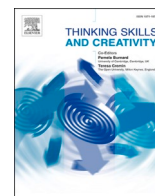


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Creative confidence and thinking skills for lawyers: Making sense of design thinking pedagogy in legal education

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ABSTRACT

Law schools globally are increasingly recognising the importance of integrating design thinking into their curricula to equip graduates with essential human-centred skills and mindsets for the future of work. Studies in recent years have investigated design thinking pedagogy in higher education, but there is a need for further empirical research to understand educator and learner perspectives in law schools. We conducted in-depth, semi structured interviews with design thinking educators from an Australian law school to investigate their experience and sense-making of design thinking pedagogy as a specific application case. While our research findings are not generalisable, this study allowed us to reach tentative conclusions about how design thinking might be used to approach skills teaching in law. Our participants sensed design thinking pedagogy as developing empathic, creative, and innovative thinking skills as an alternative to the traditional institutionalised way of producing lawyers. They also sensed it as enabling human centred problem solving, developing creative confidence, and enabling alternative mindsets. We propose that law students must cultivate a different way of thinking to prepare for the future of the legal profession. Integrating design thinking pedagogy into law curricula has the potential to prepare graduate lawyers to respond to complex legal problems with fewer constraints, to develop emotional intelligence, to build resilience, to tackle a fear of failure, and to better collaborate in multidisciplinary contexts. For these reasons, we propose all law schools consider including design thinking pedagogy, or relevant components, within their legal education curricula.

1. Introduction

In the past decade, many law schools worldwide have introduced design thinking studies, in recognition of the need for graduate lawyers to develop human centred skills and mindsets for the future of work (Hagan, 2020b; Hews, McNamara, & Nay, 2022; Jackson, 2016). Given the increasing inclusion of design thinking in law curricula, it is important to understand how *educators* — including lecturers, teachers, facilitators, faculty, tutors, coaches, academics, and unit coordinators — experience, perceive and make sense of design thinking pedagogy in design thinking courses offered by law schools in universities. To investigate this further, we interviewed design thinking educators from an Australian law school — Queensland University of Technology (QUT) Law School in Brisbane —

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each of whom had three or more years of design thinking teaching experience. Using Interpretative Phenomenological Analysis (IPA), we found that our participant legal educators made sense of design thinking pedagogy as *developing empathic, creative, and innovative thinking skills as an alternative approach to the traditional institutionalised way of producing lawyers*. In the specific context of our application case at the QUT Law School, this study enables us to draw preliminary conclusions on the utilisation of design thinking for skills teaching, and enriches existing literature by deepening our understanding of design thinking pedagogy within the context of legal education (examples of existing literature include Beligatamulla, 2021; Beligatamulla, Rieger, Franz, & Strickfaden, 2019; Hews, McNamara, & Nay, 2022; Koh et al., 2015; Luka, 2019; von Thienen et al., 2019).

This paper provides an overview of traditional approaches to legal education, explores the application of design thinking pedagogy in legal education and its relevance to the future of work, outlines the IPA methodology, presents our findings from interviews with design thinking educators, and sets out our analysis. We include quotations drawn from the interview transcripts and a visual representation of our superordinate and subordinate themes. To align with this journal's focus, we provide a more detailed overview of some themes over others.

2. Literature review

In this section, we provide a review of the literature addressing the limitations of traditional legal education, the definition and evolution of design thinking, its relevance in both the legal context and for the future of work, as well as its potential as a pedagogical approach. We also emphasise the need for further research to explore design thinking pedagogy within the specific context of legal education.

2.1. Limitations of traditional legal education

The hallmark of legal education is learning to 'think like a lawyer'. The traditional approach is based on the Socratic method and case-based teaching developed in the United States in the 20th century, which involves the law teacher calling on students to respond to questioning on pre-assigned case readings (Spencer, 2022). In the United Kingdom and Australia, law teaching has traditionally involved a generally didactic lecture accompanied by smaller group discussions which involve students unpacking a pre-assigned problem and following a structured legal problem-solving approach which involves identifying the legal issues, stating the relevant law, applying the law to the scenario, and reaching a conclusion (Keyes & Johnstone, 2004; Lebovits, 2010).

Law curricula has typically operated in the domain of knowledge and reasoning, and not in the more emotions-based *affective* domain, meaning it has largely "ignored the effect of feelings, attitudes and values in the learning process" (Maughan & Maharg, 2011, p.2). As Jones (2018) posits, the "law has traditionally set itself apart from its often-messy subject matter by holding itself out as a bastion of reason and rationality" (p. 450). This means law students are taught to analyse relevant facts — divorced from human and emotional dimensions — and apply principles and legislation to those facts to advocate for alternative outcomes based on the party they represent. Law Schools that adopt a more liberal tradition also embrace critical thinking and socio-legal analysis, however, the dichotomy between reasoning and the human dimension of a problem is maintained. As a result, law schools have largely adopted an approach that suppresses emotions in teaching law, arguably at the detriment of learning and wellbeing (Jones, 2018).

The ongoing transformation of the legal industry now calls for lawyers who are more sophisticated in their approach and who can accommodate the human and emotional dimensions of complex legal problem solving. There is increasing recognition of the limitations of highly specialised disciplines, like law, that cannot solve problems alone. Instead, there is a growing global trend towards multidisciplinary problem solving and the need for "*sophisticated generalists* [emphasis added] who can apply any form of knowledge to discover new solutions to the challenges we face today" (Niinikoski & Toivonen, 2021, p. 237). Design thinking pedagogy offers enormous potential for supporting the development of sophisticated generalists by facilitating innovative and creative outcomes across multiple disciplines (Luka, 2014). It also fosters "meta-disciplinary collaboration" as a potentially all-encompassing approach for experiential learning (Lindberg et al., 2010).

2.2. What is design thinking?

The term "design thinking" originated in the early 1900s, initially referring to the thinking behind designed products (Beligatamulla, 2021; Luka, 2014). Over time, it has evolved to encompass various interpretations, including a process, method, toolkit, mindset, or way of working (Cross, 2010; Dorst, 2010; Kimbell & Street, 2009, 2012; Lawson, 2006). While it was initially associated with design and architecture (Dorst, 2015; Rowe, 1987), it has expanded to other industries and disciplines, such as business, technology, government services and law (Chongwatpol, 2020; Kohlmeier & Klemola, 2021).

Today, "design thinking" is considered "an exciting new paradigm" (Dorst, 2011, p. 521) that uses the designer's "sensibility and methods to match people's needs with what is technologically feasible and ... viable [for] business" (Brown, 2008, p. 86). It draws on intuition, pattern recognition, emotional meaning, and non-verbal expression (Brown & Wyatt, 2010, p. 30) to provide a "powerful methodology ... [that] integrates human, business and technical factors in problem forming, solving and design" (Leifer & Steinert, 2011, p. 151). In a legal context, design thinking — also known as 'legal design', and closely related to 'human centred design' — offers a creative and human-centred approach to addressing complex legal problems (Brown & Katz, 2019; Hagan, 2020b; Kohlmeier & Klemola, 2021).

2.3. Design thinking for the future of legal work

By 2030, over two-thirds of jobs are predicted to be human skill intensive (Deloitte Insights, 2019). A 2021 survey across 15 countries identified 56 skills necessary for the future of work, including cognitive, interpersonal, self-leadership, and digital skills (McKinsey & Company, 2021). Within these skills, 31 align with core competencies of design thinking, such as empathy, creativity and imagination, collaboration, courage and risk taking, agile thinking, and coping with uncertainty (Wrigley & Mosely, 2023). In law, lawyers will need human skills like creativity, customer service, care for others, and collaboration (Crotofo, 2019), innovative problem solving (Alt et al., 2023), and new ways of thinking including data-orientated thinking and agile systems (Janeček et al., 2021), all of which are foundational to design thinking. For these reasons, we propose that law students must cultivate a different way of thinking to prepare for the future of the legal profession.

The growing demand for lawyers with design thinking skills is evident through emerging new roles in law such as Legal Designer, and the projected expansion into other legal positions such as Head of Client Experience, Head of Innovation, Legal Innovation Facilitator, or Head of Legal Customer Success (Kohlmeier & Klemola, 2021, pp. 246–247). Graduates of QUT's own *Law and Design Thinking* unit — which teaches students to think differently about the law, legal services, access to justice, start-ups, technology, innovation, and entrepreneurship — reported considerable demand for their legal design skills and experience in the workplace (Hews, McNamara, & Nay, 2022). Graduates also reported that the unit allowed them to develop increased emotional awareness, empathy, complex reasoning, creative problem solving, and dynamic social intelligence (Hews, McNamara, & Nay, 2022).

Design thinking is employed globally in the field of legal services in areas such as the creation and delivery of legal advice, legal practice management, enhancing lawyer-client communication, exploring remedies within the judicial system, and more (Hagan, 2020b). Examples of legal design strategies include applying design thinking to workers' claims for damages from employers, designing accessible online dispute resolution platforms, designing user friendly documentation automation tools, and improving the accessibility of free online legal information (Chang, 2022; Korhonen, 2022; Matthews et al., 2022; Thomas, 2022). Notably, international law firms like King Wood Mallesons have used client-centric approaches in redesigning their legal service delivery (Alber, 2019).

2.4. Design thinking pedagogy and legal education

By embracing design thinking pedagogy, law schools can empower students to approach legal challenges from a fresh perspective, fostering innovative and empathetic solutions that address the complex and evolving needs of clients and society. Research focused on design thinking pedagogy in legal education is limited, but it is beneficial to consider research on design thinking pedagogy in the broader context of higher education, most of which has emerged within the past decade (see, for example, Anderson, 2012; Donar, 2011; Lattemann et al., 2020; Panke, 2019; Schell, 2018). Existing studies focus on design thinking as developing skills and capabilities such as creative problem-solving (von Thienen et al., 2019), creative confidence (Rauth et al., 2010), human-centeredness (Beligamulla, 2016; Zoltowski, Oakes & Cardella, 2012), innovation and impact (Anderson, 2012; Wrigley & Mosely, 2023), and collaboration (Lindberg et al., 2010). Others focus on how design thinking scaffolds student learning (Tu, Liu & Wu, 2018) and supports student-centredness in classrooms (Elliott & Lodge, 2017; Jones, 2014; Koh & Chai, 2016).

Design thinking pedagogy can be used in teaching and learning to help students develop the skills needed to respond to twenty-first century challenges (Luka, 2014). It develops learner capabilities through iterative problem solving that promotes ambiguity, collaboration, constructiveness, curiosity, empathy, holism, iteration, a non-judgmental way, and openness (Luka, 2014). It has been described as a “model for enhancing creativity, endurance, engagement and innovation” (Dolak et al., 2013, p. 2). It is also said to support “innovative and creative outcomes across multiple disciplines”, foster “a meta-disciplinary collaboration” and increased “interdisciplinary collaboration in creativity”, and provide an “all-encompassing approach for experiential learning” (Pande & Bharathi, 2020, p. 3; Rauth et al., 2010).

While the potential benefits of design thinking pedagogy appear to be vast, implementing design thinking pedagogy is not without its challenges. Higher education programs have found it difficult to keep pace with design thinking's rapid rise in popularity and the changing context of industry (Wrigley & Mosely, 2023). This may cause delays and costs associated with developing new programs, building reputation, gaining support and approval, creating curriculum, and securing academics with the necessary skills and knowledge to teach these courses (Wrigley & Mosely, 2023). It must also be recognised that not all students and academics will embrace design thinking with “the same level of zeal and interest” and these tensions may lead to disengagement and resistance (Greenwood et al., 2019, pp. 414). Other potential problems may include delivering courses that do not achieve their outcomes resulting in “a lack of creative confidence, teamwork conflicts, anxiety and frustration, shallow ideas, idea creation over evaluation, lack of long-term impact, overconfidence, [or] misalignment between learning content and design thinking experience” (Panke, 2019, p. 299).

Despite these challenges, Hagan (2020a), Director of the Stanford University Legal Design Lab, suggests design thinking provides “a new track for innovative legal education” (p. 109). There is a growing body of literature about the role of design thinking in law and legal design (Corrales Compagnucci et al., 2021), however, more work is needed to better understand the potential of design thinking pedagogy to transform the way law is taught more broadly. Considering this context, and drawing on our literature review and relevant prior studies, we have developed the following research question: *How do educators in law schools experience, perceive and make sense of design thinking pedagogy?* Using our specific application case, this study aims to provide insights into legal educators' understanding of design thinking pedagogy, its practical implementation, its impact on teaching and learning, and potential implications for legal curricula.

3. Methods

This paper focuses on Phase 1 of our three-phase research project, where we conduct interviews with design thinking educators in law at QUT as a specific application case. In Phase 2, we will interview students who have completed law and design thinking studies at QUT, to gain deeper insights into the distinct experiences of legal educators and students. During Phase 3, we will interview design thinking educators in law from other Australian and international law schools and conduct a comparative analysis. Ultimately, our research aims to examine the wider implications of design thinking pedagogy in legal education by integrating data from all three phases of our research.

In this section, we provide an overview of IPA, describe our participant selection process, outline our approach to data collection and analysis, present our results, and address issues of credibility, dependability, and transferability of our research.

3.1. Interpretative phenomenological analysis

IPA is a qualitative research approach which is designed to explore personal lived experience, the meaning of an experience to participants, and how participants make sense of that experience through a reflective process of interpretation involving both the researcher and the participant (Smith et al., 2022; Smith, 2011, 2019). It recognises that people perceive the world in very different ways, depending on personalities, prior life experiences and motivations (Reid et al., 2005). In higher education, the benefits of IPA include its potential to understand the deep personal meaning and the experiential aspects of learning and teaching (see Bainger, 2011; Cope, 2011; Pipere & Micule, 2014). The use of IPA is appropriate for studying design thinking pedagogy in legal education, as it emphasises understanding and interpreting individual experiences. This analytical approach allows researchers to delve deeply into participants' subjective perspectives, uncover the complexities and advantages of design thinking pedagogy, and gain insights into its transformative potential in legal education.

In this study, we explore legal educators' personal meaning, *experience*, and *sense-making of design thinking pedagogy*. The term *experience* acknowledges that understanding is shaped by the specific context and individuality of a situation or person (Beligatamulla, 2021). *Sense-making* is used as the action or process of making sense of, or giving meaning to, teaching and learning, especially in the context of pedagogical developments or new experiences (Beligatamulla, Rieger, Franz, & Strickfaden, 2019). *Design thinking pedagogy* concerns the theory and practice of teaching design thinking, including the strategies, actions and judgements that inform curriculum design and delivery (Beligatamulla, 2021).

3.2. Participants

To select participants, we contacted all five design thinking educators who had taught in QUT's undergraduate unit *Law and Design Thinking*, and all agreed to participate in interviews. We recruited them through official email communications with no screening after receiving their expression of interest. Following the principles of IPA, our approach allowed us to gather qualitative data from a reasonably homogenous group of legal educators, who share a common focus on design thinking teaching (Smith et al., 2009). As IPA is concerned with detailed accounts of individual experience, the number of participants is typically low — like our sample size of five — allowing for a “concentrated focus on a small number of cases” (Smith et al., 2009 p 51; for examples of studies where sample sizes range from three to six participants, see: Anglim et al., 2018; Beligatamulla, Rieger, Franz, & Strickfaden, 2019; Buckley et al., 2021; Coffey et al., 2020; Haegele & Kirk, 2018; Hunt et al., 2021; and Wagner & Bunn, 2020). Table 1 provides a demographic overview of our five participants.

As Phase 1 of this research project involves interviewing legal educators from our home institution, we were concerned about the potential effects of bias and power dynamics between researchers and participants. To address these ethical implications, only one researcher (author) — who is not a law academic and who had not worked in the law school prior to this research project — was tasked with communicating with participants about the research project and team, seeking voluntary participant consent, arranging and undertaking all interviews, providing the option for participants to check a copy of their transcript, and de-identifying all interview

Table 1
Demographic information for participants (design thinking educators in legal education).

Demographic Factor	Participant Composition
Employment status (in relation to the unit <i>Law and Design Thinking</i>)	1 university lecturer (tenured) and unit coordinator; 4 sessional (casual) lectures / tutors
Employment status and background (unrelated to the unit <i>Law and Design Thinking</i>)	2 practicing lawyers; 2 solicitors, not currently practising; 1 customer experience designer and facilitator; 1 former lawyer and former police officer; 3 out of 5 participants own small businesses
Gender	4 females; 1 male
Geographic origin	5 Australian
Design thinking learning (formal/informal qualifications)	All participants were self-taught in design thinking by engaging with theory and through industry experience; 1 participant was additionally a graduate from another QUT legal design unit
Design thinking teaching experience	All had 3+ years of design thinking teaching experience
University qualifications	1 PhD related to law; 4 law degrees; 1 English literature and corporate affairs degree; 1 physics degree; 1 commerce (behavioural economics) degree; 1 commerce (management) degree; 1 MBA; 1 graduate diploma in education; and some additional qualifications that are not relevant to this study.

data (Ethics approval ID 2021000445). The remaining two researchers (authors) do not have access to identified data.

We have received participants' consent to use their interview transcripts in publications. In our analysis, each educator is identified only by code (E1, E2, E3, E4, E5) or by the longer version "Educator 1" (or 2, 3, 4, 5). We have coded excerpts from educator transcripts using both the participant number and the column number from which the quote is sourced.

3.3. Data collection and analysis

To collect our data, the interviewer conducted audio-recorded interviews with all participants and transcribed them verbatim. The unit coordinator was interviewed twice: once like the other participants and then with the Learning Management System (Blackboard) visible on a computer screen, showcasing the curriculum and teaching materials. The computer screen recording was used as an additional guide to the descriptions made by participants.

The interviewer used a consistent semi-structured, open-ended question guide for all participants, covering topics such as the legal educator's background and teaching experience in design thinking, their definition of design thinking, philosophical stance, the concept of being a design thinker, the importance of design thinking in legal education, teaching content, unit structure and delivery, and observations on student learning and participation. Participants were encouraged to provide specific examples during the interview.

Our IPA analysis was led by the interviewer, with cross-checking by the other two researchers. This included reading and re-reading the transcripts, making descriptive, linguistic, and conceptual notations, developing emergent themes, and identifying connections between themes (Smith et al., 2022).

3.4. Results

As depicted in Table 2, we identified one superordinate theme and five subordinate themes. In our discussion, we focus primarily on our superordinate theme and subordinate themes B and C, which are likely to be of greatest interest to this journal's audience.

3.5. Credibility, dependability, and transferability

While qualitative research cannot be verified in the same way as quantitative research, we have taken steps to ensure the credibility of our data as "reasonably likely to be accurate and appropriate" (Denscombe, 2014, p. 297). We engaged in respondent verification by providing participants with the option to check their transcripts and had the benefit of conducting this study within our home institution. While 'insider research' has its disadvantages, its benefits include *knowledge*, *interaction*, and *access* (Greene, 2014, pp.3–4). Our deep *knowledge* and familiarity with the evolution and implementation of teaching design thinking in the QUT Law School provided a strong foundation for our deep examination of interview transcripts and drawing conclusions. In terms of *interaction*, as our participants were already acquainted with us as researchers, they were willing to engage in the study and share their experiences. Given the project's development and initiation occurred during the height of Covid-19 shutdowns in 2020 and early 2021, expedient *access* was a key factor considered in the project's design. Our choice to interview participants from our home institution was driven by both research strategy and the access limitations we faced globally during that period.

As discussed earlier, to mitigate subjectivity and bias in our 'insider research' (Greene, 2024, p. 4), data collection and preliminary analysis was undertaken by the non-law researcher. In terms of dependability, we have provided a clear account of our methods, analysis, decision-making, and the process leading to our conclusions (Denscombe, 2014, p. 298). To ensure transparency and coherence, we have included several verbatim extracts from participants material, thereby "giving participants a voice in the project and allowing the reader to check the interpretations being made" (Smith et al., 2009, p. 177).

Given the small-scale of our qualitative study, it is important to clarify that our findings cannot be generalised to all instances of design thinking pedagogy in legal education. Instead, our study allows us to reach tentative conclusions about how design thinking can be used to approach skills teaching. It attempts to show how design thinking pedagogy is experienced in the specific context of our application case in the QUT Law School. While our findings are not representative of what exists in other instances, we have attempted to provide sufficient information to allow the reader to make judgements about how our findings *might* apply in comparable instances (Denscombe, 2014, p. 299). Future research, particularly Phase 3, will also enable such comparisons.

Table 2

Superordinate and subordinate themes.

Superordinate theme: Design thinking pedagogy sensed as developing empathic, creative, and innovative thinking skills as an alternative to the traditional institutionalised way of producing lawyers				
Subordinate theme A	Subordinate theme B	Subordinate theme C	Subordinate theme D	Subordinate theme E
Design thinking pedagogy sensed as enabling human centred and empathic problem solving	Design thinking pedagogy sensed as developing creative confidence in a safe-to-fail environment	Design thinking pedagogy sensed as enabling an alternative mindset and way of thinking	Design thinking pedagogy sensed as developing learner engagement with a deep understanding of the problem	Design thinking pedagogy sensed as providing an innovative and entrepreneurial approach to lawyering

4. Findings

Our findings and discussion focus predominantly on the superordinate theme and on subordinate themes B and C. For the purposes of context, we have also provided a summary of subordinate themes A, D and E.

4.1. Superordinate theme: developing empathic, creative, and innovative thinking skills as an alternative to the traditional institutionalised way of producing lawyers

In this superordinate theme, educators sensed design thinking pedagogy as developing empathic, creative, and innovative thinking skills as an alternative to the traditional institutionalised way of producing lawyers. Spanning across all five subordinate themes, our superordinate theme captures the depth and complexity of design thinking pedagogy and its benefits to law students, lawyers, the future of law and work, and for students as humans. It incorporates flexibility, modelling mindsets and behaviours, understanding clients holistically, taking a reverse-approach to legal problem solving, authentic assessment in the context of complex ‘messy’ problems, developing skills for future problems, and empowering students as change-makers. In the context of this paper, the term *authentic assessment* refers to the deliberate design of assessment that closely mirrors real-world “challenges and standards of performance” encountered by professionals in the field (Wiggins, 1989, p. 81).

Educators sensed design thinking pedagogy as *providing flexibility* in teaching and supporting students’ legal problem-solving. It went beyond discipline-based teaching principles, allowing students to draw on their broad legal knowledge and life experiences. It provided a platform from which students could consider: “not what the law is, but what the law can be” (E5, Column 1). Educator 5 elaborated:

“I found that ... the discipline or the pedagogy or the framework of design thinking was beautifully constructed and ... clear enough to allow us to teach, but loose enough still, it hasn’t sort of rigidified into a set of discipline-based teaching principles ... [we are] teaching the next generation about the world they will graduate into and giving them the skills to be able to develop the law further ... [I’ve] never seen anything like this before: [it’s] quite revolutionary in a way ... turning the whole idea of the law on its head.”

(E5, Column 1)

Educators made sense of design thinking teaching as requiring them to be flexible too. They needed to *model mindsets and behaviours* to guide students away from rigid legal thinking and towards a less structured approach to problem solving. As Educator 5 explained:

“How we teach [design thinking] is not based on a rigid set of instructions ... we’re taking a group of students who’ve been indoctrinated in a particular [legal] mindset and we’re asking them to set that mindset aside. I think, as educators, we have to set our own [legal] mindsets aside as well, [because] to what extent can we as educators encourage our cohort ... to drop a particular model and adopt a less structured model ... [if we are not] willing to model that behaviour ourselves?”

(E5, Column 3)

In design thinking teaching, educators promoted the *use of empathy to understand problems and clients holistically*. Unlike the traditional legal approach which focuses on a client’s legal issue, empathy enables a deeper understanding of clients, potentially leading to innovative, and sometimes non-legal, solutions that better address their broader circumstances (Hagan, 2020b). Educators compared the empathic elements of design thinking teaching with traditional legal education:

“For the most part of my career, I ... was often told you’re too empathetic, just look at ... the legal problem and solve that legal problem, instead of looking at the person and the thing as a whole and devising a solution that’s suited to that person.”

(E4, Column 2)

“The idea [is] that design thinking is based on empathy and it’s human-centred and really trying to look at the client in a more holistic way and trying to identify different ways of addressing problems which might actually have nothing to do with the law.”

(E2, Column 1)

Within the context of developing empathy, participants experienced design thinking pedagogy as a *skills-based* and *reverse approach* to teaching law. It encouraged lawyers to apply alternative thinking skills and develop novel responses to complex legal problems. Educator 2 explained:

“Most law units are not skills-based; they tend to be more theory-based ... [but design thinking is] very much focused on empathy ... empathy is the foundation of it - it’s human-centred - which means that students are learning how to approach an issue almost from the opposite end to how we traditionally teach law ... it’s taking almost a reverse approach to responding to legal problems and ... potentially a non-legal approach. So, certainly, the mindset and the methodology are non-legal, and the outcome could potentially also be non-legal.” (E2, Column 3)

Educator 5 used an analogy to explain this same idea:

“We teach law based on hindsight; looking back; this is what worked in the past; this is what was decided in the past ... I say to my students ‘we traditionally teach law looking in the rear-view mirror; you learn to drive as a lawyer in the rear-view mirror. Well, what kind of a lawyer is that, right? So, what I want to do is teach you to drive looking through the glass, looking through the windscreen,

looking ahead at the road, at the trees ... [looking at where] you want to go, rather than where we have been.' So, the how of design thinking gives law students and legal educators permission to see traditional lawyering as just one input, [one that is] precedent-based or historically rooted [in legal] principles ... It also allows us to see that the law is only one perspective ... that's tough for lawyers to see that [sometimes] the legal issue [might be] minor or even peripheral ... [if] you can solve these other bigger issues first, [then] the legal issue [might] go away."

(E5, Column 3)

This skills-based, forward-looking approach was also evident in assessment design. Assignments focussed on *evaluating students' application of design thinking mindsets and methodologies in response to complex, 'messy' legal problems*, rather than assessing legal content and solutions. In the intensive design sprint, students tackled unfamiliar legal problems, navigating a variety of legal and human complexities over a two-day collaborative experience. To ensure authenticity, community and industry representatives provided first-hand insights on topics such as elder abuse, COVID related access to justice, and supporting self-represented litigants. Educator 2 explains further:

"Each year we ... work with a community legal centre [and] industry to ... establish a broad problem context ... In the lead up [to the assessment weekend], we will release to students a whole lot of legal documentation ... because we're not actually testing their knowledge of the law about elder abuse [for example], we're just wanting them to have a sense of that space because a lot of them might not be familiar with it."

(E2, Column 4)

Design thinking teaching was also experienced by participants as *empowering students to think critically and develop a skillset for solving problems in society at large*. It aimed to cultivate students' willingness and ability to take responsibility for addressing future challenges. As Educator 5 explained:

"When you come to law school, you want to be equipped with, you want to graduate with, the skills to be able to ... think critically and engage with almost any aspect of society and participate ... in solving problems ... Human centred legal problem solving ... should be ... a core part of the curriculum because... isn't that why we have law schools in the first place ... to graduate a cohort, a generation of people who are empowered ... and willing to take responsibility for solving problems we don't even know exist yet?"

(E5, Column 7)

In a similar vein, Educator 2 highlighted how the unit's design aims to prepare students for the future of law by fostering their graduate capabilities and skills. This approach *supports students to become change makers or influencers*:

"[The] design thinking [unit] is particularly focused around legal futures. So, it's about being able to create better legal futures for everyone; it's about uplifting our students in a way that they are going to be able to have the skills and the knowledge to do law in new ways: because the traditional law is ... very rapidly going by the wayside ... it's about helping our students to be prepared and have the graduate capabilities for the future of law."

(E2, Columns 5–6)

4.2. Subordinate theme A: enabling human-centred and empathic problem solving

In this subordinate theme, educators sensed design thinking pedagogy as enabling human-centred and empathic problem solving. It emphasised collaboration between educators and students, and focussed on putting humans at the centre of what lawyers do and how they design law. For example, one participant commented:

"I think that the problems that people face are becoming more and more complex and ... sometimes the law can feel like a pretty blunt instrument... [design thinking] opens up so many more ways of solving legal problems than just applying the law."

(E4, Column 6)

Educators also sensed design thinking teaching as creating a cohort of open-minded professionals who think in ways that are multidisciplinary, empathetic, tolerant, and holistic. They distinguished it from other legal units, due to its focus on developing creative, human-centred problem-solving skills.

4.3. Subordinate theme B: developing creative confidence in a safe-to-fail environment

In this subordinate theme, participants sensed design thinking pedagogy as developing creative confidence in a safe-to-fail environment. It involved students reconnecting with their creative selves, overcoming discomfort and barriers, promoting collaboration over competition, and embracing uncertainty. This approach also supported students in developing emotional intelligence and building resilience, that is the ability to persevere, cope, or bounce-back (Bleasdale & Humphreys, 2018, p. 19).

Although educators viewed some students as being more creative than others, *design thinking teaching embraced creativity at all levels*. Educators perceived that many law students had *lost their sense of childhood creativity* by the time they reached university and viewed themselves as "not creative". Educator 1 commented:

“If you’re a creative, you can pick up design thinking quite quickly... if you’re not empathetic, creative, and curious, then we have a lot more work to do. ... for some [students], it’s like a duck to water and then for others it’s like by week four or five they’re having that aha, I get it moment. But there’s so much discomfort in the early stages and then it’s like they go oh, I can relax a bit. I’ve got it. I just have to think a bit differently and actually this is a lot of fun: so, it’s okay.”

(E1, Column 6)

Educators sensed that *the dynamic of studying law can hamper collaborative and creative work* due to the entrenched competitive mindset within legal education, the legal system, and legal workplaces (Stallman, 2012). Educator 5 explains:

“Our responsibility as educators is to ... make it safe for students to adopt a different mindset ... It’s currently unsafe for law students to not think like a lawyer: you don’t do well, you don’t get a good grade, you don’t get a job ... It’s an unsafe environment at law school to be collaborative. It’s safer to be competitive, for example, or adversarial because that’s part of ... the generations of lawyering that we teach. So, I wanted to create a safe environment or an environment where students felt safe to break the rules.”

(E5, Column 6)

Educators also perceived that law students and lawyers may lean towards perfectionism, leading to discomfort and resistance towards failure, a recognised issue in legal practice (Schwarz, 2021). To address this, they adopted strategies to *help students embrace uncertainty and the often-messy aspects of creativity*, encouraging them to be comfortable with not knowing the exact solution from the outset. As Educator 4 explains, students commonly ask:

“*Am I doing this right?* ... That can be a thing for lawyers as well, like that perfectionist streak, whereas design thinking is not about finding the perfect solution up front. It’s about putting them all out there and finding something that you connect to in that ideation process, pulling various different ideas together and sometimes you get to be a bit silly and think completely out of the box like *how would an elephant solve this?* Whereas that is not something that you would [traditionally] ever do when you’re solving a legal problem.”

(E4, Column 4)

This approach also helped students *to learn to recognise the value of failing and how to manage feelings of discomfort*. According to Educator 3:

“... people that have skills and experience in design thinking are better problem solvers when they make it into workplaces ... it exposes you to a bunch of mindsets that you may not have had exposure to. So, being comfortable having a beginner’s mindset; being comfortable with failing and just seeing it as an opportunity to learn; being comfortable being uncomfortable.”

(E3, Column 4)

In their efforts *to support students to feel safe-to-fail* while “doing things differently”, educators used *physical activities, fun, humour* or even “*being silly*” to help break down discomfort, fear or barriers. Educator 1 elaborates:

“I tell them to put their phones and their laptops away... We give them texters and coloured pens and post-it notes [and] ... stand up to do activities ... if I notice the energy is lulling ... I’ll get everybody up ... I’ll start doing star jumps and being silly and make sure that, you know, everyone has a rush of endorphins because they get to laugh ... I kind of try and make sure that I’m conscious of the different perspectives in my room ... and encourage those who might have found like their one little place in the universe that makes them feel safe.”

(E1, Column 4)

Educators also used “*structured creativity*” to foster creative confidence in students. They facilitated activities where students were given a problem to solve within a set timeframe, and introduced constraints to encourage students to think more broadly or laterally (Tromp & Baer, 2022). This approach encouraged students to move beyond obvious solutions and towards more creative and novel solutions. As Educators 2 and 3 explain:

“It’s really about teaching ... the benefits of structured creativity and about establishing constraints to promote creativity and about the collaborative aspect and about using the energy and the ideas from different people to continue trying to generate as many ideas as we possibly can in response to whatever the problem is that we’ve defined ... [It’s also about] reconnecting with creativity that they probably had as a child but that has ... gone by the wayside over time.”

(E2, Column 2)

“We’d do three timed rounds of two minutes [and say] *you’ve got your post-it notes, you’ve got your sharpies, here’s your challenge, start the timer, go*. And then we might do a round where I would say *okay, we’re going to introduce a restriction* [a constraint], *you’ve got another two minutes but this time you’ve got no budget what can you do with no money, go*.”

(E3, Column 2)

“Initially, [students] will start to probably come up with obvious solutions ... They’ll then hopefully work into slightly more unusual or more creative solutions and then as we provide constraints, that will hopefully promote even more sort of creative thinking and innovative ideas.” (E2, Column 3)

Educators sensed this *pedagogy as distinct from traditional legal education*, which tends to be more serious, based on precedent, and

less inclined to foster creativity or play. Activities generally involved standing rather than sitting, moving around the room in teams, and using vertical and physical space to place post-its on walls, create sketches or journey maps, build prototypes with Lego, or to role-play a legal service idea (for more on Lego Serious Play, see [Wheeler, 2020](#)). Educator 5 elaborated on these approaches:

“[Students were] forced to create through doing, where there are no rules ... [for example, they] play with Lego ... I think it’s very important for lawyers to be encouraged to see that it’s okay to start from scratch ... it’s okay to tackle the problem by not relying on precedent ... not because [precedents are] wrong, but because you don’t know what else is possible.”

(E5, Column 2)

Ultimately, educators sensed that their *broader goal was to cultivate students who could translate their creative confidence and safe-to-fail mindset to any work or personal context*. Educator 3 stated they “like to think that [after studying this unit, students] could feel that they have the ability and the confidence to step into a bunch of different experiences, projects [and] conversations”. (E3, Column 4)

4.4. Subordinate theme C: enabling an alternative mindset and way of thinking

In this subordinate theme, which is strongly situated within our superordinate theme, design thinking pedagogy is sensed as enabling an alternative mindset and way of thinking. It includes supporting students to develop awareness of their existing mindsets, cultivating different modes of thinking, providing a way of thinking that complements their existing legal thinking, applying design thinking in various contexts, and embracing holistic reflection.

Educators sensed design thinking pedagogy as supporting students to *develop awareness of their existing mindsets and to cultivate different ways of thinking about human-centred problems*. This awareness allows students to look beyond traditional legal thinking and towards alternative approaches that better serve clients’ needs. To develop awareness, educators encouraged students to interrogate their existing mindsets before embracing new ways of thinking. Educator 5 explained:

“[Students] first have to confront their own existing mindset before they can even be willing to change it or adopt a different one. So, my approach is to hold a mirror up to the students and show them how their mindset produces a specific, particular outcome and then somehow encourage them to try to, you know, find a different approach ... I’m challenging their mindsets.”

(E5, Column 7)

Educators also experienced design thinking pedagogy as a “parallel universe”. They aimed to *extend students’ understanding of different modes of thinking, enabling them to choose the most appropriate mode for any problem*. Educator 2 explained:

“I think it’s a bit like me when I first started learning about [design thinking] ... I was like, there’s this whole parallel world or parallel universe out there where people think differently to how we think as lawyers. And that kind of sounds obvious and probably almost stupid. But ... we kind of get so set in our [ways and] ... forget that there’s other ways ... we do not have to be stuck in this traditional legal approach.” (E2, Column 7)

Educator 5 expanded on this idea of *developing different mindsets and ways of thinking*:

“If we achieve one thing with design thinking, it’s changing the way we think, it’s changing the mindset from a lawyer mindset to an entrepreneurial mindset or ... a human centred design or problem solver type mindset or a multidisciplinary thinker, from you know, a specialist into ... a lawyer who can work in a multidisciplinary environment.

(E5, Columns 5–6)

Design thinking supports students to *develop alternative ways of thinking, not only as a mindset but also as a methodology*. The methodology guides students through a semi-structured creative journey where the steps themselves require a particular way of thinking. For example, a five-step design thinking process may produce different ways of thinking to a shorter lean start-up type of process ([Lichtenthaler, 2020](#)). Educator 3 commented that design thinking can be:

“a mode of thinking for an individual ... [or] a group in a project environment ... [or] policy level ... So, I would say, you know, *at this step if you [are] ... coming from a lean start-up lens then you may look at it like this*; just to give them exposure to other modes of thinking as well.”

(E3, Column 2–3)

While design thinking pedagogy differs from traditional legal thinking, it is not a substitute. Educators recognise the importance of law students mastering traditional legal thinking and the legal content in a law degree. However, integrating design thinking *provides a complementary skillset and way of thinking* that students can draw on when responding to complex legal challenges. According to Educator 2:

“I think there’s real value in students being able to go into more traditional law units but having a mindset where they might be able to think, okay, so, we’re doing the traditional legal response to a problem here, but if I was to apply a design thinking mindset ... [there] might be another way of dealing with this problem.”

(E2, Column 6)

One of the principal aims of design thinking in law is for graduates to *think about their clients more holistically*, so they can find innovative ways of responding to clients’ needs. However, they can also use these mindsets and methodologies to respond to challenges

of their own at university, in their careers or personal lives, and to invest in themselves as humans. According to Educator 1, it is about helping students “feel like they can be a more whole person in their legal practice, because there isn’t much scope in legal practice traditionally for empathy, for creativity, [or] for collaboration”. (E1, Column 5)

4.5. Subordinate theme D: developing learner engagement with a deep understanding of the problem

In this subordinate theme, educators sensed design thinking pedagogy as developing learner engagement with a deep understanding of the problem. This theme is strongly aligned with subordinate theme B, enabling human centred and empathic problem solving. Educators perceived design thinking pedagogy as supporting students to use empathy-based skills to understand complex problems more deeply. For example:

“We do a range of different empathising activities to really help students to develop an understanding of deep empathy ... it’s actually really difficult to try to identify the core issues, or the core motivators, or the core pains, or the things that are going on more deeply and how they then shape the needs that we’re trying to respond to. And it’s really important that students take a lot of time to try to hone the skills in learning how to identify those issues.”

(E2, Column 2)

4.6. Subordinate theme E: providing an innovative and entrepreneurial approach to lawyering

In subordinate theme E, educators sensed design thinking pedagogy as providing an innovative and entrepreneurial approach to lawyering, with a specific focus on legal service design. They saw it as fostering entrepreneurship by supporting students to generate new ideas through an innovation process. This involved teaching students how to evaluate potential legal responses for desirability, viability, and feasibility, and teaching similar lean start-up approaches (Lichtenthaler, 2020). Educators also sensed design thinking pedagogy as enhancing students’ graduate employability, including developing their professional branding and career plan. For example:

“[We are] looking at employability and specifically supporting students to develop professional branding and trying to identify how they might use design thinking skills in law ... and what that’s going to mean for them as they develop their career.”

(E2, Column 2)

5. Discussion

This study investigated how educators in law schools experience, perceive and make sense of design thinking pedagogy. While our research findings are not intended to be generalisable, in this section we discuss how design thinking may address gaps in traditional law curricula, including moving aspects of legal education into the affective domain. We identify how it can humanise the teaching of law and support students to develop emotional intelligence, build resilience, diversify their thinking, gain creative confidence, and tackle their fear of failure. We discuss the rise of multidisciplinary problem solving and the value of design thinking alongside traditional legal approaches, revealing its transformative potential in legal education and its impact on legal innovation and the future of work.

5.1. Alternative mindsets and thinking skills

Our participants sensed design thinking pedagogy as enabling alternative mindsets and developing empathic, creative, and innovative thinking skills. In this way, design thinking pedagogy can potentially address gaps in traditional legal education by supporting students to move beyond the constraints of rational thinking and legal reasoning and to avoid more litigious and adversarial approaches (Haapio et al., 2021). Design thinking also offers a valuable methodology for interdisciplinary creative work, by enabling multi-professional teams to establish common ground and perspectives (Lindberg et al., 2010, p. 35).

Legal education has largely operated outside of the *affective domain*, a ‘catch-all phrase’ for aspects of behaviour including:

Self-concept, motivation, interests, attitudes, beliefs, values, self-esteem, morality, ego development, feelings, need achievement, locus of control, curiosity, creativity, independence, mental health, personal growth, group dynamics, mental imagery, and personality.

(Martin & Briggs, 1986, p. 12)

With *affect* often seen as “irrational, and antithetical to core Western ideals of rationality”, legal education and curricula have traditionally remained in the domain of knowledge and reasoning (Maughan & Maharg, 2011, p. 1). Spencer (2022) argues that traditional methods of teaching law ‘may be producing lawyers who are not equipped with the emotional intelligence required for modern legal practice’ and advocates for more progressive approaches that require ‘more contemplation, more active listening and less aggressive advocacy’ (p. 99). Design thinking pedagogy appears to enhance legal education by incorporating the affective domain in ways that draw on emotions to diversify and broaden law students’ thinking skills. It creates space in the curriculum for alternative and reflective thinking, active listening (especially when empathising), creativity, innovative problem solving, collaboration rather than

competition, and a non-litigious, non-adversarial approach to complex legal problems.

With its focus on empathic, creative, and innovative thinking skills, design thinking pedagogy appears to harness emotions rather than suppress them. It provides real-world experiential learning where students focus on humans and emotions, while deferring their focus on the solution (Thanaraj et al., 2023, p. 151). This helps to position students as *humane* professionals, where an overlap between personal and professional value systems allows students' "emotions [to] command attention and facilitate memory" as they "actively car[e] about what they are learning and its consequences" (Maughan & Maharg, 2011, pp. 223–228; Ferris & Huxley-Binns, 2011). Design thinking has the potential to facilitate students' focus on both the emotions of their future clients and their own emotions, fostering the development of emotional intelligence and resilience (Thanaraj et al., 2023). This includes enhancing their understanding of existing mindsets, cultivating diverse modes of thinking, and embracing a holistic perspective of themselves (Bleasdale & Humphreys, 2018).

5.2. Creative confidence

Our participants perceived design thinking pedagogy as developing creative confidence in a safe-to-fail environment. This potentially enhances law students' thinking skills and fosters emotional intelligence and resilience. *Creative confidence* refers to the "natural ability to come up with new ideas and the courage to try them out" (Kelley & Kelley, 2012, p. 115). While this is something we are said to be born with, it can diminish over time due to socialisation, formal education, a tendency to become analytical, and fears of judgement, the "messy unknown", the first step, or losing control (Kelley & Kelley, 2012, p. 115). *Creative confidence* can also be understood to mean "a development of trust in one's own creative skills" (Rauth et al., 2010, p. 6). In terms of learning, it is the repetition of design thinking that creates *creative thinking* which translates to *creative acting*, and vice versa, both of which lead to confidence and competence in *creative behaviour*, that "in sum build creative confidence" (Rauth et al., 2010, p. 6).

Our findings suggest that design thinking pedagogy may provide an environment that promotes creative confidence by encouraging play, making students feel 'safe to break the rules' and encouraging them to experiment. There is strong support for educational curricula to incorporate creative thinking and interdisciplinary creativity, with play and games recognised as tools that "enhance individual and collective creativity" by addressing the "cognitive, emotional and social dimensions of learning" (Moirano et al., 2020, p. 6). Critical elements of playing games for the purpose of creativity can include the role of warm-up activities, generating 'good spirit', and engaging all players, including those with different knowledge, backgrounds, and perspectives (Moirano et al., 2020, p. 6). For our participants, it was the 'play' and games that provided an opportunity to reconnect with their creative selves and break down discomfort and barriers. This reinforced the theory that educators need not necessarily *teach* students to be creative, but instead help them *rediscover* their creative confidence, overcome their fears, and develop their creativity through practice (Kelley & Kelley, 2012, pp. 115–116). This approach allowed our students to develop their creative mindsets and thinking, engage in creative acting and, in doing so, develop their creative confidence and competencies.

Design thinking pedagogy also appears to help students tackle their fear of failure. Our findings suggest that, with practice, students became increasingly comfortable with the 'messy' process of design thinking and with not knowing solutions at the outset. In a recent study, Allbon and Perry-Kessarar (2023) similarly found design thinking helped their students become: 'more willing to *give things a go* rather than obsessively overthinking'; more 'aware that answer[s] may lie ... anywhere ... not just ... in textbooks and journal articles'; and more 'free to experiment with different ideas and be a bit more open'. When our students became comfortable with the pedagogy — which is so different to traditional legal teaching — they were able to embrace the experience, develop their creative confidence, engage in innovative problem-solving, and recognise that "early failure can be crucial to success in innovation" (Kelley & Kelley, 2013, ch. 2). By developing a willingness to see failure as part of learning, students can build a 'resilience toolkit' containing the characteristics they need to 'keep going' through difficulties, discomfort, or failure and 'not give up' (Bleasdale & Humphreys, 2018, pp. 19–21).

5.3. Design thinking in law curricula

Universities are increasingly recognising the benefits of embedding design thinking in curricula as a means of encouraging collaborative teamwork, multidisciplinary learning, failure and experimentation, and to enhance innovation (Wrigley & Mosely, 2023, p. 11). This approach also prepares graduates for the future of work by promoting creativity and problem solving (Guaman-Quintanilla et al., 2022 p. 217) and enabling them to respond to complex 'messy' problems, such as access to justice initiatives (Thanaraj et al., 2023, p. 10). Educators considering the integration of design thinking pedagogy into their curricula have various implementation approaches to choose from. They can choose lighter interventions by incorporating specific elements of design thinking into existing units or opt for more comprehensive transformations like reimagining entire degree programs. Between these extremes lie numerous possibilities that allow educators to tailor the integration of design thinking according to their educational contexts and objectives.

Examples of how to implement, embed or integrate design thinking pedagogy into curricula include developing university-wide majors and minors, combined bachelor's degrees, cross-faculty labs, multidisciplinary undergraduate design degrees, or post-graduate design programs (Wrigley & Mosely, 2023, p. 79). Other approaches involve partnering with industry or incorporating work-integrated learning, both of which facilitate the integration of real-world problems into curricula (Wrigley & Mosely, 2023, p. 154). Some suggest fostering cross campus, faculty, or school collaborations which enable students (and potentially academics) to collaborate on co-design projects, industry-focused initiatives, or campus-based start-ups (Thanaraj et al., 2023, p. 151). It can also be embedded through elective or core units, extra-curricular opportunities, or by tailoring traditional law units. For example, students

might be required to design user-friendly legal documents in Contract Law or create technology-based solutions for access to justice in Criminal Law. Finally, Law Schools might also invite academics from other disciplines (such as design, business, information technology, engineering, or social justice) to provide input or to collaborate with students during design sprints or workshops.

Law Schools must adapt their curricula to maintain relevance and responsiveness, and to support students to navigate the evolving legal landscape by fostering interdisciplinary knowledge and future readiness (Thanaraj et al., 2023, p. 10). To this end, Wrigley and Straker (2017) recommend developing a multidisciplinary design thinking curriculum using an educational design ladder framework which specifically scaffolds the design of multi-, inter-, and transdisciplinary courses (p. 380). Their approach stages the delivery of design thinking pedagogy to progressively move students from foundational level learning (theories, methods, and philosophies), through product or service design, design management, business strategy, and personal development and leadership (Wrigley & Straker, 2017, p. 380). This type of curriculum integration transcends disciplinary boundaries and produces innovative, entrepreneurial graduates who are prepared for the future (Wrigley & Mosely, 2023, p. xvi).

As universities bear the responsibility of preparing graduates for evolving work demands, law schools should not overlook the increasing demand for the skills and mindsets that design thinking can offer. We strongly encourage law schools globally to consider embedding or integrating design thinking pedagogy, or its relevant components, into their curricula, to enhance the abilities of law students and equip them to tackle complex global challenges (Thanaraj et al., 2023, p. 8).

6. Conclusion

In this study, we sought to understand how educators in law schools experience, perceive and make sense of design thinking pedagogy. While our research findings are not intended to be generalisable, we reached tentative conclusions about how design thinking might be used to approach skills teaching in law. Our participant legal educators sensed design thinking pedagogy as developing empathic, creative, and innovative thinking skills as an alternative to the traditional institutionalised way of producing lawyers. This enabled students to cultivate diverse thinking mindsets, creative confidence, a deeper understanding of complex problems, human-centred and empathic problem solving, as well as an innovative and entrepreneurial outlook. It also appears to contribute to the rise of versatile generalists and multidisciplinary problem solvers, poised to become influential changemakers tackling the intricacies of future challenges.

As technology, automation, and artificial intelligence are reshaping the role of lawyers, law students must develop different ways of thinking to prepare for the future of the legal profession. To flourish in the evolving landscape of work, law students must embrace the power of multidisciplinary collaboration, cultivate creative thinking, develop emotional intelligence and resilience, and embrace uncertainty and failure as opportunities. Design thinking pedagogy offers a promising avenue to supplement traditional legal education and transcend the limitations of conventional legal thinking. For these reasons, we strongly encourage law schools globally to explore the possibilities of embedding or integrating design thinking pedagogy, or its relevant components, into their curricula. By empowering students to transcend conventional boundaries and effectively address the ever-changing needs of individuals and society, we can equip them to navigate the continuous transformation of the global legal industry.

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CRedit authorship contribution statement

Rachel Hews: Conceptualization, Validation, Formal analysis, Writing – original draft, Writing – review & editing, Supervision, Project administration. **Gnanaharsha Beligatamulla:** Conceptualization, Methodology, Formal analysis, Investigation, Data curation, Writing – original draft, Project administration. **Judith McNamara:** Conceptualization, Validation, Formal analysis, Writing – review & editing, Supervision, Funding acquisition.

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