Introduction to the Special Issue "The Future of Futures Thinking in Design Education"

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Zhiyong Fu[1], Anna Barbara[2], Peter Scupelli[3]

[1]*Academy of Arts & Design, Tsinghua University, Beijing, China*
[2]*Department of Design, Politecnico di Milano, Milan, Italy*
[3]*School of Design, Carnegie Mellon University, Pittsburgh PA, USA*

Abstract

The special triple issue dedicated to 'The Future of Futures Thinking in Design Education' is edited for a dialogue between futures studies and design education. The conversations began with the International Conference on Design Futures in 2020 and continue to be ongoing. In volume I, we introduce the role of futures thinking in design education with short openings by each of us, followed by a summary of the articles, essays, and report. Our objective is to transform the present design education to focus on long-term issues rather than just short-term ones, and highlight the futures literacy in shaping the design abilities to deal with uncertain futures.

Zhiyong Fu

Futures thinking and futures literacy are key capabilities in design education for understanding, forecasting, and shaping uncertain futures. Futures thinking is a process of exploring and foreseeing possible, potential, and desirable futures and their impacts on current decisions and actions. It involves critical thinking, scenario development, and adopting a long-term perspective. Inayatullah describes futures thinking as a mindset that involves exploring and imagining possible, plausible, and desirable futures. This approach emphasizes openness, diversity, and creativity, aiming to help people better understand future possibilities and challenges (Inayatullah, 2008). Futures Literacy is the ability to understand and apply these futures thinking tools and methods to better grasp the uncertainties and complexities of the future. Miller defines futures literacy as a capability that enables individuals to understand better, forecast, and influence the future. This ability involves recognizing the uncertainties and complexities of the future, along with creative and critical thinking in facing it (Miller, 2007).

Futures thinking as an educational method aims to expand students' thinking, enabling them to consider their actions' long-term impacts and possibilities. It cultivates their foresight abilities and preparedness for sustainable development crises, strengthening their altruistic tendencies and being essential for promoting responsible actions (Laherto & Rasa, 2022). Futures thinking allows students to contemplate the relationship between science and its social, cultural, and political environments, enabling them to contribute to societal transformation (Jones et al., 2012). Future-oriented activities like systems thinking, scenario development, and retrospection can broaden students' future cognition, imagination of alternatives, and ability to navigate uncertainties (Carter & Smith, 2003). Social science issues offer ample scope to incorporate futures thinking into science education, as it can enhance student engagement, develop value-laden discourse, and foster analytical and critical thinking skills (Buntting & Jones, 2015). In a symposium, design educators also outlined four future scenarios for the role of design and designers in society, including integrating design education into K-12 curricula to foster early development of design thinking; establishing design as a core discipline in interconnected global university networks; expanding the role of designers to influence public policies and socio-economic agendas; and personalizing remote design education based on individual learners' interests. This revealed core needs in design education and envisioned a framework for the future (Singh et al., 2018).

* *Corresponding author*.
 E-mail addresses: fuzhiyong@tsinghua.edu.cn (Z. Fu),

The application of futures thinking in design education is rapidly becoming a transformative force. By integrating Futures Thinking in education, we can nurture designers with futures literacy, capable of foreseeing possible futures and using this foresight to drive innovative and sustainable design practices. The paradigm shift in design education is moving from traditional skill and tool orientation to focusing on futures thinking and literacy. Futures literacy is seen as key to educational transformation and innovation, highlighting the importance of understanding complexity, uncertainty, and changeability. This indicates that design education increasingly recognizes the need to cultivate students' critical thinking and creative problem-solving skills beyond technical competencies. The methodological shift in design education is adapting to the changing social and technological landscape. The inclusion of futures thinking as a core component of design education signifies a shift from traditional, linear teaching models to more open, iterative, and exploratory methods.

In the realm of future studies and futures literacy education, applications extend beyond the confines of design education, as evidenced by several scholarly investigations. A study conducted by researchers from Chalmers University of Technology and Gothenburg University demonstrates the application of artistic methodologies and speculative design in non-design contexts, encouraging innovative future-oriented thinking in professional settings (Muñoz et al., 2023). Additionally, a framework proposed by a researcher from Gordon Academic College of Education integrates linguistic, numerical/informational, and scientific/critical literacies in education, applicable across various disciplines. This framework underscores the importance of interdisciplinary knowledge in understanding and shaping the future (Bol, E. & de Wolf, 2023). Furthermore, research from Utrecht University highlights the impact of future thinking courses on students' futures literacy, indicating that the cultivation of such literacy can be implemented in a broad educational spectrum (Vidergor, 2023). Collectively, these studies emphasize the diverse applications of future studies and futures literacy education, offering new perspectives and tools for fostering an understanding and capability to navigate the future.

By adopting strategies like scenario planning, speculative design, and focusing more on interdisciplinary and transdisciplinary learning, futures thinking in education is more than skill development; it's a way of understanding and responding to a changing world. This means that the ontology of design education—the fundamental nature and purpose of education—is shifting from traditional knowledge transmission to fostering students' adaptability, innovativeness, and capacity to understand complexity. This shift emphasizes that design education is not just about learning form and function but about understanding and shaping the future.

Anna Barbara

This Special Issue focuses on the need to systematically introduce Futures Studies into the education in design, architecture and urban studies. The Global Design Futures Network (GDFN) was set up within three major universities, Tsinghua University, Politecnico di Milano and Carnegie Mellon, to ensure that the discipline of Futures Studies is considered to all intents and purposes a fundamental teaching in the education of designers. The network, which has seen numerous activities in its first four years, is becoming a reference for institutions that intend to experiment with Futures Studies in education, research and design. The area of Futures Studies, in fact, encompasses and crosses many disciplines and design practices, which are strategic for the conscious growth of a generation of designers, but also policymakers and entrepreneurs. Over the years, the topic has been the subject of international conferences involving futurists worldwide, seminars with institutions, and experiments with students, PhD candidates, scholars and researchers from various universities (Fu et al., 2020).

Designing a Futures Studies pedagogy requires a disciplinary strengthening and broadening, both in terms of the methods of Design Thinking and the point of observation, which remains extremely anthropocentric (Inayatullah et al., 2006). Starting from universities so different in their history and cultural roots also means wanting to explore the future of Futures Studies, not only from Western perspectives, trying to involve institutions from other countries to include their visions, cultures, and traditions. The purpose of GDFN is to put different and alternative futures at the center by involving universities from very different and distant countries, to loosen the technological obsession, to decrease the emphasis on predictions, and to become multicultural and plural (Sardar, 1999). The challenge of the GDFN is to start literacy from the very beginning of education, so that the future is not seen as inescapable, but becomes a true design methodology for the next generation of students at every level of education (Bishop & Hines,

2012). The GDFN approach embodies the opposite form of paternalistic disciplinary education, as it enables students to regain autonomy and self-determination. The skills required must be both technical and cultural to enable awareness and language, but also the freedom that allows people to orient themselves, develop ideas and points of view, express themselves and defend their dignity (Miller, 2006). Indeed, the new generations historically see their future vanishing, cannibalized by previous generations. Teaching them through Futures Studies offers new pedagogical tools, but also calls for pro-action.

The associated educational objectives of Futures Studies aim to educate and assist students in developing the ability to see and prepare for their future, to interpret significant changes, whether technological, political or social (Poli, 2017). The introduction of common goals such as the SDGs helps to build shared actions, without neglecting the fact that the construction of shared methodologies and practices has a strategic nature on the generations that those futures begin to design. The relationship with the future that one seeks to establish becomes more strategic than the future itself. It is no longer understood as a forecast, but as long-term thinking that helps project design thinking into the future to consider how the context, in its broadest sense, may evolve (Corà et al., 2023). In the context of teachings, especially related to design disciplines, the exercise of temporal projection is a fundamental axis on which to run the projection of visions. It becomes essential to teach where to place the various thresholds of futures; to identify what the concerns and expectations are; what scenarios of the future include the envisaged projects; what post-human perspectives are included; how many futures are reconcilable with the envisaged project.

From the perspective of educational practice, but also of scientific research, it emerges that we need to promote the next generation of architects and designers, so that they are capable not only of assessing issues from a design and community perspective, but also of designing the future they desire for themselves and for the communities in which they live. Indeed, what is needed is a process of redefining the reading categories of the current world on the dimension of the future, not as a possible near future scenario, but as an element of the social imaginary through which strategies of coexistence and development can be elaborated (Appadurai, 2014).

The educational objectives of a pedagogy for Futures Studies must allow for the development of desired scenarios that motivate and produce results; the exercise of anticipatory studies; the sharing of ethical values that help make appropriate choices among various possible alternatives; the understanding of trends and events that may influence the future, capable of exercising both creative imagination and critical thinking to discern a range of possible, preferable and desirable futures on a personal and collective level; the development of responsible citizenship and political skills to contribute to active and responsible citizen participation. All futures - possible, plausible, probable, and preferable - must have a voice in the project so that there is awareness of the mechanisms by which we can shape it (Amara, 1981).

The timing is particularly favorable because pedagogy as a whole is experimenting with digitally-related hybrid forms of education, which allow for greater experimentation and support of learning systems and help raise awareness of new perspectives (Slaughter, 1996). This Special Issue continues GDFN's exploration and collection of Futures Studies.

Peter Scupelli

This special issue explores how futures thinking and design thinking are mixed into design education. The mixing of futures and design is meant to be both provocative and exploratory in nature. We seek to show diversity in perspectives of how the global community sees that interdisciplinary space of encounter between futures in design education.

Historical precedents illustrate that new ideas often emerge at the intersection of differing ideas, disciplines, and cultures (Johansson, 2004). There is a rich history of how new design thinking methods emerged to address new areas of societal concern (Jones, 1992). Futures studies as well continue to evolve and change over time to address new societal concerns (Gidley, 2017). It follows that the landscape of futures in design education will fluidly continue to evolve.

Historically speaking, periods of change can be challenging, confusing, and unclear. Change often challenges established paradigms by identifying edge cases that are not well supported by status quo paradigms (Kuhn & Hacking, 2012). We're observing an emergent paradigm shift in design education to address twenty-first century

societal level design challenges such as the unfolding climate disaster and the SDGs (Davis & Dubberly, 2023).

The introduction of futures themed courses into design schools follows different trajectories such as: elective courses, required courses, and new focused areas of study. For example, I've noticed the appearance of elective courses such as, design fiction, speculative design, critical design, experiential futures, for both undergraduate and masters students. Next, I noticed the introduction of a required futures course for all undergraduate design students. In other institutions worldwide, masters degrees in Design Futures are offered (e.g., Royal College of Art, Royal Melbourne Institute of Technology). Likewise, certificate courses in design futures are taught as continuing education elsewhere (e.g., Parsons, IFTF, XuetangX). This broad range of examples indicates that there are indeed many ways to combine futures into design education.

For this special issue, we gathered articles illustrating a broader range of ways of integrating design and futures into design education. You'll notice some interventions operate at the philosophical level, others describe exercises, others focus on course design, a whole new curriculum design, or the role of conferences as knowledge flows and exchanges.

For example, Barbara and Ma focus on shifting the worldview around design futures to include community. Lundmark and Rodela situate hackathons as a mechanism for students to explore futuring in the educational context. Cooper embeds design futuring tools within a foundational visual communication course. Martin describes a futures pedagogical framework for sustainable transformation of design teaching and learning. Lin, Villari, Yan, and Wang explore speculative design and systems perspectives into service design teaching. Zhu, Chao, and Fu describe speculative design in HCI as a way to bridge to the design futures community. Barendregt, Bendor and Van Eekelen identify the meaning of criticality in design futures education. Lyu, Zhu, and Fu describe the International Conference of Design Futures as a distributed knowledge building and flows.

Summaries of articles, essays and reports

This special issue consists of diverse articles, essay and report focusing on the intersection of futures thinking and design education. In this way, they adequately address the extensive scope of the topic in various design educational scenarios.

Anna Barbara and Yuemei Ma explore utopian aspirations for the future spatial ideal of architectural education and the dialectic of its need to be 'realized'. From the perspective of design education and the futurescapes, the authors argue that in the educational practice of fostering the next generation of architects and designers, they need to be capable of more than assessing issues from the perspective of design and community, not only to face current challenges but also to design the future they desire for themselves and the communities in which people live.

Sofia Lundmark and Romina Rodela situate hackathon as a design method to innovate on questions related to futuring in an educational context. Through the analysis of students' assignments, they analyze how this method allowed for space in finding one's own voice, how the design material supported students' work on future design, and how aspects of future design are helping students find a way of acting upon current calls to re-work our cities.

Clare M. Cooper embeds design futuring tools in a foundational visual communication unit to engage students in the social justice impacts of innovations and events over time. Teaching results demonstrate benefits not only to the students' critical thinking, but also to improved, more ambitious design argumentation in their submitted designs.

Suzanne E. Martin introduces a new creative futures pedagogical framework for creative higher education as a mechanism for addressing the need for the sustainable transformation of creative teaching and learning. The study seeks to evidence the application of futures thinking beyond the content and communication of design learning.

Zijun Lin, Beatrice Villari, Ming Yan and Mansu Wang use case studies to explore integrating Speculative and Systemic perspectives into Service Design teaching to support future-oriented and systemic mindset building. In addition, the potential for future thinking to reinforce Service Design education was emphasized.

Lin Zhu, Chiyu Chao and Zhiyong Fu reveal how speculative thinking approaches have been leveraged within the field of Human-Computer Interaction by using the literature review method. This work aims to serve as an intermediary between the Design Futures community and HCI, thereby facilitating cross-disciplinary collaboration and advancing speculative thinking within HCI.

In an evocative essay, Laura Barendregt, Roy Bendor and Bregje F. Van Eekelen identify the meaning of

criticality in design futures education. By drawing connections between critical pedagogy and critical futures studies, they aim to chart a path through which design futures education can potentially grapple with the political, contentious aspects of future-making.

The International Conference on Design Futures as a continuous event, Yanru lyu, Lin Zhu and Zhiyong Fu introduce the concept of conference organization based on the framework of distributed knowledge building and flows. The dynamic process of knowledge-action networks enables the community to connect more stakeholders and achieve sustainable development.

With the merging of futures studies and design research more widely, the intersection between them has received increasing attention. We're excited to see authors worldwide join in the conversation to explore how to integrate futures thinking into design education and cultivate reflective practitioners. Moreover, the educational community needs to think about how to introduce the concept of "design futures" into teaching.

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