8th International Conference on Higher Education Advances (HEAd'22)
Universitat Politècnica de València, València, 2022
DOI: http://dx.doi.org/10.4995/HEAd22.2022.14565

Anti-Disciplinary Works, Speculative Words. A Teaching Experience of Communication Design Based on Thinkering and Speculation

Francesco E. Guida, Claudia Tranti
Department of Design, Politecnico di Milano, Italy.

Abstract

This paper aims to present and discuss how the teaching of visual identity and experience design in Communication Design education may be developed within a speculative design framework. By adopting this approach, students can experience the ethics of design practice and explore alternative design values, forms, and representations. They become familiar with the idea of design as a problem-seeking and problem-finding practice, and that encourages the development of concepts, scenarios and results without any predetermined function. The development of each project is based on the principle of learning by doing, which consists of thinkering, making mistakes and trying over and over again to improve the results and acquire competencies and skills. By the analysis of selected students' work, tested design process and implications of an anti-disciplinary approach, the paper aims to inquire how such perspective may both highlight the pain points of conservative methods and the benefits of non-regulatory practices.

Keywords: *Communication Design; Speculative Design; Coding; Problem-Seeking; Teaching.*

1. Introduction

Design, by its very nature, is a discipline situated among scientific knowledge, technical expertise and art. It resembles an interdisciplinary field where people from different backgrounds work together, share their knowledge and design new things preserving their own expertise. However, designers' knowledge and culture are becoming increasingly difficult to fit into any existing academic standard. It is an anti-disciplinary field that requires a new set of values (Ito, 2016) in terms of knowledge, culture and expertise (soft and hard skills). In addition, it is possible to witness a clear switch from the centrality of function to the centrality of meaning (Antonelli, 2011a): this change conveys the idea that design, far from being a mere problem-solving framework, can also be a tool for exploration and questioning.

Over the last eight-nine years, these premises have inspired the teaching method and the assignments of a Communication Design Studio (Bachelor in Communication Design). The students are prompted to work on visual and experience design related to thought-provoking themes, such as human conditions or emotions. 'Death' is the theme that has been analysed and developed during the 2019–2020 course, which is presented in the following pages. Regarding the theme as an opportunity, the task is to design interactive experiential devices (defined as 'Communicative Machines') in a critical and speculative framework.

The students, who work in small teams composed of five or six members, learn to cross disciplinary borders and adopt a critical approach. Trigg's (2003) statement on experimentation is incredibly fitting: a means to find solutions, even in areas that teachers, professionals or students do not master confidently. That's also valid for the 'learning by doing' approach, the method that the students are required to adopt for building prototypes. While developing their projects, students experience something close to the definition of thinkering (Antonelli, 2011b), according to which results can be only obtained through progressive and collective reworks. As a consequence, the discussed didactic approach does not aim to reassure students with fixed notions. Its goal is rather to unsettle them, providing a set of tools by which they can deal with uncertainties and come up with their design outcomes based on the context they're working in.

2. Analogies and interactions between technology and speculative design

The use of code and digital prototyping is encouraged and the integration of the computational and physical world is highly appreciated, although there is no mandatory technology to be used: framing a design problem by choosing "material, medium or method first [...] might limit [...] possible solutions" (Evans, 2009). On the other hand, coding and other digital technologies are languages that designers need to learn and use in a proactive

and consistent way. Undergraduate students usually regard coding as a sector-specific, obscure practice.

Bringing code within their toolkit enables students to learn "procedural literacy" and no longer regard the computer as a mysterious "black box" (Crow, 2008). They regain control of the technology. In the professional context as well, computational design is misunderstood as a technical skill instead of being regarded as a way of thinking. In a teaching context, an approach that does not consider the acquisition of skills and knowledge as separated fragments, but as an evolutionary process, appears to be more effective. The students are encouraged to use programming (Processing, p5.js, Three.js), electronics and embedded programming with the Arduino ecosystem and digital fabrication to start processes and develop applications (Lehni, 2011).

This variety of possible media and tools finds a breeding ground in Speculative Design, which does not exclusively belong to the design area or a fixed method, but is open to various approaches, tools, techniques and instruments as well as other practices and disciplines (Mitrović, 2019). According to Lukens & DiSalvo (2012), "speculative design and technological fluency are cross-disciplinary and integrative". The term "fluency" can here be interpreted as the "ability to translate between domains and view the membranes separating areas of inquiry as porous" (Lukens & DiSalvo, 2012).

3. An anti-disciplinary design process

According to the belief that design is a tool to create ideas – not only things – students are involved in a process that moves from problem-solving to problem-seeking and problem-finding, encouraging the development of concepts, scenarios and results, without any predetermined function, aesthetic or, as mentioned above, boundaries in the use of technology. The process is based on an anti-disciplinary and evolutionary idea of the educational design process, which doesn't rely on a fixed design method. "[...] When designers decide which method to use [...], they also perceive the design problem in a certain way. The method (whether Agile or User-Centred Design or Activity Based Design) blinds the designer to some aspects and it highlights others" (Evans, 2009). The applied methodology can be visualised as a spiral model (Dubberly, 2005), that accurately represents repeating cycles of design moving away from a central starting point (Figure 1). In each of the four main phases, students experience different steps in the design process, as they gradually approach their final project.

Once the general theme is given (e.g. 'death'), each group has to define a specific point of view and a concept to work on: so they have to seek and find a problem to highlight and discuss. They can use human superstructures and organisations as useful subjects to 'represent' their fiction. According to Blauvelt & Davis (1997), a "critical pedagogical

strategy that emphasizes alternative approaches to conventional problem-solving paradigms would include both problem-seeking initiatives and problem-posing inquiries". The second step is to define a communication strategy and how to develop it in a multidimensional and multichannel dimension (touchpoints and selected media), as well as the communicative machine (the interactive installation) main functions, meanings and contents. According to their concept and strategy, they have to think and design a visual identity that can be consistently communicated in two and three-dimensional outputs. By doing so, the students gain confidence in the design of complex systems.

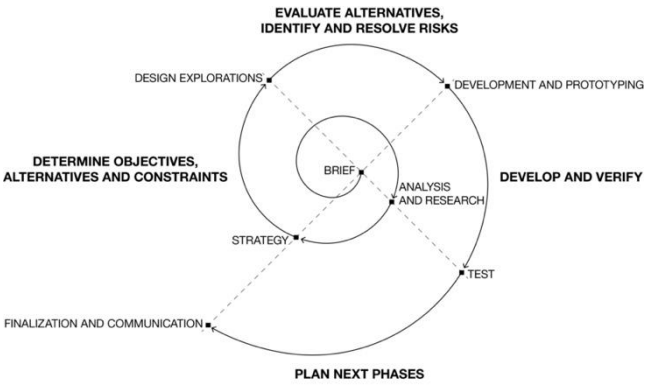

Figure 1. The spiral model of the applied methodology.

Only a few steps are mandatory and deadlines are not given beforehand so that the students learn to move autonomously towards a final result by testing concepts and outputs. The core activity is the prototyping phase, which involves both digital and analog areas. The groups are not strictly organised by distributing students' skills or interests. They are rather encouraged to autonomously acquire the skills they lack – especially for what may concern the areas of digital design, coding and prototyping. They are eventually supported by the teachers to better develop their projects. A crucial element of this "critical pedagogy is the recognition, not the dismissal, of students' social experiences and cultural affiliations, which serve as lenses through which they experience the world and are a reflection of the audiences we attempt to reach" (Blauvelt & Davis, 1997). The main outputs are 'Communication Machines': objects, installations or interactive devices that must be prototyped in order to be verified and tested. Those 'Machines' are intended as "object personas": an extension of the design research and educational process that regards design fiction as an important methodological tool. Design fiction represents a speculative mode of thinking that can disclose new questions and unconventional opportunities (Cila et al., 2015).

4. Speculative Communicative Machines

The experimental projects that are going to be presented aim to "unsettle the present rather than predict the future" (Clark, 2011) and to use design in an active way (Dunne & Raby, 2013). As Peace (2019) asserts "a work of speculative design is often an object […]. While prototyping deals with how an idea could be realized, speculative design asks what if that idea was prevalent in our society? Would we want it?".

Figure 2. Micromort stock exchange monolith (2020).

The first project, named *Micromort* (Figure 2), is a fictional currency connecting nationality and the value of death. The project intends to emphasise the fact that death always has a different social value depending on where it occurred or who has been involved. The critical and political position behind the project is that this value depends on how the western world perceives itself. The speculation is materialised into a 'stock exchange monolith'. Thanks to an algorithm (Hades 2.0) that considers the GDP per capita, the population and the number of violent deaths of each state in the period between 2000 and 2017, *Micromort* calculates the price of every single death worldwide. More than 21.000 real data items have been collected from public databases. The consistency of the Communication Machine design (the monolith), the data visualisation and the user interaction/interface reveal the critical position of the students.

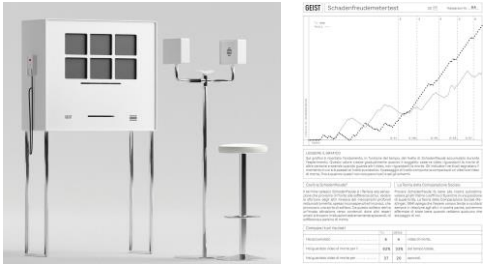

Figure 3. The Schadenfreude test machine and the final output printed (2020).

Geist (Gedankliches Experimentelles Institut für Spezielle Therapien, Experimental Institute of Thought for Special Therapies) (Figure 3) is a fictional scientific research centre that studies unknown aspects of the human mind as the *Schadenfreude*, the pleasure caused by

others' bad luck or death. A fictional test (named *Schadenfreudemetertest*) forces the users to simultaneously watch six videos of real-life events, including deaths and killings. The machine is equipped with an Eye Tracker that follows the movements of the user's gaze, analysing how long people focus on each video. Another essential part is the headrest, equipped with two blinkers with integrated speakers that play the audio and also constrain the users' movements while watching the videos. At the end of the experiment, the Eye Tracker's collected data are processed by customised software that prints a report. The graph represents the trend of the user's *Schadenfreude* level. The whole experience aims to reflect on human morbid curiosity about death, which tends to be emphasised by media and social channels, through fiction with several communicative levels: a consistent visual identity inspired by Dieter Rams' design for Braun, which has been developed both in 2 and 3 dimensions; the accurate selection of videos, a strong contemporary medium, showing well-known events; the final data visualisation.

Figure 4 – The Kaluma jewels (2020).

In the case of *Kaluma - Le forme del lutto* (*The Forms of Mourning*) (Figure 4), the speculation has been developed on three communicative levels: the naming, a collection of three jewels and a promotional campaign. The aim is to address the modern Western habit to hide the pain following a significant loss – such as the death of a loved one – under a social mask of fake serenity. In contemporary metropolitan contexts, there has been a progressive loss of social conventions such as wearing black pins, bands or veils as a communicative act of showing mourning and sharing it with the community. *Kaluma* aims to let the users discuss this condition and give a public display of their mourning. The promotional campaign defines a narrative discourse through photos and videos, by capturing moments of everyday life, during which the deepest and most sincere feelings and pains emerge thanks to the use of the three jewels. Mourning affects everyone, as the images candidly show, connecting young and elderly people.

The last one, *Deposito Cinerario Italiano (Italian Cinerary Depot)* (Figure 5), aims to underline how Italian laws regarding the disposal of the body after its death are limited and influenced by the dominant religious traditions. In Italy, deceased citizens must be placed in cemeteries or established places following strict regulations and standard methods: burial,

inhumation or cremation. There are no other viable solutions: religions other than Catholicism are excluded. For instance, Muslim communities are often forced to repatriate the bodies of loved ones to the country of origin, although they are registered as Italian citizens. This scenario inspired the critical position for *Deposito Cinerario Italiano*, where the user is pushed to act as an agent for a collective burial, where all deceased are equals and indistinct.

Figure 5. Deposito Cinerario Italiano (2020).

5. Conclusions

The four discussed projects interpret the main theme of 'death' starting from diverse points of view, developing different scenarios and using various technologies and media. The speculations and the critical stances are actively translated by using Communication Design. By assuming a Speculative and Critical Design approach, the students could experience the ethics of design practice. They could try to unveil unconventional approaches to the project and explore alternative design values, forms, and representations (Johannessen, 2017; Bardzell & Bardzell, 2013). The anti-disciplinary methodology pushes them to experiment with visual expressions, user experiences and tangible interactions between two and three dimensions, inevitably involving the fourth one: time.

As shown above, they range among many techniques and technologies, from analog to digital ones. A natural consequence of this didactic approach is that each design has to be theoretically discussed and physically tested by making prototypes. It is our firm belief that this way of working and designing should be encouraged, especially in educational contexts, to enable a more consistent and appropriate use of digital tools and to encourage students to adopt a critical approach to design practices.

References

Antonelli, P. (2011[a]). Talk to me. In Hall, E. (Ed.), *Talk to me. Design and communication between people and objects* (pp. 6-16). New York: Museum of Modern Art.

Antonelli, P. (2011[b]) States of Design 03: Thinkering. *Domus*. Retrieved February 10, 2022, from http://www.domusweb.it/it/design/2011/07/04/states-of-design-03-thinkering.html.

Bardzell, J., & Bardzell, S. (2013). What is critical about critical design?. *Proceedings of the SIGCHI conference on human factors in computing systems* (pp. 3297-3306). ACM.

Blauvelt, A., & Davis, M. (1997). Building bridges: a research agenda for education and practice. In Beirut, M., Drenttel, W., Heller, S., Holland, DK (Eds.). *Looking Closer 2* (pp. 77-81). New York: Allworth Press.

Cila, N., Giaccardi, E., Tynan-O'Mahony, F., Speed, C., and Caldwell, M. (2015). Thing-Centered Narratives: A study of object personas. *3rd Seminar Research Network for Design Anthropology*. Aarhus: The Research Network for Design Anthropology.

Clark, S. R. L. (2011). *Philosophical Futures*. Frankfurt am Main: Peter Lang.

Crow, D. (2008). Magic box: craft and the computer. *Eye, 70* (18). Retrieved February 10, 2022, from http://www.eyemagazine.com/feature/article/magic-box-craft-and-the-computer.

Dubberly, H. (2005). *How do you design? A compendium of models*. San Francisco: Dubberly Design Office. Retrieved February 5, 2022, from http://www.dubberly.com/wp-content/uploads/2008/06/ddo_designprocess.pdf.

Dunne, A., & Raby, F. (2013). *Speculative everything. Design, fiction, and social dreaming*. Cambridge (MA): MIT Press.

Evans, W. (2009). *Designing ideation: don't be a tool. How tools define our creative output*. Retrieved February 10, 2020, from http://johnnyholland.org/2009/03/designing-ideation-dont-be-a-tool.

Ito, J. (2016). Design and Science. Can design advance science, and can science advance design?. *Journal of Design and Science, 1*. Retrieved February 10, 2022, from https://doi.org/10.21428/f4c68887.

Johannessen, L. K. (2017). The young designer's guide to speculative and critical design. Retrieved February 5, 2022, from https://www.ntnu.edu/documents/139799/1279149990/16+TPD4505.leon.johannessen.pdf/1c9221a2-2f1b-42fe-ba1f-24bb681be0cd.

Lehni, J. (2011). Teaching in the spaces between code and design. *Eye, 81* (20). Retrieved February 10, 2022, from http://www.eyemagazine.com/feature/article/teaching-in-the-spaces-between-code-and-design.

Lukens, J., & DiSalvo, C. (2012). Speculative Design and Technological Fluency. *International Journal of Learning and Media, 3* (4). Cambridge, MA: Massachusetts Institute of Technology.

Mitrovič, I. (2019). *New Reflections on Speculativity*. Retrieved February 10, 2022, from https://speculativeedu.eu/new-reflections-on-speculativity.

Peace, E. (2019). *Speculative design for the real world. How speculative design methods can drive innovation*. Retrieved February 5, 2022, from https://uxdesign.cc/speculative-design-for-the-real-world-551130b22827.

Triggs, T. (2003). *The typographic experiment: radical innovation in contemporary type design*. London: Thames & Hudson.