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# Speculative Design in Education: Mapping the Landscape.

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**Abstract** | This paper presents findings from a recent European-wide study on the use of Speculative Design approaches within education. The study included a survey of design educators and interviews with Speculative Design practitioners. This data has contributed to a mapping of the current educational landscape in Europe and will inform the development of an open set of resources for educators interested in Speculative Design and related approaches. Themes that emerged from the study are discussed in detail in the paper including; views on defining a curriculum along with metrics for assessment, the development of open guidelines and frameworks, attitudes towards generating change and implementing action, and understanding the distinguishing characteristics of Speculative Design within an educational context.

**KEYWORDS** | SPECULATIVE DESIGN, CRITICAL DESIGN, EDUCATION, INTERDISCIPLINARITY

# 1. Introduction: the survey and interviews

## 1.1 Speculative and related design approaches

Speculative, Critical and Fictional Design methods question the conventional practices of design, including interrogations around who has the rights and privileges to carry out the activity of designing. This alternative way of working foregrounds the freedom to use creativity to extrapolate from signals observed here and now, in order to ask questions about how the future - or indeed the present - could be, rather than merely how it should be (see e.g. Auger, 2013; Dunne & Raby, 2013; Sterling, 2009). This family of design methods, based around the blending of aesthetics and critique, has attracted much attention in recent years from both enthusiasts and sceptics, and many words have been written about the nuances of different styles and approaches (e.g. Bardzell & Bardzell, 2013; Malpass, 2017; Tharp & Tharp, 2019; Tonkinwise, 2015; Blythe & Encinas, 2018). In this paper we use the term Speculative Design in an inclusive manner, acknowledging that there is a broad range of related approaches, each with their own emphasis, and that these continue to evolve. This paper, however, focuses specifically on how Speculative Design - and related disciplines - is currently used as an educational approach, both within directly design-related disciplines as well as in other educational domains at undergraduate, postgraduate and professional levels. While conventional design practice often focuses on making technology easy to use, functional and desirable, in Speculative Design, an educational curriculum can propose a practice that engages further with social context. It uses design as a means of examining both the potential positive and negative implications of introducing something into everyday life; imagining possible, as well as preferable situations.

The inherently discursive and reflective nature of the Speculative Design approach makes it particularly useful for teaching both practice and theory. If applied effectively within an educational setting, the processes of creating speculative objects and narratives can encourage interrogation of prevailing assumptions and invite exploration of other, alternative states of being and doing. These activities can lead to a deeper understanding of, for example, the contextual, political and cultural factors that influence the activity of design, and in turn, consideration of the potential implications and effects caused by bringing new products and services into the world (Dourish & Bell, 2014).

Educational contexts are varied, with different motivations and expectations and therefore they require different pedagogical approaches. Speculative Design has tended to sit within art and design school curricula, especially within western European universities and within the art school tradition, but this is changing. As an approach, it has become relevant where there is a focus on imagining products and services that incorporate technology, and it is now increasingly finding a place within subjects such as computer science, engineering, and social sciences. It is currently being reinvigorated and reinvented in other geographical areas, such as south-eastern Europe, and in varied types of independent research and educational institutions.

## 1.2 The SpeculativeEdu Project

The SpeculativeEdu project began in 2018, at a point where Speculative and Critical Design practices were maturing and becoming widely discussed. The project offered a timely opportunity to take stock of how the domain had developed so far and to consider where it is heading as an educational approach into the future. The SpeculativeEdu project is situated within a European context, with partners across five European countries, but as authors and project partners, we are mindful of the expanding reach of Speculative and Critical Design. The project's stated aims are to "strengthen Speculative Design education by collecting and exchanging existing knowledge and experience whilst developing new methods. Its scope is to collect, exchange, reflect upon, develop, and advance educational practice in the area of Speculative Design and its self-critical approach" (SpeculativeEdu, 2018). At a time when many designers are becoming interested in alternative design approaches, disillusioned with the conventional, dominant narratives of innovation (Morozov 2013), problem-solving (Encinas et al. 2018) and technological growth, speculative, reflective and expressive approaches are offering fresh possibilities to practitioners and educators.

It is against this backdrop that the Speculative Design interviews and education survey were conceived; in order to examine and share knowledge and practices, and to collectively work towards developing educational techniques, especially those focused on the critical relations between technology and human society.

## 1.3 The Interviews

A primary activity during the SpeculativeEdu project has been the interviewing of key figures from across the Speculative Design landscape. These figures were chosen to provide a broad a range of perspectives – established practitioners in the field, recent graduates from Speculative Design programs and critics/curators who have provided valuable interrogations of the approach. For consistency, similar questions were used across the interviews, although in many cases the questions were customised for the interviewee – based on specific projects, articles or personal experiences.

## 1.4 The Survey

The Speculative Design in European university education programmes survey was available online and open for responses from early 2019 until early 2020, available to anyone who wished to contribute. It was disseminated through the project's networks and social media and was aimed at educators involved in the development or delivery of a programme that included an element of Speculative Design or a related topic. The survey gathered examples of current teaching practices and methods from a range of design-related disciplines, as well as asking for viewpoints about the direction that the field should take in the future. The survey in particular aimed to understand the breadth and variety of current speculative educational practice across different disciplines, including modes of delivery, examples of

teaching resources and assessment strategies. The survey also asked questions about the motivations and rationales informing the development of courses, and about plans and ambitions for the future.

## 2. Analysis: Interviews

### 2.1 Interview Questions

Speculative Design is a relatively new approach and as such its borders are quite blurred, its purpose can seem vague and its systems of evaluation immature. The interviews provided an opportunity to focus on these key issues:

1. **Purpose:** This can be relatively straightforward when considering the role of mainstream design (e.g. variants of form, function, desirability, market appeal). However, Speculative Design promises a diverse range of possibility; design for debate (Dunne, 2008), to improve government processes and policymaking (Kolehmainen, 2016), to critique current design practice (Auger, 2013) and re-think the technological future (Mitrović, 2015). Such claims have, on occasion, left the approach open to critique, for example, “Where is the debate?” “Who is it between?” “What is the impact?” One of the key questions asked of the interviewees was “what is the strength of Speculative Design?” The aim being to present a more coherent definition within the lifetime of the project.
2. **Metrics:** The design community is very fluent in evaluating the various qualities of traditional designed artefacts. Countless books have been written on this subject and relate to the straightforward notions of purpose listed above, and well-known lists guide students and practitioners towards (so-called) good design (Rams, 1976). Speculative Design suffers from the fact that its purpose is still unclear – without purpose, evaluation is impossible. After examining the question of purpose, we then asked interviewees to suggest an exemplary Speculative Design project and to describe why it stands out.
3. **Value:** The first two questions potentially paint a bleak picture for Speculative Design, so what is its true potential? We asked, how could Speculative Design become more politically active or more purposeful in its aim to challenge mainstream design?

### 3.2 Interview Themes

In comparing the interviews, we have identified a number of themes that encompass the responses from the interview participants:

- **The state of design:** a discussion of ideas on what Speculative Design has accomplished by placing it in relation to a particular understanding of the status of design as an established practice within the wider contexts of business, culture and politics. This might be due to the influence of Dunne and Raby's (2013) well known "A/B List" a manifesto that positioned critical design against normative or non-critical design.
- **Existential angst:** a recurrent topic of discussion within the interviews was related to the agency and responsibilities of practicing Speculative Design. Who gets to future? What kind of privileges do speculative and critical designers enjoy? Or what does it mean to design a future for a context in which the designer does not participate?
- **Divergent references:** the materials that interviewees suggested varied greatly in terms of disciplinary background. There were references to texts belonging to politics, economics, history, literature, design and many others. The answer to the question; "what kind of knowledge should the education of a speculative designer include?" resists reduction in terms of defining a canon of suggested literature.
- **The "speculative" in Speculative Design and the "critical" in Critical Design:** most interviews involved a stage of setting the common ground between interviewer and interviewee through finding a consensus for the meaning of speculative and critical. Defining what speculative and critical mean seemed to be a necessary step in establishing the ground for further discussion on particular examples of Speculative and Critical Design.
- **The future as context:** while not specifically implied in many of the questions asked during the interviews, many participants chose to locate their arguments in a more or less distant future. This seems to be a characteristic of Speculative Design but not a necessary one because alternative presents or counterfactual stories abound in the history of Speculative Design. This is interesting because many of our respondents expressed the intentions of their designs in terms of having an impact in the here and now.

### 3. Education Survey Analysis

#### 3.1 Survey Questions

The survey was constructed in separate parts and this paper describes two of these parts; the first asked for descriptive information about educational programmes, and the second asked for further information about approaches and opinions. Each part was analysed separately in order to keep the answer data anonymous. Throughout the survey, questions

included a mixture of multiple choice and open-ended questions where respondents could write as much or as little as they wished. The open questions were analysed using a simplified thematic analysis approach. To do this, the authors each read the anonymised responses individually and then shared their own interpretations of the important emergent themes. These interpretations were then compared in order to arrive at the list of overarching themes.

### 3.1 Respondents

The Speculative Design survey was aimed primarily at European university education programmes but participation was open to everyone, including educators working outside of universities, for example delivering short courses or workshops. By early 2020, the survey had collected 36 usable responses, of these there were a mix of courses described at undergraduate and postgraduate levels, with rather more at undergraduate and some at both levels. All the courses mentioned were based in Europe, spanning 12 countries. Over half of the courses mentioned were first presented from 2018 onwards, demonstrating rapid growth in recent years. The majority of the respondents reported that their courses were situated in design disciplines, mainly in Interaction Design, Product Design and Graphic Design, including Communication Design and Information Design, along with several situated in Art disciplines. Other design fields mentioned included Interior Design and Fashion Design. Of the remaining disciplines mentioned, a few were situated in Computer Science related disciplines, and some were situated in humanities, management and interdisciplinary disciplines, such as Futures Studies.

### 3.2 Current Approaches and Future Directions

The following sections describe some of the main findings from the online survey relating to current educational approaches, opinions and future directions. One of the first questions asked about the names used to describe the approach. Of the three options provided; Speculative Design, Design Fiction and Critical Design, there was an almost even distribution across the choices. Other terms were offered, most of which included the word “design”, and “future” also appeared frequently. Other words included “research” and “debate”, and some of the descriptions included words that could be described as provocative, such as “adversarial” and “inconvenient”.

### 3.3 Rationale and Motivation

When asked about the motivations for developing the course and why Speculative Design was used, two main themes emerged, firstly the importance of multidisciplinary and interdisciplinarity in preparing students for the future, and secondly the development of a mix of both practical and critical skills. This emphasis on interdisciplinarity was seen as important in order to equip students to work and contribute to society in an as yet unknown

future. The ability to work within various industries and with a range of stakeholders was often mentioned as a priority, as these respondents put it:

“... as the world changes increasingly rapidly, we are educating future designers and other creative practitioners for jobs and contexts that don’t yet exist. They instead need to be equipped to identify and exploit new opportunities by working across disciplines and considering multiple intervention points - from hard systems transitions, such as mobility or energy, to soft systems transitions, such as culture, identity or narratives.”

“The production of near future scenarios allows to uncover new opportunities and to produce professional profiles who are able to help organizations and institutions to deal with the transformation of society, of the environment, of cities and people's daily lives.”

In terms of skills development, these can be grouped into two categories - practical and critical - which were both discussed by respondents and were seen as working in tandem in many cases. The development of practical skills included many of the pragmatic aspects that are familiar within design teaching, such as project-based skills and competencies, communication through design, the development of usable designs, research skills, lateral thinking skills, and the creative presentation of research insights. Speculative Design was also seen as a promising approach for developing criticality and systemic thinking, in particular for building the competencies and knowledge needed to address the world as it could be in the future, rather than the current status quo. Strategic, long-term thinking was seen as necessary for dealing with complexity, controversy, uncertainty, and societal, technological and cultural change. The ability to interrogate and debate, to understand relevant theoretical framings, and to reflect critically on the application of design methodologies were discussed. This comment illustrates these points:

“...the ... course proposes to read the challenges of a changing society through the controversies that animate it. The course trains students to decipher the latter via three complementary disciplines (theory of imaginaries, digital mapping of controversies and design fiction). They offer an original and unprecedented toolbox, whose instruments make it possible to locate the controversy in a field, to unfold its facets in the present while taking into account future blind spots and layers of representations inherited from the past, sedimented in the actors' discourses.”

Approaches to support this type of critical skill development included challenging current approaches by promoting values. Students are often encouraged to question ideas such as; design as need-seeking and problem-solving, and design for comfort and convenience, as expressed by this respondent:

“The course ... investigates the potential of "Inconvenient Design" as an interrogative design approach, as well as critical design tactic and practice. It addresses the trend in the design discipline to design products, interactions and services (and thus, futures) with one aim: convenience. ... Using tactics and mechanisms of Design

Fiction and Speculative Design, we explore the design of discursive objects to express criticism and initiate discussion.”

A theme of values was frequently evident in the survey responses, with a strong emphasis on social and environmental justice, and participatory citizenship. Across the survey there was evidence of a desire to go beyond the more accepted, rather passive Speculative Design aims such as; questioning stereotypical views of the future, critically reflecting on the roles of technology in society, and considering implications and consequences, and instead to take a more proactive role in shaping the future through activism. For example:

“design futures could be framed as ways to develop and deploy prompts, artefacts and narratives to critically interrogate tomorrow’s societal debates today; as such, it is intentional from the outset in its questioning of the dominant paradigm in the pursuit of preferable futures and therefore social and environmental justice.”

“This is a powerful opportunity for communities as well as for organizations and institutions, who can benefit from speculative designers in creating new strategies and to get communities engaged and involved in participatory, collaborative transformations.”

### 3.4 Teaching and Assessment

Addressing the delivery of teaching and assessment approaches, a mix of theoretical and practical elements were evident. In the multiple-choice section of the survey, the most frequently used approaches mentioned were; practical creative work, group projects, and workshops, demonstrating the emphasis on collaboration and pragmatic skills development. Theoretical essays were used to some extent, while written examinations were rarely used. Other approaches mentioned that were not directly asked about in the survey included several types of research such as social, artistic and observational research, and cultural probes. Debates were also mentioned, especially involving external actors and stakeholders.

In answer to the question on the main teaching resources used, a very wide range of materials was mentioned, echoing the findings of the interview analysis discussed in Section 2. In addition to art and design texts, and writings on Speculative Design, Critical Design and Design Fiction, there was mention of texts and examples from such diverse subjects as storytelling, comics, science-fiction, film and television, architecture, urban design, foresight and futures, social science, and many others.

There was an open section in the survey for suggesting appropriate assessment metrics for evaluating student work within a Speculative Design approach. A total of over 40 individual metrics were proposed, some of which included more than one metric bound up within them. Here these are summarised into two categories, Process and Practice:

Process Assessment Metrics:

- Depth of research

- Criticality in research documentation and analysis
- Criticality of future trajectories
- Creative engagement with alternatives
- Experimentation and risk taking
- Communication to, and engagement with, intended audience and publics
- Self-reflection and self-assessment; critical discourse around the project
- Creating potential for stakeholders to adapt in changing situations
- Enabling and stimulating debate and critical reflection
- Team working, participation
- Understanding of context

#### Practice Assessment Metrics:

- Response to the brief, and ability to serve the needs of stakeholders
- Novelty, originality, innovativeness, imagination and challenging paradigms
- Plausibility and internal consistency; social, political, technological, environmental, etc.
- Action generation, potential to stimulate impacts and consequences
- Analysis of possible impact and consequences of the designed output
- Breadth and depth of worldbuilding and storytelling
- Quality and comprehensiveness of the proposal, presentation, exhibition or demonstration
- Evidence of rationale for design or technology artefacts, prototypes or representations
- Collection of, and engagement with, feedback from audiences

### 3.5 Defining a curriculum

The survey asked a question about how important it is, within the context of a design curriculum, for Speculative Design to be either fully defined; or whether there should be an open approach relating to sets of methods, tools and techniques. The majority of respondents favoured an open or mostly open approach, but there was a substantial number of respondents who were unsure or favouring a defined approach. In the open comments, both sides were represented, citing, for example, the utility of explanations of

specific methods, but also the benefit in the diversity of approaches due to the “bottom up” and relative youth of the field. In fact, not all of the respondents answered this question which suggests that there is no consistently strong feeling over this issue, or perhaps that this is as yet an unresolved question for some educators. One respondent did indeed make the comment that they need to reflect further on this topic.

Some respondents mentioned working towards creating open source collections of their own design materials and resources. For future development, guidelines, frameworks and quality criteria addressing teaching approaches would be welcomed by some respondents, but openness and breadth of types of teaching materials were also mentioned. Briefly, some of the types of learning sources mentioned as potentially useful included; seminal films and videos, expressions of past future visions, theatre and improvisation, data tools and information visualisations.

### 3.6 Future Directions: Towards Action

Within the responses there was generally an optimistic view expressed of the development of the field as playing a transformative role in wider society, or at least training the practitioners of the future to use skills of transformation, underpinned by a methodological approach. However, there were reflections on some critical aspects of speculative practice such as lack of action, lack of political commitment, a need for decolonisation and emancipation from the current economic and socio-political system. This theme of moving towards implementing active change, for example in policy making and citizenship, in addition to the development of design skills, emerged strongly in the survey. The desire to transition toward top-level influence was clear in some of the responses, for example in urban planning and government organisations, with a stronger influence on the “real world” and impact on more mainstream practice and educational approaches. There was an awareness expressed around the limitations of showing work only in “white cube” gallery spaces, and a desire to create broader impact in society and in professions. Comments often mentioned a need to include Speculative Design methods in more curriculum subject areas such as policy making, psychology, social and anthropological studies, economics, business and management.

Finally, here is a comment from one respondent who mentioned working with younger students, demonstrating the wide potential for the approach:

“I really hope it will continue as a vibrant, diverse, pluralistic community of practice and that it won't become too much of a recipe. I'd love to see these approaches more embedded outside design education as from our experience in working with over 200 STEM oriented teenagers we've seen how hugely transformative they can be in providing them with handrails upon which to imagine, explore and question how the world should and could work.”

## 4. Conclusion

As we, the authors, look over the results of the interviews and survey, representing a substantial collection of voices in the field, it is clear to us that Speculative Design and its related approaches remain an important and evolving domain, exhibiting a desire to reflect upon its own future. This is a domain that is no longer in its infancy or led by one or two institutions; as our study demonstrates, it is a broad and diverse field and as it enters its mature phase, educators and practitioners need to come together to create a shared vocabulary, collection of best practices, methods of evaluation, and more. At the same time, as the world has changed dramatically in the past two decades, so has the role of design – as the interviews and survey demonstrate, Speculative Design today has moved beyond its early function of provoking internal debates, to a more outward looking role of facilitating urgent discussions about the central role design plays in shaping our collective futures and society as a whole. One of the most striking themes that emerged from both the interviews and surveys was the clearly articulated desire to implement transformation and to create impact on the world through action. This desire was supported by discussion around the importance of defining underpinning values, including such ideas as responsibility and justice.

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