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# Integrating design thinking into social work education: a scoping review of practices and identification of opportunities for curriculum innovation

Sonia Martin[a], Rachel Goff[b] and Patrick O'Keeffe[b]

[a]School of Allied Health, Australian Catholic University, Australia; [b]Social and Global Studies Centre, RMIT University, Melbourne, Victoria, Australia

**ABSTRACT**

The contemporary context of Australian social work education creates opportunities for social work educators to reimagine curriculum design and delivery. We propose that design thinking offers one means of broadening approaches to social work teaching in creative and innovative ways. With a focus on the application of knowledge to industry 'problems' and 'person-centered' solutions, design thinking may complement the social justice values of social work and help advance the social change mandate of the profession. In educational settings, it may encourage students to engage more actively in processes of knowledge translation and in the identification of person-centered solutions to social problems. Yet there is very little literature on the application of design thinking in the social sciences and even less specifically relevant to teaching social work. Our paper reports on an international scoping review ($n = 73$) of existing approaches to teaching design thinking in higher education settings and considers their potential application to creative and innovative social work curriculum. This research contributes to understandings of the potential of design thinking for critical social work education in a changing higher education context.

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## Introduction and background

The contemporary context of Australian social work education is different from previous decades. Public universities, where most accredited social work programs are delivered in Australia, have radically transformed since the late-1980s. As successive governments increasingly adopted neoliberal ideas for public policy arrangements, competitive markets and limited government intervention were increasingly accepted as appropriate mechanisms for the distribution of goods and services (Engels & Martin, 2017). This included higher education and the human services sector, where much social work takes place. Both are increasingly required to run like businesses. The types of social problems social workers are required to engage has also evolved. Environmental problems, for example, are now more recognized—and widespread—than previously (e.g.

**CONTACT** Patrick O'Keeffe patrick.okeeffe@rmit.edu.au Social and Global Studies Centre, RMIT University, GPO Box 2476, Melbourne, Victoria 3001, Australia

Papadopoulos & Hegarty, 2017), and family violence and mental health are now more widely recognized as areas requiring policy and practice intervention (e.g. State of Victoria, 2016, 2021). This context creates opportunities for imagining different social work responses in the contemporary period, setting the background for our exploration of the potential of design thinking to advance social work education. We explore this context briefly below before introducing the study.

## Social work and higher education

In the late-1980s, radical reforms were introduced to Australian higher education, which continue to shape the structure and delivery of university education today. Reforms included the restoration of university fees, reduced public funding, removal of processes of coordination and consultation, and burgeoning university bureaucracies as a growing administrative body was encouraged to become corporate-style managers and entrepreneurs (Connell, 2021). Today, universities are increasingly accountable for creating positive student experiences while treating them as consumers, and for producing work-ready graduates (Huq & Gilbert, 2017). As McLaughlan and Lodge (2019) observed, the rise of the 'neoliberal university' has been accompanied by a shift from the 'knowledge age' to the 'conceptual age' where creativity and complex problem-solving skills are paramount.

The most recent higher education reforms, the *Job-Ready Graduates and Supporting Regional and Remote Students* (2020) measures increased fees for courses not deemed part of a 'professional pathway'. Much discussion and debate ensued about what the changes to funding arrangements meant for social work. The result was different classifications of program courses based on perceptions of 'skill development', effectively leading to what Papadopoulos (2022) describes as narrowing the scope of social work education and subjecting social work degrees to greater external determination driven by economic imperatives.

Now more than ever, students and academic staff are directed to view higher education as a means to employment and the development of professional skills suited to increasingly complex world challenges. Universities have become businesses that market themselves to secure students (and their fees) and to generate status-building research income. University education has increasingly shifted toward an approach that emphasizes the instrumental value of education over a more holistic approach to learning.

## Human services and social work skills

The context of Australian social work has similarly been shaped by government policies and service delivery arrangements informed by neoliberalism. Developments in human services delivery after the 1980s were based on the premise that market competition would lead to greater cost efficiencies for the government (Carson & Kerr, 2020). Guided by new public management propositions, the ensuing direction of human services delivery included shifting the delivery of social services from government departments to contracted non-government and private organizations through competitive tendering arrangements (Carson & Kerr, 2020). The implications for human service organizations,

where much social work practice takes place, is one where the nature of services, who should access those services, and under what conditions, has been increasingly constrained by government determinations. As explained by Carson and Kerr (2020), rather than being primarily accountable to service users, practitioners have become primarily accountable to their funder (i.e. government). In practice, practitioners have been encouraged to adopt a monitoring and compliance role over clients to meet contractual requirements, which has reduced scope to engage in policy advocacy and community action. An implication, therefore, is that social work practice may be confined to consumerist principles recognized in the business world, or that practitioners are required to develop new ways of working (Carson & Kerr, 2020).

These pressures have created the necessity for rethinking the design and delivery of social work education in ways that support research activity and policy analysis, which disrupt consumerist rationality and market-driven policy. Design thinking and participatory approaches to service design are increasingly being adopted by governments and human service organizations in Australia, to integrate service users into the design and delivery of a range of services and policy (Blomkamp, 2022; Department of Premier and Cabinet, 2020; Goff et al., 2022). However, despite its increasing popularity to enable community participation within these settings, design thinking remains under-explored in social work education. For social work and human services academics seeking to incorporate design thinking into the curriculum, there are very few examples to draw from. Moreover, as graduates are increasingly likely to enter workplaces where design thinking is applied, it will be important to equip students with the skills and knowledge to apply a critical lens to their use of this approach, and do so in ways that consider and challenge power disparities and inequalities.

## *Social work education in the contemporary context*

More proximately, the COVID-19 pandemic has raised questions about social work's preparedness to engage with the complexities of extreme events. Wu (2021) observes that professional social work education continues to lack a community-contextualized curriculum, jeopardizing the capacity of social work to provide humanitarian support for those affected by extreme events. The challenges that have arisen in the contemporary post-pandemic context are reflected in long-standing discussions and debates about what this context means for social work as a profession committed to advancing social justice and ameliorating social disadvantage. From a critical social work perspective, our interest is to respond to this context in ways that challenge the application of market principles to human services, addressing the forms of inequity, exclusion and disadvantage that result from the limitations of market economies (e.g. unemployment, poverty). We inquire whether design thinking may progress a critical social work agenda grounded in social work's epistemological foundations in the social sciences and humanities. Before we can respond to this question, we need to better understand the potential of design thinking to create opportunities for innovation in teaching and learning practices that enhances student engagement and responds to service user needs in a contemporary context.

### Defining design thinking

Our understanding of design thinking stems from a multidisciplinary amalgamation of creative approaches to addressing complex social problems. It was first popularized in the early 1990s to help designers understand and design for people's needs or experiences of a product or service (Szczepanksa, 2017). While there is no one clear definition, design thinking can be summarized as a 'human-centered, prototype-driven process for innovation' (Cohen, 2014, para.2). As practices, design thinking and critical social work both emphasize ethical partnership, inclusion, self-determination, collaboration, and individual empowerment to address shared issues in a manner led by those who have lived experience (McCashen, 2017; Szczepanksa, 2017), with design thinking increasingly applied at sites of structural inequality and oppression (Goff et al., 2022). In addition to understanding the application of design thinking to social work education, further exploring these synergies motivated us to undertake this study.

There are three common features of design thinking: process, principles and tools. The process is an iterative step in which designers cycle through a series of divergent and convergent phases to understand people's experiences, define the problem, design prototypes that best address the problem, test, and implement the solution, most illustrated by the UK Design Council's (2020) Double Diamond framework. Principles are cognitive styles of problem solving (Kimbell, 2015), in which designers adopt a particular mind-set based on attributes of creativity, involvement of people in all stages of the design process, and the assumption that those experiencing the problem which is to be solved should have a greater stake in the design process. Design principles may differ depending on the site of practice as well as the design outcome sought, for example, human-centered design may focus on understanding the needs of people at the center of the design (Steen, 2012), whereas co-design may focus on collaboration between stakeholders during the process (Szebeko & Tan, 2010). Tools are creative methods and techniques that facilitate the expression of participants' lived experiences and produce tacit and latent information or insights that articulate both observable knowledge as well as implicit or unexpressed ideas (Sanders, 2000). These insights are influential in designing for challenging social problems because they are likely to connect to more effective and desired solutions that are determined by those with lived experience. Examples of tools include journey maps, collage, or model building, all of which may generate objects representative of thoughts and feelings (Bessant & Maher, 2009).

Together, these three features of design thinking provide a useful frame for conceptualizing what elements may translate to social work education in ways that better respond to some of the contemporary challenges social work educators face.

## Methodology

Drawing on Arksey and O'Malley's (2005) framework for conducting a scoping study of literature, we sought to analyze how design thinking had been applied in tertiary education. We approach this research as social work and human services academics interested in integrating design thinking into our teaching. Units we teach include research, social policy, social work with groups, program design, and sociology, commonly referred to as 'macro-social work'. The perspective we bring and the interest we

have are similarly shaped by our own experiences of course coordination and curriculum design. We did not limit our study to any field of practice within social work. Given the breadth of our teaching and the limited application of design thinking in social work and human services education literature, we did not limit our search by discipline or by geographic location. Formal ethics approval for the research was not required as our sample comprised existing peer-reviewed journal articles and conference proceedings only.

Arksey and O'Malley (2005, p. 22) outline five key stages of their iterative process:

- Stage 1: identifying the research question
- Stage 2: identifying relevant studies
- Stage 3: study selection
- Stage 4: charting the data
- Stage 5: collating, summarizing, and reporting the results

As we developed our understanding of the literature, we refined the research aims and questions, as well as the scope of the research. We now outline the approach that we adopted at each stage of this process, detailed in Figure 1.

### *Stage 1: research question*

We first clarified key terms, conceptualizing design thinking as a mind-set, which was made operable by design processes, design tools, and informed by design principles. This

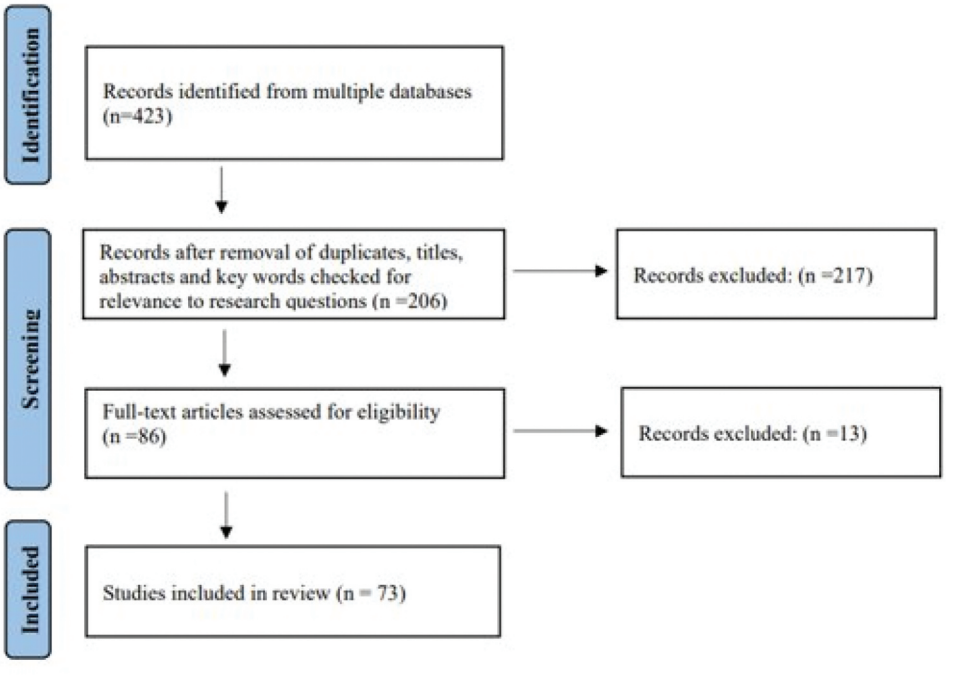


**Figure 1.** PRISMA flow diagram of study selection process.

interpretation was included in our primary research question, 'What does existing literature reveal about the ways in which design thinking (i.e. processes, tools, and principles) might contribute to social work education'?

### Stage 2: identifying relevant studies (database search)

We located relevant studies using the 'advanced search' engine of the library database at our tertiary institution, using terms such as 'critical social work', 'critical pedagogy', 'human-centered design', and 'social work research'. This led to an over-representation of studies conducted outside of an education setting, and a high number of results. Our final search included the subject 'design thinking', and terms 'social work education', 'human services education', and 'critical social work education'. We limited our results to studies published since the start of January 2000. This search yielded 423 results.

We systematically studied each article to determine relevance, reading the title, abstract, and search terms together, identifying whether the study focused on design thinking (including human-centered design), and whether the study was situated in higher education. This process narrowed the studies to 213, with a final figure of 206 following the removal of duplicates.

### Stage 3: study selection (abstracts)

We then divided the papers evenly among us, and individually studied abstracts to determine relevance. The questions guiding this stage are as follows:

- Does the abstract mention design thinking or similar search term?
- Does the abstract relate to the application of design thinking (or similar search term) in a higher education setting?

Answers to all questions were noted in a Microsoft Excel spreadsheet detailing responses to all 206 papers. If the answer to the above questions was 'yes', the paper was marked for inclusion. If the reviewer was unsure, the paper was marked for possible inclusion to be reviewed by the group. If the answer to these questions was 'no', the paper was marked for exclusion.

We further refined our focus to exclude all papers not specifically focused on tertiary education. We included studies where educators had applied design tools, as one element of design thinking, to design curriculum; however, we excluded studies which were more theoretical in their conceptualization of design frameworks without a direct application of design thinking. The final selection of 86 studies was reached through a peer review process, with each author checking the selections of another author.

### Stage 4: charting the data (reviewing articles)

We then examined the studies in more depth, charting the data on an Excel spreadsheet. Through this process, we asked a series of questions about the articles, including:

- What is the stated purpose for using design thinking in education?

- Does the application of design thinking in this article focus on interpersonal skills development and/or seek to influence wider social change?
- How/does the paper discuss design principles, process, tools?
- How do the authors describe the limitations of using design thinking?
- Does the paper acknowledge issues of power, and if so, how?

Each paper was carefully reviewed to develop a response to the questions. We wanted to understand why authors were applying design thinking in their teaching and curriculum design, and how they considered design thinking in relation to critical discourses related to social change and power. We were also interested in how authors described the challenges they encountered, and what they learned through applying design thinking in their teaching.

### *Stage 5: collating, summarizing*

At the conclusion of the charting process, we met to discuss our review of the 86 articles and approach to identifying themes. We allowed the questions posed in Stage 4 to guide our thematic analysis, and we identified clear themes, which were evident across different questions (such as a lack of focus on structural change, and limited recognition of power). Further, nine papers were excluded at this point, as the studies were carried out in secondary schools, or the setting was not specified (see Figure 1). We also decided to exclude book chapters through the charting process, resulting in 73 studies that met the inclusion criteria.

## Results

This section presents the findings from the review of 73 articles. We provide a review of the study characteristics and seven themes related to the research question '*What does existing literature reveal about the ways in which design thinking (i.e. processes, tools, and principles) might contribute to social work education?*'

### *Study characteristics*

More articles were published in the latter half of the search period (2010–2021), with the largest number published in 2021 ($n = 19$), indicating increasing interest in the use of design thinking in tertiary settings. As Table 1 shows, the majority originated from the

**Table 1.** Count of articles according to geographic focus (region).

| Region | Articles |
|---|---|
| North America | 31 |
| Europe | 21 |
| Australia & Oceania | 8 |
| Africa | 6 |
| Middle East | 1 |
| Asia | 3 |
| South America | 1 |
| **Total** | 73 |

**Table 2.** Count of articles according to author discipline.

| Study discipline (grouped) | No. of articles |
|---|---|
| Business Management/Management/Economics | 16 |
| Design | 13 |
| Education/Higher Education | 11 |
| Biology/Medicine/Engineering/STEM/Health Sciences | 10 |
| Information and Computer Technology (ICT)/Information Science | 9 |
| Communication/Media | 7 |
| Social Work and Public Administration/Theology/Development Studies/Tourism/Psychology | 7 |
| **Total** | **73** |

United States, Canada, and Europe, with the remaining from Australia and Oceania, Africa, Asia, the Middle East, and South America. The clustering of articles in these locations may suggest that design thinking in higher education is an emergent area of research in the Southern Hemisphere, and potentially highlights its limited use (and industry application) outside of western countries. Sixty studies were peer-reviewed articles, and 13 were conference proceedings. Of the 73, 47 were case studies, and the remaining studies included empirical analyses, reports of survey data, qualitative or experimental methods, grounded theory, action research, autoethnography, reflective discussion pieces, and a literature review.

One of the more interesting features of our sample was the disciplinary concentration of articles in business and associated disciplines (as shown in Table 2).

Only 2 of the 73 articles were situated within social work education, with the remaining representing science, technology, engineering, and mathematics (STEM)-related disciplines, business, education, design, health, economics, architecture, tourism and culture, media, theology, and public administration. The two social work articles described teaching and learning practices that promote both design thinking and critical social work competencies in relation to social innovation (Cavalcante et al., 2021; O'Keeffe et al., 2022).

## *Conceptualization of design processes*

The review found varying conceptualizations of a design process within the literature, with most authors referring to common sets of actions that were non-linear and iterative (Avsec & Jagiełło-Kowalczyk, 2021; Baltador et al., 2021; Chongwatpol, 2020), exploratory (van der Westhuizen et al., 2020), experiential (Clark et al., 2020; Pham et al., 2018) which culminated in prototypes or solutions to an already established problem (Alhamdani, 2016; Gleason & Jaramillo Cherrez, 2021). As Table 3 shows, there were 14 established frameworks with the most popular being the Stanford University d.school, followed by The Design Council's Double Diamond and the process developed by global design company IDEO. Some studies showcased an original or adapted approach, usually combining problem identification, creation, implementation, and reflection, for example, 'Design, Make, Appraise' (Leonard et al., 2016). Twenty-seven studies did not define or reference a particular process which may reflect a lack of systematic approach to the implementation of design thinking in an educational setting.

**Table 3.** Design thinking process.

| Individual or Organization | Design process | No. of studies |
|---|---|---|
| Stanford d.school | Empathy, Definition, Ideation, Prototype, Testing | 14 |
| UK Design Council | Discover, Define, Develop, Deliver | 3 |
| IDEO | Discover, Define, Ideate, Prototype, Test | 2 |
| Hasso Plattner Institute | Understand, Observe, Define, Ideate, Prototype, Test | 3 |
| Tim Brown approach | Inspiration, Ideation, Implementation | 3 |
| Schon's Pragmatist approach | Iterative Phases of Action and Reflection | 2 |
| Google Design Sprint | Understand, Diverge, Converge, Prototype, Test | 1 |
| Three Gear Framework | Empathy and Deep Human Understanding, Concept Visualization, Strategic Business Design | 1 |
| The Knowledge Funnel | Exploration, Heuristic, Algorithm | 1 |
| Zupan approach | Define, Need finding and Benchmarking, Body Storm, Prototype, Test | 1 |
| Liedtka approach | What is? What if? What wows? What works? | 1 |
| Austin Centre for Design | Conceptualize and Create, Implement and Assess, Refine and Scale | 1 |
| DEEP Design Thinking | Discover, Empathize, Experiment, Produce | 1 |
| Author's own approach | Diverse | 3 |
| Not defined | | 27 |

## *Conceptualization of design principles*

The literature likens design principles to key attributes, aims, or mind-sets that underpin the design process. Attributes include creativity (Vasconcelos et al., 2020), a willingness to learn through failure (Tschimmel & Santos, 2019), experimentation (Shahrasbi et al., 2021), developing empathy for end-users (Parris & McInnis-Bowers, 2017) and invention (Tham, 2021). The term, 'principle', was also used interchangeably with mind-set (Brady & Katre, 2021) or key 'humanistic' characteristics embodied during the process (Avsec & Jagiełło-Kowalczyk, 2021) which assist in meeting the design brief. Thirty-eight different design principles were cited across the literature. Common principles were as follows: 'collaboration'; 'problem-solving'; 'creativity'; 'human or user-centered'; 'empathy'; 'innovation'; 'interdisciplinarity'; 'reflection'; 'experimentation'; 'experiential'; 'willingness to be uncertain'; and conversely, 'seeking clarification in uncertainty'. Only four articles have explicitly articulated some awareness of power operations in their approach to design, highlighting 'gender sensitivity' (Warnecke, 2016), 'equity', and 'justice-focused' (Avsec & Jagiełło-Kowalczyk, 2021; McLuskie & Dewitt, 2019; Tham, 2021; Warnecke, 2016) as principles for design, indicating scope for increasing a critical theorization of design thinking.

## *Conceptualization of design tools*

Only 23 studies offered a definitive conceptualization of the design tools. Design tools were described as methods (Ejsing-Duun & Skovbjerg, 2019; Fabri, 2015), tasks (Luka, 2014), objects (Tham, 2021), skills (Brady & Katre, 2021; Wrigley & Straker, 2017) or activities (Clark et al., 2020; Parris & McInnis-Bowers, 2017) utilized within a design process to generate a testable prototype. Studies suggest that design tools are utilized to collect data (Biffi et al., 2017), to frame, investigate, or solve problems (Sarooghi et al., 2019; Shahrasbi et al., 2021), or provide scaffolding to reveal insights at different stages of the process (Brady & Katre, 2021). Many studies note that the design tools incorporate visual representations of data and ideas through sketches, personas, mindmaps, visual

storytelling, role plays, or other creative presentations (Baltador et al., 2021; Benson & Dresdow, 2015; Ellermann, 2017). The studies identify 45 different design tools, with the most popular being mapping and brainstorming activities, prototyping using craft or play materials, personas, and qualitative methods including interviews, focus groups, and observation.

### Application of design thinking

Many articles, using case studies or reflections on student experience, applied design thinking as a pedagogical practice (Drake, 2017) to provide students with immersive problem-based learning (Kragulj et al., 2018) whereby students learned about and engaged with a design process. Structuring course work around the different stages of a design thinking process provided opportunities for student learning about design theory and practices, as well as improving applied research skills (Drake, 2017), interdisciplinary collaboration (Sandhu et al., 2015; Shahrasbi et al., 2021), product development (Benson & Dresdow, 2015; Charosky et al., 2022), reflection-in-action (Fabri, 2015) and innovation (Clark et al., 2020; Luka, 2014; Wrigley & Straker, 2017). Some studies applied design thinking skills to develop course content (Garreta-Domingo et al., 2018; Parris & McInnis-Bowers, 2017), assessment activities (Huq & Gilbert, 2017), or for coursework co-creation with students (Brady & Katre, 2021). Others focused on problem-based learning which involved developing products or skills most relevant to their chosen profession, such as engineering or business management (Charosky et al., 2022; Kragulj et al., 2018). Product development and skills-based learning was prevalent across STEM and innovation education, requiring students to demonstrate technical product design skills as well as collaborative, user-centered, and future-focused design proficiencies. Both social work studies incorporated design thinking into coursework to support the creative development of social work program prototypes (O'Keeffe et al., 2022) and generate non-traditional and useful ideas for social organizations or the community (Cavalcante et al., 2021). Together, the studies suggest that design thinking is more likely to occur within a social work classroom environment to develop creative practice skills for applied settings and for the purposes of social change.

### Motivations for utilizing design thinking

The primary motivations for utilizing design thinking in higher education were to enhance innovation ($n = 15$), creativity ($n = 16$), and problem-solving ($n = 28$). This may be due to the predominance of studies in business, entrepreneurship, and computer information, which focus on technological and economic feasibility of new products and development of commercial capabilities. Studies suggest that design thinking may improve student's problem-focused decision-making skills (Avsec & Jagiełło-Kowalczyk, 2021; Morin & Moccozet, 2021), prepare for real-world and career-focused problem-solving (Valentim et al., 2017) and collaborate with agencies to apply problem-solving skills for real-world products or services (Henriksen et al., 2020; Tham, 2021; Tham et al., 2020). With respect to building student's innovation mind-set or creative capacity, educators were motivated to inspire creative thinking to respond to difficult-to-solve problems (Ellermann, 2017; Fabri, 2015; Pham et al., 2018). For

example, Tham (2021, p. 392) says, 'Our world needs innovative problem solvers now more than ever, and academia plays a key role in actualizing this reality'. Other studies reported being motivated to develop skills, professional identity, or mind-set related to the discipline of study, most notably in areas of complex reasoning (Benson & Dresdow, 2015), comfort with ambiguity (Greenwood et al., 2019), interdisciplinary collaboration (Shim, 2018), empathy (Tschimmel & Santos, 2019), a user-focus (Brady & Katre, 2021) and critical thinking (Hussain & Al Saadi, 2019). Many studies were motivated by design thinking to contribute to systemic-level social change; for example, Welsh and Dehler's (2013, p. 792) case study which prepared students to engage critically in 'processes of social change'. However, no studies have identified transformative or tangible social changes that emerged from applying design thinking in their site of application.

### Contributions to learning and teaching

The literature included in this sample illustrates distinct differences between the contributions of design thinking to the educator and student experience of higher education. Regarding student experiences of learning and applying design processes, findings include the strengthened ability to understand consumer or service user needs (Valentim et al., 2017), improving collaboration, critical thinking, creativity, and innovation skills (Charosky et al., 2022; Luka, 2014; O'Keeffe et al., 2022) and learning practical skills to apply in the future professional practice, particularly within STEM, design, and business education (Benson & Dresdow, 2015). Students also described a greater confidence to apply an interdisciplinary approach to real-world problem-solving (Oliver et al., 2019; Parris & McInnis-Bowers, 2017).

Regarding the integration of design thinking processes into educator's pedagogical practices, some studies highlighted a re-imagining of traditional education approaches through the practice of thoughtful risk-taking (Henriksen et al., 2020), and versatility and responsiveness to student feedback, industry problems, and the changing social and digital landscape (Atchia, 2021). Such responsiveness is argued to enable a more equitable and socially responsive classroom when individual student or contextual problems arise (Perkins, 2021; van der Westhuizen et al., 2020). Additionally, utilizing design processes and tools enabled educators to apply a novel approach to curriculum development and teaching practices (MacKinnon et al., 2020) by integrating practice-based activities, course work and assessment considered most valuable to agency partners and future employers (Yilmaz, 2022).

### Challenges of design thinking

Understanding and embedding design thinking practices was found to be the most frequently reported challenge for both educators and students. Challenges to educators included letting go of traditional academic practices to embody a design 'mind-set' (Henriksen et al., 2020; Novak & Mulvey, 2021), as well as clearly understanding design practices, purpose, and roles of interdisciplinary stakeholders when undertaking collaborative practices (Baltador et al., 2021; Biffi et al., 2017; Latham, 2017). Some studies suggested that without a deep understanding comes the risk of reducing design thinking to creativity (Garreta-Domingo et al., 2018; McLuskie & Dewitt, 2019). Additionally,

students reported feeling uncertain and anxious about a new way of thinking (Morin & Moccozet, 2021; Peters & Maatman, 2017; Yilmaz, 2022). Understanding, establishing the pre-conditions of, teaching, learning, and practicing non-traditional methodologies were reported to be both time and energy intensive, for both groups (Baltador et al., 2021; Fabri, 2015; Valentim et al., 2017), suggesting that its value should be recognized for it to be utilized.

Several studies have reported practical challenges in integrating design thinking into the curriculum. For example, tools are considered more useful and successful in-person than in virtual or hybrid learning environments (Alhamdani, 2016; Gleason & Cherrez, 2021), posing challenges to integrating creative methods in the post-pandemic environment. Other practical limitations include utilizing 'messy' (Henriksen et al., 2020, p. 211), non-linear design processes within a traditional semester (Henriksen et al., 2020; Sándorová et al., 2020), issues of intellectual property over the design and marketization of products between stakeholders (van der Westhuizen et al., 2020), and establishing collaborative partnerships with key stakeholders (McDonald et al., 2019). Several studies queried the critical engagement of scholars in relation to design thinking itself, drawing attention to limited evaluation of design thinking models within higher education (Sarooghi et al., 2019), limited conceptual understandings of the elements of design thinking (McLuskie & Dewitt, 2019) and their relationship to structural factors which may enable or obstruct social change (O'Keeffe et al., 2022).

## Discussion

### *What did we learn?*

After reviewing the research on design thinking within higher education, learnings emerged in two key areas. First, how design thinking *might be* applied within social work education, and second, how design thinking *is currently* applied in social work education. Regarding the first learning, the scoping review shows that design thinking principles, processes, and tools are relatively transferable across teaching disciplines and easily implemented within a classroom environment to develop discipline-specific skills, provided the educator understands and sees the value in the approach (Baltador et al., 2021). Design thinking might equip educators with pedagogical practices that are traditionally outside of their discipline, embed creative processes and tools into student learning experiences that purposefully respond to industry and service user-identified issues.

Regarding the latter learning, the current application of design thinking within social work and human services education is illustrated by two studies (Cavalcante et al., 2021; O'Keeffe et al., 2022). Cavalcante et al. (2021) suggests that for social work and human services students, an outcome may be the capacity to tolerate discomfort and 'not knowing', both of which align with critical self-reflection skills central to practice. In addition, Cavalcante et al. (2021) indicates that design thinking enhances and develops innovation competencies, experimentation, and collaboration, skills necessary in demonstrating solution-focused, equitable, and anti-oppressive practice. O'Keeffe et al. (2022) discusses the congruence of design thinking with critical social work, finding that design thinking can support creative thinking in a program design course. However, the study

suggests that its use in social work might be better aligned with anti-oppressive approaches if design principles, processes, and tools are more engaged with power operations and dominant ways of thinking, communicating, and defining social issues. Notably, very few studies identified through this scoping review have analyzed the application of design thinking in social work and human services education, suggesting that this connection has not been made in social work pedagogy, or that social work academics applying design thinking in their teaching have largely refrained from publishing on this experience. Further, we found no studies which analyzed the application of design thinking in teaching research in social work, including the potential of design thinking to inform research translation strategies.

### *Design thinking, criticality, and power in tertiary education*

As social work educators committed to critical social work education and practice, we were particularly interested in whether the selected articles acknowledged power dynamics and if so, how. A significant proportion of the studies included in this scoping review featured case studies, with the researcher(s) reflecting on, or analyzing, their application of design thinking in the courses they teach. The number of studies following this approach could reflect a perception among academics that using design thinking in a cross-disciplinary way is novel, and that others would benefit from a case study detailing an application of this approach. Many studies feature academics from outside the design discipline describing their application of design thinking. Invariably, these case studies are interesting and informative, detailing creative course design. However, across this body of literature, design thinking is largely applied non-critically, reflecting a superficial engagement with design thinking and lacking deeper analysis.

This uncritical approach highlights the instrumentalization and commodification of design thinking to achieve an educational aim. We observed that design thinking seems to be applied to inspire creative problem solving, innovative practice in the classroom, or facilitate problem-based learning. Despite not being guaranteed in design thinking literature, studies seemingly frame design thinking as a 'silver bullet', believed to inspire students to creatively respond to social problems, dilemmas, or challenges identified in each discipline. In disciplines such as business, ICT, and engineering, this may be expected and perhaps appropriate, but the social justice mandate of social work requires a more intentional focus on challenging the structural factors that underpin these problems. While this body of research highlights the ways that design thinking can be applied to create innovative teaching models and course structures, the lack of deeper engagement with design thinking meant the conflicts and tensions apparent in adapting design thinking across disciplines were largely unacknowledged.

The scoping review drew attention to the many applications of design thinking in tertiary education, yet this research did not reveal substantial insights about how we might adapt design thinking in ways that better align with a critical approach to teaching in social work and human services education. This is particularly apparent in the way that design thinking is applied uncritically as an approach to 'problem solving'. While advocating inclusive approaches to program design, for example, many studies adopted a deficit-lens when considering 'the problem'. In many of the studies, students were presented with an issue defined on the basis of identified gaps in goods and services, and/

or perceived deficiencies of a population as presented by the instructor. The 'problem' was defined by academics and in some cases industry partners, rather than informed by the needs and lived experiences of the focus population, which students would then 'solve' through participating in the design thinking process. The potential power-imbalances inherent within a deficit-oriented, problem-solving approach were not substantively reflected upon within these studies, which is at odds with the human-centered foundations of design thinking. Critical, strengths-based approaches were largely not evident in applications of design thinking in the articles reviewed. This absence is coupled with a limited conceptual discussion of the operation of power within design thinking. Thus, we suggest that a stronger conceptualization of and engagement with power in relation to application of design thinking in a tertiary education setting, including how it operates between students, educators, and stakeholders, as well as how it can be more equitably shared, is essential in developing an approach to design thinking which successfully aligns with a critical social work pedagogy.

Finally, we are interested in applying design thinking to conceptualize and work toward social change. While social change is identified as a focus of the studies highlighted in this research, social change is largely perceived in relation to individual change, resulting from the innovation created through the design thinking process. For example, students are described as learning to become 'change agents', specifically in disciplines outside of the social work, such as health (Saidi et al., 2020). This concept of change certainly has merit, particularly in the different disciplines where design thinking is adopted in the research included in this study. However, this also overlooks the potential for design thinking to be applied to achieve structural change. The limited conceptualization of social change observed in this research reduces the potential for learnings to be drawn in relation to how design thinking might be taught in ways that further a social change agenda which is centered on anti-oppressive, feminist, and decolonizing pedagogical approaches in social work theory and practice.

## Conclusion

Design thinking is becoming increasingly prominent as a methodology for program and policy development in the human services sector in Australia. Yet the inclusion of design thinking into social work curriculum and teaching is less clear. This leads to two key questions. First, how is design thinking being applied in tertiary education, and social work and human services education in particular? Second, what can we learn from the application of design thinking in these contexts, in ways that resonate with critical social work education, including research, policy, and practice?

On the surface, design thinking shares similar aims with critical social work practice, such as collaborating with communities and valuing lived experience (O'Keeffe et al., 2022). Our research has found that the application of design thinking in diverse fields such as tourism, education, business, and communication has remained quite superficial. Whereas these studies focused on adopting design thinking models for the purposes of teaching students 'problem solving', creative and innovative thinking, there was little evidence of substantial engagement with power, challenging structural inequalities or how these practices might be exercised.

Further, this study draws attention to limited focus of social work education literature upon design thinking, highlighting how this methodology remains under-explored in social work education. Thus, we suggest that while design thinking is increasingly seen as a framework for designing programs and policies in the human services sector, research is needed to understand how design thinking aligns with a critical social work agenda. Our research suggests that a more purposeful consideration of power is required within the process, as well as in the application of tools. Moreover, this limited focus draws attention to the need for social work academics to explore the potential for incorporating design thinking into curriculum, in ways which do not undermine critical and anti-oppressive teaching approaches. Further, we consider that the potential uses of design thinking in supporting the teaching of critical social work education should be investigated further. This approach has the potential to connect human-centered research with the policy and practice landscape, and support students' recognition of the significance of such research to social work practice.

Some limitations apply to this study. Article selection focused on applied research into the use of design thinking in tertiary education, which means that conceptual or theoretically focused articles on design thinking and social work may have been missed. Articles specifically on design thinking and social work practice were excluded. Such articles may have contained analyses of power. While we were specifically interested in how design thinking is being taught in universities, particularly in the social work and human services discipline, insights can be drawn from how design thinking is being applied in the field. This presents further opportunities for research to understand how design thinking is being applied in practice, for what aims, and whether design thinking is being adapted by agencies to support a more critical, anti-oppressive focus. In addition, this scoping review highlights the clear need to conceptualize how design thinking can be applied in ways that align with critical social work, particularly the operation of power, both in social work education and in practice.

## Disclosure statement

No potential conflict of interest was reported by the author(s).

## Notes on contributors

***Sonia Martin*** is a senior lecturer in the School of Allied Health at Australian Catholic Univerity. Her research interests include poverty, inequality, critical social work and the intersections between social policy and stigma.

***Rachel Goff*** is a lecturer in the Social Work and Human Services cluster at RMIT University. Rachel's research focuses on participatory and emancipatory research methodologies and with particular interest in community-based social change and the intersection of social work and design.

***Patrick O'Keeffe*** is a lecturer in Social Work and Human Services at RMIT University. Patrick teaches and writes in multidisciplinary fields including political sociology, critical human geography and social work. His teaching explores creative practices and methodologies to support learning in the classroom and through assessments, using approaches such as photovoice, photo elicitation and mental mapping.

## ORCID

Sonia Martin http://orcid.org/0000-0002-3223-8756

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