DT has provided more theoretical sensitivity around the concept by illuminating three different perspectives: tool, process or mindset view (Sarooghi et al., 2019). This richness of the concept is also represented in education at the level of the course, toolkit and educational approach.

Regarding the conceptual and educational nexus, this paper has identified common principles at the DT/EE nexus: iterative learning cycles (Rauth et al., 2010), project-based learning in the sense of experiential learning (Linton & Klinton, 2019) and learning as a student-driven process with the teacher in the role of a collaborator (Neck & Greene, 2011). While DT and EE have similar core values of educating discovery processes and creation of innovation, the boundaries between both even blur more recently, due to the conceptual shift of EE from venture creation towards a value creation focus. The current state of the art is divided into two modes:

discussing conceptual models for the interface (Nielsen & Stovang, 2015; Sarooghi et al., 2019; von Kortzfleisch et al., 2013) or describing case studies of the utilisation of DT in entrepreneurship course design (Linton & Klinton, 2019; Nielsen & Stovang, 2015). Single case studies and studies of exemplary course design are the most numerous (Huber & Sailer, 2016; Kremel & Wetter Edman, 2019; Linton & Klinton, 2019). While it is apparent that there have been valuable contributions to the field discussing DT within EE from different perspectives, this paper contributes to the recent debate by illustrating a more profound perspective on the EE/DT nexus and providing further insights for conceptual clarity.

These findings call for more research as current research focuses on analysing single case studies without a curricular or comparative analysis. Most case studies also provide relevant insights for practitioners on how to include DT in the EE curriculum, but their conclusions often rely on single examples and have not been tested in a wider context (Huber & Sailer, 2016; Linton & Klinton, 2019; Nielsen & Stovang, 2015). Also, there is a need for an understanding of the current implementation of DT in EE practice (Sarooghi et al., 2019). Recent research has answered the question of whether entrepreneurship educators are integrating DT into their curricula. Also, recent research has applied a survey-based approach in order to demonstrate the application of DT among entrepreneurship educators, and the current state proves that entrepreneurship educators are indeed using DT frameworks (Kremel & Wetter Edman, 2019; Sarooghi et al., 2019). However, as this review has shown, the existing variety of DT definitions and myriad perspectives calls for a more detailed and deeper examination of DT integration. Therefore, the questions need to be raised on how, why and from which perspective (tool, process, mindset/course, toolset, approach) entrepreneurship educators make use of DT. Further research is needed to bring convergence to a common understanding of the value of DT for EE.

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