

Research  
& Education  
in Design  
**Conference'22**

Proximity

**Abstracts**

**May,  
19 — 20**

Lisbon School of Architecture, Lisbon, Portugal

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# contents

| page | sessions | theme                           |
|------|----------|---------------------------------|
| 4    | 1.1      | DESIGN STUDIO                   |
| 7    | 1.2      | CONTRIBUTIONS TO INDUSTRY       |
| 11   | 1.3      | FUTURE-ORIENTED EDUCATION       |
| 14   | 1.4      | DESIGN FOR INCLUSION AND CARE   |
| 18   | 2.1      | DESIGN AND PHILOSOPHY           |
| 21   | 2.2      | DESIGN ADJENCIES                |
| 24   | 2.3      | DESIGN EDUCATION PANORAMA 1     |
| 27   | 2.4      | DESIGN FOR SOCIAL CHANGE        |
| 30   | 2.5      | MATERIAL-DRIVEN EDUCATION       |
| 33   | 3.1      | DESIGN EDUCATION PANORAMA 2     |
| 36   | 3.2      | CONNECTING DESIGN AND TERRITORY |
| 39   | 3.3      | RESEARCH APPROACHES             |
| 42   | 4.1      | DESIGN TEACHING                 |
| 46   | 4.2      | DESIGN EDUCATION PANORAMA 3     |

## Investigating the means utilized by the supporting staff in design studio courses: An interview study

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The teaching and learning activities are grounded on the studio education. The pedagogical dynamics of design studio education is also related to the social learning theories stemming from the dialogue between the interaction of teachers and students. When we deep dive into these participants, we can come across the supporting staff taking part in the design studio courses. They are actively involved in the pedagogical practice which has a direct influence on design students' learning processes. More specifically supporting staff in Turkey, called research assistants, are influential players of the education system and have a great responsibility in design studio education. Their pedagogical impacts on students' learning process are crucial but neglected in design literature. To understand their pedagogical means in design studio education, an interview study was conducted with twenty-six volunteer research assistants. The findings show that various means can be preferred and utilized by supporting staff in the design studio for different purposes. As descriptive research, this paper discusses the means in a pedagogical manner.

**KEYWORDS** . Design education, Design Studio Course, Supporting Staff, Research Assistant, Scaffolding Means.

## **Assessments in the design studio: self-reflecting on MDD (AUAS) methods**

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This paper discusses challenges in assessing design students within studio model education. It reflects on the assessment methods used in the M.Sc. Digital Design, Amsterdam University of Applied Sciences, with input from an online survey targeting former students and assessors of the programme. Building on the particularities they see in this assessment process and its perceived advantages and disadvantages; we reflect on the extent to which these methods respond to the intentions for their development. Lastly, we discuss these issues in relation to the literature with the purpose of providing input to others that, like us, are in search of improved assessment tools for studio-based education.

**KEYWORDS** . Design Education, Assessments, Rubrics, Design Studio, Reflection

## **From critical friendship to design critique friendship: Disclosing the mechanisms of informal design critique within a design studio course**

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This study investigates informal peer-critique, mainly focusing on the mechanisms of the process and the varying platforms that design students utilize. It aims at providing a preliminary understanding of the peer-critiquing process by highlighting various aspects during its execution. To achieve this, an empirical study was conducted that consisted of two stages: observing the design studio classes and jury reviews of third-year design students, and carrying out semi-structured interviews with students who were volunteers to share their peer-critiquing experiences. The empirical data was analysed by addressing two types of informal peer-critique: instant peer-critique and planned peer-critique. The analysis is framed by focusing on three important aspects: design phases in which informal peer-critique occurs, basic steps of informal peer-critique, and peers' activities during informal peer-critiquing processes. By presenting the data by referring to these points, an introductory description of the informal peer-critiquing process is offered.

**KEYWORDS .** Peer-critique, Peer-dialogue, Critical Friendship, Design Studio.

## **Virtual proximity in the factory processes: designing interfaces between industrial equipment and human operators**

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The paradigm of Industry 4.0 is increasingly permeating the way people work, live and interact with others. In the context of smart factories, industrial machines are increasingly intelligent and automated, but human oversight in the industrial processes remains crucial and requires highly skilled personnel executing quick and precise interventions on the production line. Nevertheless, communication with factory machines still relies hardly comprehensible codes on interfaces that follow the traditional Window-Icon-Menu-Pointer model. Through research based on surveys and field observations, this study aims to analyse the state of the art of human-machine interfaces, user behaviour and communication processes in a smart factory. Presenting a case study, this contribution offers a report on an experimental research project carried out through a design thinking approach applied in an Industry 4.0 environment. This paper contributes to the ongoing discussion about the possible future of human-centric interfaces in the industrial workplace, as well as the role of user-centred design in building experiences that go beyond conventional screen-based interactions.

**KEYWORDS** . Industry 4.0, Internet of Things, Human-machine Interaction, Cognitive Ergonomics.

## **Label and Packaging Design for Sustainability Checklist. A tailored tool for graphic design students and designers, co-designed by all stakeholders across the workflows**

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The proposal of this checklist takes place in the context of graphic design education and the need to deepen good practices, more consequential, in design for sustainability. The idea of a checklist arises from the need for practical, concrete tools that students, designers and companies can use more easily and with more tangible and immediate results. We believe that the local and regional reality favours this type of intervention, as well as the current reality and needs of Europe and the world. The area of labels and packaging was chosen for its continuous and growing importance and impact on production, consumption and its effects on the use of resources and waste creation. Methodologies used in the development and evaluation of this list are interventionist and collaborative, involving a large number of stakeholders in education, production and consumption chains. The literature review is complemented with contributions of those stakeholders, collected through focus groups, interviews and individual questionnaires, conferences, debates and study visits. The results, in continuous improvement, show a plural list, but focused on graphic design, on the designers' core competences, on the parsimonious management of space, complemented with the most relevant technical issues related to materials and production processes.

**KEYWORDS** . Graphic Design, Graphic Production, Labels and Packaging, Sustainability, Education

## **Ready-to-(dis)assemble: experimentations on elastic joinery for engaging and environmentally friendly furniture**

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Joints are crucial for the pieces of furniture, especially for those that need to be assembled by users. Nowadays, the field of ready-to-assemble furniture is mainly composed of products that require tools and fastening means for assembly. These elements, typically made of metal or plastic, could be responsible for issues on the environment, user experience and product performance. The development and the diffusion of CNC technologies offer new opportunities in this context. Thanks to them it is now possible to produce completely new shapes, previously unthinkable, and thus develop a new type of stereotomy no longer based on planar surfaces and sharp edges but on the smoothness of the surfaces. The present research aims to exploit the new technologies and the elasticity of wood to develop new types of joints for ready-to-assemble furniture easily and quickly assemblable without tools and accessories, feasible with numerical control milling machines and characterized by low environmental impact.

**KEYWORDS** : Sustainability, Woodworking, Digital Fabrication, Joint, Circular Economy

## Textile Design: a transdisciplinary approach in higher education in Portugal

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This exploratory study aims to reflect on the importance of a transdisciplinary approach in the creation of textile products. The textile industry is one of the most polluting industries in the world. Therefore, there is a need to rethink the way textile products are designed from the initial stage to their relationship with the consumer. The role of academia in close collaboration with industry needs to be enhanced to provide textile designers with skills and knowledge in finding solutions to complex problems related to the sustainability of the planet and human beings. A non-interventionist investigation was conducted using literature review and surveys, interconnecting and crossing the different research topics. The goal was to reflect on possible ways to bring industry and academia to understand the importance of a transdisciplinary vision in the training of future textile designers. The paper concludes that with the evolution of the textile industry it is expected to be able to work with skills in the fields of sustainability, circular economy and society, and that a transdisciplinary approach can be a path to follow to ensure the social and environmental well-being of human beings and the planet in a close dialogue between industry and academia.

**KEYWORDS .** Textile Design, Higher Education, Transdisciplinary, Textile and Clothing Industry, Complex Problems

## Food Design Education: Design for Food or Food for Design? Different approaches to designing a change for our food systems

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Our research proposes analysing, defining, and creating the food designer profile through the experience in two educational institutions. As a field of study, food design is new, especially in academia, and needs a more explicit definition to frame a profile for these future professionals to act and work in food systems. For the last twenty years, we have been watching designers and chefs under the concept of Food Design, but always without specialized educational programme in this new field. In addition, we have been observing the raising of speculative and ephemeral projects related to food. We face a problem in the society, especially with the consumers, who do not know what a food designer is and what role is playing in the food systems. So, how can we define and devise a professional profile for this new territory to create future positions for students in the food industry and gastronomy? We create a main character encompassing these fields through a literature review around the concept of food design to envision the profile of the future food designer. In ESHTe, we propose an approach to food design from gastronomy since this institution has a long tradition in tourism, hospitality and gastronomy. On the other side, ELISAVA offers a pathway from the field of design to food. How can these two approaches achieve the same aim and create professionals to impact and change the current food systems? Our methodology presents three projects created in each institution and a survey to specialists in the field to clarify some questions about what people think a food designer is. Our main conclusions are, besides the approach of food for design or design for food, the profile for a food designer demands knowledge from both areas. This approach is the only way to create future professionals who could act to change the industry and gastronomy to create awareness about the problems we are facing related to food systems.

**KEYWORDS .** Food Design, Design, Food, Food Designer, Education

## Exploring Student Perceptions of Product-Service Systems

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It is important that Product Design students understand the scope of sustainable design. The purpose of this study is to pilot the introduction of Product-Service System (PSS) Design to undergraduate students in Industrial Product Design. The study aims to test students' perception of how the product design field is evolving to embrace sustainable approaches addressing the needs of less privileged communities. This paper highlights how the transformation from product design to product-service system design is understood by students and how it can count towards sustainability and be preferred over product design. The advantages of a product-service system over the design of products alone can be backed by the concept of sustainability when contextual factors such as cultural and economic factors are being considered. PSS was received to be an appropriate solution by providing job creation in communities, reduction of consumerism, and at the same time perceived to challenge the concept of ownership of products and services.

**KEYWORDS .** Product-Service System (PSS), Sustainable Design Education, Sustainability Perception

## Designing The Proximity. Temporary exhibition of a research projects' constellation

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Could be possible reframing new contemporary constellations based on new declinations of Proximity? City is a multifaceted entity and a dense structure at the same time, including tangled nets of dynamic and self-organising systems at different administrative, political and technological scales, for the creation of more sustainable futures. While we are experiencing the Covid-19 pandemic in the world, we ask ourselves about many aspects of our lives and above all we ask ourselves if some behaviors and habits will remain the same as in the past or will undergo transformations. The intention is also "to create a new relationship between citizens and the rhythms of their cities, to reconnect them with the areas that are closest to them" (Bontje, 2019). In this panorama, the principal aim is to imagine future scenarios for our cities, for a different use of public spaces, more inclusive, which responds to the needs and desires of different urban populations: children, elderly, animals, non-human agents, etc. For this reason, this paper explores the subject of proximity designing through an exhibition of 30 projects by the students of the xxx of the xxx, who offer different declinations of the term divided in fifteen keywords.

**KEYWORDS .** Proximity, Inclusion, Future Scenarios, Public Spaces, Design Knowledge

## **A Case Study of Design-Lead Social Entrepreneurship: Service Design Startup to Teach Digital Technology to Seniors During the COVID-19 Pandemic**

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How does design enable people to overcome distances, such as physical remoteness, differences in domain, and generational gap? This has become a significant question, especially in the age of COVID-19 when digital technology and designed interfaces have risen as the key mediator that connects people while maintaining social distance. This paper explores the challenges and opportunities of proximity in twofold. First, we present a case study of Klari, a design-driven startup, where service design thinking and method enabled redefining the boundaries of design and business. Second, Klari provides a remote service to support seniors in learning digital technology during the pandemic. Seniors face unique barriers to sustained technology use in their everyday lives, and the technology divide between generations has further accelerated during the pandemic. We present the design process, challenges, and discussions of a case study of how design thinking can lead to the strategic and practical development of social entrepreneurship to bridge these gaps. The iterative design process, which included multiple user research and prototyping, provided the flexibility to create solutions for the ambiguous boundaries to entrepreneurship engendered by COVID-19.

**KEYWORDS** . Service Design, Design-driven Entrepreneurship, Design for Social Entrepreneurship, Design for Older Adults, Design and COVID-19 Pandemic

## **Determination of effective typeface and letterforms in special education based on special education teachers' opinions**

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This research was conducted to determine what kind of typeface and letterform design are more effective in the reading and learning processes of special education students, according to the opinions of special education teachers. The research objective is to contribute to the literature and the field of educational design by determining which type of letterforms are effective in special education by using the empirical experiences of teachers. Since special education students have diverse types of developmental disorders, proximo differs according to the developmental disorders of the students. Although the positive benefits of using computer-based programs in special education are reported, there is no common result in the general literature about which font should be used in reading education for both students with and without disabilities. Due to the deficiencies in the literature, it was tried to reveal current information by using the experiences of eighty-five special education teachers from Turkish and English language via survey. It was aimed to identify which type of typeface (font) or letterforms create positive or negative learning performance on special education students in the survey. The study includes a non-interventionist methodology and quantitative methods for the analysis of the results. The result showed that the design of the letterforms is an essential element for the learning to read process for students who need special education, according to the special education experts. Even if teachers believe the differentiated the similar letterforms in the reading education have a positive result and essential, they prefer to use a clear typeface like familiarity with the fonts the student encounters in their social life.

**KEYWORDS** . Design, Education, Learning to Read, Typeface, Special Education

## **Integrating Care Practice into Product Design Education: Insights into Care-giving Behaviour, Design and Sustainability**

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Care has a key role in providing opportunities for the transition to a better future: facilitating care practice in design thus offers the potential for enabling this future. The concept of care in product design has been increasingly discussed in design literature, and can potentially be integrated into design education. Adopting the concept of care offers a space for design students to make sense of complex relations and dynamics that are inherent in the real world, to frame problems responsibly, facilitate caring behaviour, and re-establish an ethical dimension for the discipline. This paper describes an assignment involving design for sustainable behaviour in Master's and BA Product Design courses. The purpose of the assignment was to use a toolkit to explore and develop product design in ways which would prompt caring behaviour in users. Three student projects were analysed as a case study, followed by interviews to identify the insights gained from this process and for students to articulate their views. These insights emphasise the value of care practice as an aspect of sustainable behaviour, and how it can be used in product design education to teach sustainability principles.

**KEYWORDS** . Care Practice, Product Design, Design for Sustainable Behaviour, Design Education, Sustainability

## **Photovoice and research with children in Design and Architecture - Proximity between researchers and research subjects**

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The paper presents a participatory research action with children from Greater Lisbon (Portugal), by means of a photovoice process. It aims to discuss the use of this tool, fostering proximity between researchers and research subjects, in our case children living in urban margins, for data collection in the context of authors' doctoral research in Design and Architecture. We describe here the way proximity emerged over the photovoice process implemented, intending to outline how the proximity and collaboration between researchers and research subjects in these fields are urgent and constitute an opportunity for the production of a different knowledge about urban margins, in order to (re) think them and to contribute to new approaches of intervention leading to the construction of more just and inclusive cities.

**KEYWORDS** . Design and Architecture, Participatory Action-research, Photovoice, Childhood, Urban Margins

## **New design knowledge for a new philosophical thinking. A speculation on the concept of proximity as a lens for critical thinking in creative education**

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The act of "designing" is by definition an activity that implies mediated proximity. Either at the scale of an object, or at city scale, the creative leaders have to balance the project with the relations it generates. The present paper starts from the understanding of the discipline in a wide perspective, as a creative practice, and proposes an investigation of the proximity in the context of the contemporary society, in which overexposure and closeness empty the creative practices of their meaning (Han, 2020). In order to argument this assumption we will first introduce the concept of transparency society in the view of the Korean / German philosopher Byung – Chul Han. We will then use it as a lens to analyse several relational art and creative installations that question the transformation of the body and question the dynamics of control, power and ownership in the urban public spaces. In the discussion we will show how the overlap of the philosophical reasoning and the output oriented design approach generate new meanings that help us to understand proximity as a term that includes, re-defines and gives new qualities to distances in an overexposed society. In conclusion we outline the overlap between a reflective, philosophical stance and the practical design approach to proximity as a potential domain for creative research and education.

**KEYWORDS :** New Philosophy, New Design, Proximity, Transparency, Critical Thinking, Leadership

## A Disciplined Approach to Abstraction

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Abstraction is ubiquitous throughout architectural education and practice. "Form is no longer the outcome of individual craft, but the result of a socialized 'intellectual' knowledge made of abstract conventions – such as the use of projections and precise systems of measurement." (Aureli 2015) In architecture especially, abstraction is inextricably entangled with the real. Abstraction is also a nearly universal phenomenon in architectural education, especially at the beginning design levels, with highly mixed outcomes, and often very little critical understanding. Linguistically, it is a self-defeating term. This is because the moment abstraction becomes the singular objective of a project, it stops being possible. By definition, for something to be abstract, it requires an idea or concept separate from itself to reference. Without external reference, it creates an irreconcilable circular logic as something cannot be an abstraction of itself. This is why it makes no sense when someone says that something "looks abstract." Yet, this is a common phrase uttered by students, academics, and practitioners alike. So, what is it to be abstract in a design process? Can it be used critically, objectively, and rigorously in a measured and disciplined way? Does abstraction have instrumentality that other more figural or literal representations don't? Is it disciplinary, or is it a modernist vanity of architectural academia? Abstraction is fundamentally necessary for interpretation. Our students cannot think critically without challenging what they think they know and interpreting it in new ways. But, this is a thoughtful process, not absent-minded practice. It privileges choice, and prioritization in design, not baseless form-making. Effective abstraction, especially at the beginning design level, requires strategy and disciplinarity. We must look no further than the subtitle of this section for an example of a disciplined use of abstraction. The abstract of a paper is a distillation of content. It removes supporting evidence, observational notes, contextual analyses, or anything else that might be extraneous to the singular objective of the paper. That doesn't make it less true, nor less real. It makes it more focused. This is disciplined abstraction. Perhaps abstraction isn't the problem. Maybe misunderstanding it is. Additionally, this paper presents common uses and abuses of abstraction in the design studio. It also seeks to present pedagogical strategies for abstraction to play a critical and instrumental role in beginning design education.

**KEYWORDS** . Beginning Design Student, Abstraction, Space Making

## Amplified experience through temporal proximity

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In the following paper the authors argue for a reframing of designed experience through the metaphor of temporal proximity. Rather than seeing happenings, participations, or experiences as solo endeavors, the present investigation asks the designer to be attentive to the ubiquitous and essential pairing of self with an-other for any actual inter-action to occur. Interactions framed as pairings can then be critiqued for proximity; not only spatial proximity but also temporal proximity, that is, the fidelity of entrainment shared between engaged parties. Of special note to this investigation is the potential for amplified experience when deeply entrained pairings are successful, and an exploration of the ontological difference between the objective data point notable in spatial proximity vs. the subjective experience of shared temporally unfolding entrainment.

**KEYWORDS** . Enkinaesthesia, Experience, Embodiment, HCI, Temporality, Proximity

## Urban design project-based teaching: the UQAM Praxis III lab approach

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The professional urban planning program at Université du Québec à Montréal was founded in 1976. From 1993 to 2007, a program based on learning the theoretical and practical notions of urbanism was developed around the Praxis studios. The objective is to study the pedagogical approach of the project organized throughout the whole academic year. The questions are as follows: In what context is the project developed? What is the content and what methods are used in the design approach? What are the results? Ten recommendations for enhancing urban design teaching and learning are used to answer these queries.

**KEYWORDS** . Urban Design, Education, Process, Montreal, Canada

## The New 'Fado' of the Students: Proximity Between Utopia and Architecture Education

Inês Nascimento

ISCTE-IUL

The Academy is in crisis, and the reflection for its repositioning refers to the urgency of a paradigm shift. Today, the unexpected (re)emergence of counterculture practices in Portugal, raises the doubt that Architecture education may not be fulfilling its mission. Through the analysis of ancient processes of reflection and action on the city and society, and to read its contaminations, this critical essay recalls the importance of utopian thinking, as a driving agent for change, and the practice of radical pedagogies, as a response to the new social desire. In an attempt to recognize the power of these mechanisms – utopian thinking and radical pedagogies in Architecture education – historical facts that marked both Portugal and the world are here described through the proximity between concepts – such as revolution, people, and radical thinking – and agents – such as schools, students, and education –, who shared utopia as the main actor on the stage of social change. Alarming, today's contemporary utopianism, although real and teachable, remains far from the Portuguese academic curriculum. The lack of this methodology and these practices in the Portuguese Architecture courses, makes SAAL almost a unique example in the Portuguese context, alarming us to the urgency of its rescue.

**KEYWORDS .** Revolution, Utopia, Architectural Education, Radical Pedagogies, SAAL

## Design Thinking and the Proximity Argument — The Case Study of Engineering Students at a Portuguese University

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With the raising of Design Thinking popularity and the market asking increasingly for engineers able to engage in creative problem solving, Design Thinking is being progressively incorporated into engineering curricula. However, from our own experience and from what has been reported by other authors, Design Thinking can be easily compromised when some of its core elements are left out of consideration. Prompted by the conference theme, we set ourselves the challenge to explore Proximity issues frequently occurring in the process of teaching and learning Design Thinking. Playing with different meanings of the word, we coin and describe four possible Proximity issues: Contiguity, Immediacy, Inability to Zoom Out and Closure. The presented case study context is a Design Thinking Module lectured to engineering students from a Portuguese University. Students' perceptions regarding the four Proximity issues were indirectly collected through an online questionnaire, complemented by content analysis of students' essays. Results from two Classes attending the Module confirm at this stage these four Proximity questions effectively exist when teaching Design Thinking to engineering students, requiring special attention from educators. In further stages it is intended to expand this analysis to include a larger number of students and to explore possible strategies to prevent and/or overcome Proximity issues.

**KEYWORDS** . Design Thinking, Problem Framing and Solving, Engineering Students, Proximity

## Supporting the understanding of complex concepts through play situations

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The aim of this paper is to show that atmospheres of play situations can elicit different and potentially productive proximities for students when teaching in complex concepts. Through a design-based research project, drawing on a design experiment conducted in higher education, this paper proposes, that experiencing practice dimensions of a complex concept, through being in the atmospheres of a commonly known play situation, can potentially transform and make way for a positive and experientially scaffolded reflective atmosphere, to support students' reflections and understanding of complex concepts in teaching situations.

**KEYWORDS .** Play, Playful Learning, Atmosphere, Higher Education, Proximity

## Proximity of theory and practice: framing a research-through-design experience for design students

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With the objective of cultivating a research approach early on during design education, this paper reports on a case study to find out how the development of research skills in design students through project-based learning can be supported. Moreover, it seeks to investigate the effectiveness of datasheet templates based on the designerly activity theory (d.AT) model in supporting, collecting and interpreting data within a research-through-design approach. The design students participating in the study were guided to act as designer-researchers during the 14-week research project. Collaboratively they collected data regularly on their own design process using the provided template. Twenty-two filled templates were analyzed and interpreted in two ways: by the students themselves which identified the proximity between the evolution of their design project and design process; and by the researchers who presented the proximity of exploratory, generative, and evaluative research. The results show, on the one hand, the research attitude, implication, and interest of students in becoming reflective designer-researchers. On the other, it underlines the usefulness of the d.AT template for collecting data collaboratively during the RtD project and interpreting data in different ways.

**KEYWORDS** . Design process, Designer-researcher, Designerly Activity Theory, Research-through-design, Design Education

## Small group and its size

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Use of a small group of people to complete a task is a commonplace phenomenon. Size of the group depends on different factors. Given a particular task, however, where all conditions are held constant, what is an optimal small group size? In this study, we explore that problem. We created a model into which groups that ranged in size from two to five members were placed. Each group encountered, at random, group traits that were supportive of team success or unfavourable for team success. A numerical scorecard of gains and losses, respectively on those encounters, was kept for each team. The model was run several hundred times. In the end, group with the highest positive outcome was deemed optimal in terms of size.

**KEYWORDS .** Teamwork, Social Conflict, Task Conflict, Public Space of Collaboration

## **Towards social design history and education in Brazil — a research outline**

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The aim of this paper lies in opening theoretical, conceptual and methodological beacons for an ongoing doctoral thesis, referring to the examination of historical paths of social design and its inflows in design education with emphasis on the Brazilian context. This study constitutes a productive synthesis that comprises: (a) the historiographical strands of social history and microhistory; (b) the discussions on design history studies; as well as (c) the problematization around the emerging category of history of social design, in general lines. Then, the ongoing research outline is presented, with the elaboration of a new set of questions for the continuity of the investigation.

**KEYWORDS .** History of Social Design, Design History in Brazil, Design Education, Design Research

## Neighbourhood, community and public space: designing the proximity together

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Freelancer

The paper investigates how the direct involvement of the inhabitants of a territory and the codesign practices can support the development of proximity models. The research presented is carried out in the city of Milan within Off Campus Nolo, the Living Lab of the Politecnico di Milano, with a focus on the territory of Nolo, a neighbourhood in the northern area of the city. The study was developed as part of "Vocabolario di Quartiere – The situated dictionary", an ongoing action-research project led by Polimi DESIS Lab, which aims to contribute to the search for convergences (of action and meaning) that can lead to new transformative processes within the area. . Starting from informal meetings, it is possible to reconnect the social fabric and transform ordinary conversations into project actions. Proximity is such when it can reconnect people with their territory, bringing communities back to the centre of public space with a human dimension.

**KEYWORDS** . Codesign, Public Space, Proximity, Neighbourhood, Situated Vocabulary

## Design Activism: A humanitarian approach in an academic context

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This article aims to present a pedagogical practice carried out in an academic context at Lusofona University of Porto (ULP), with students from the Communication Design bachelor. Now You See Me Moria (NYSM) is a project aiming to raise awareness about the humanitarian crisis at Moria Camp, in Lesbos, Greece. The project has collected 449 post-ers from graphic designers and students all over the world through a website and an Insta-gram profile, that could be downloaded, printed and shared. This initiative was started and is coordinated by Noemí Pascual, a Spanish photo editor. After being in contact with Noemí, where she understood how interested the Portuguese students were in the project, she propositioned that they use a set of photographs of the children at the camp and their respective dreams, and design a series of posters to bring awareness to the movement. This was a complementary way of being part of this initiative with a new approach to the theme – dreams of refugee children at Moria camp. NYSM has produced a book where all the posters can be seen. An excellent opportunity for students not only to see their work shared around the world, but also contribute to such an important cause. This pedagogical practice was extremely valuable in integrating students from a Portuguese Higher Educa-tion Institution (ULP) into real projects of social nature, in particular how co-creation can be a powerful strategy on design activism.

**KEYWORDS** . Social Design, Poster Movement, Pedagogical Practice

## The DNA Manifesto - Its Impact and Challenges for Design Education

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The first part of this article presents a research-creation project that took the form of an interactive exhibition named « DNA-The Future Life of Objects ». Based on the metaphor of a scientific research lab, the exposition presents a manifesto linking the world of objects to the world of life forms, hence the reference to DNA. While establishing a parallel between the system of objects and the world of living organisms, this manifesto poses a critical perspective concerning our relation with objects and raises fundamental questions about the notions of durability, environmental degradation, overconsumption and emotional attachment; it also anticipates the potential repercussion of connected objects and artificial intelligence on our private lives. In the second part of the paper, the author looks at the impacts and challenges of applying the principles of the DNA manifesto to design education. If Nature becomes the prevailing model to follow, design education needs to integrate with a much more acute perspective the fundamental principles of biology - the "science of life", and to focus the foundation of the design thinking process towards biomimicry. Recent explorations show that such a shift causes major impacts and ethical challenges at many levels for design curricula.

**KEYWORDS .** Sustainable Design, Biomimicry, Design Education, Objects, Proximity

## Materials Teaching in Design Education - An Overview

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Material selection can be considered a predicament for both students and designers during the creative process of Design projects; the difficulty is related to the wide variety and complexity of raw materials, along with supposedly outdated teaching methods. Critical thinking on the use of materials in product development requires approaches encompassing informed decisions during the selection of materials, which allows for responsible design and for a response to the current crises established by the UN's economic, environmental, and social goals. This article presents a literature review on Materials in the Design Course and discusses pedagogical techniques, as the goal of creating a space for reflection on opportunities for the advancement of Design, through the improvement of its teaching. Through a mixed methodology, the research began with a survey of the Design training programs of Portuguese Universities, and their materials curricula. After careful examination of the collected data, comparative analysis helped to: understand and structure the main characteristics and methodologies; recognize significant patterns, both similarities and differences between these programs; identify challenges and possibilities discussed in the reviewed literature for the improvement of Design Education, offering some insight into different methods and pedagogical techniques/tools, which are believed to support the process of material selection. Evaluation, awareness, reviews, and potential adaptations to existing curricula can contribute to aligning contemporary design needs with disciplines that make students capable and highly receptive to various challenging roles within the industry.

**KEYWORDS** . Material Selection, Material Design, Design Education, Programmatic Content, Design Pedagogy

## A pilot study for introducing designing materials in design education

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This paper presents a pilot study for introducing designing materials in design education. Considering the early stage of materials driven design approach, our research question is: how to introduce the designing materials contents in design studio classes? We argue that design students should become familiar with materials driven design contents facing materials' world changes: social, environmental, economic and social issues. Moreover, they should be touched by the subject considering the innovative character involved. To illustrate our proposition, we planned a workshop and an exercise using the materials driven approach based on personal experiences of participants. We describe the objective, challenge, approach, process, results and outcomes from a workshop where participants were invited to create a material-product. Then, the step-by-step workshop structure is presented. And finally, we present general observations about the experience and proposed structure.

**KEYWORDS .** Materials Driven Design, Design Methods and Tools, Design, Hands-on

## The synergies initiative: Enhancing interdisciplinarity through Problem-Based Learning in Design Education

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Over the last decades, expectations about design education have changed dramatically, as designers are increasingly expected to be more multidisciplinary, have more systematic and critical thinking, and integrate more relevant knowledge from other academic disciplines. However, the problem is that providing these skills is not always feasible, partly due to resistance from design educators themselves and bureaucratic obstacles imposed by educational systems. However, we believe that these factors should not prevent us from improving educational programs. This paper discusses these issues and our motivation to develop what we call "synergies". We implemented a pedagogical project to offer students an interdisciplinary experience throughout their design course that involves all knowledge areas within our school. While it is still early to make categorical conclusions regarding the efficacy of this project, we can already present and discuss good indicators of success and difficulties encountered in implementing it. The work we present here suggests that bureaucratic limitations can be overcome. The synergies require substantial work from everyone involved, rigorous planning, and gradually overcoming resistance from teachers, but the project reveals interesting new approaches for design education and the fruitful implementation of Project-Based Learning.

**KEYWORDS** . Design education, Interdisciplinarity, Academic synergies, Project-Based Learning

## Proximity of Conjectures to Design Pedagogy

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In the early years when design was trying to establish itself as a discipline, it borrowed from the established discipline of science. Early methodologists got busy theorizing on the cognitive and pragmatic aspects of design based on scientific reasoning. Design methods embraced the analysis/synthesis approach, which had its roots in the positivist tradition. But as design as a discipline matured, one found that conjecture/analysis model is better suited and has greater proximity to the ontology of design. But the fact is that conjecture/analysis is not being used in a structured or usable form. For the discourse on the C/A model to get more nuanced, we need more articulation on the building blocks of the model- the conjectures. Use of conjectures is not new in design pedagogy. Conjectures are whole or partial design solutions, which have been implemented in previous instances. This way of using conjectures aligns design to a constructivist philosophy. These solutions may come from the personal experience of the designer or from an external source, helping the novice designer or student to traverse the world of wicked problems. This paper identifies five typologies of conjectures used in pedagogy that can be leveraged as an effective pedagogic tool.

**KEYWORDS** . Conjecture/Analysis, Analysis/Synthesis, Design Pedagogy, Design Ontology, Conjecture Typology

## Chance of designing: Reframing aleatoric processes in design education

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This paper investigates the relationship between design and play by referring to play taxonomy of Caillois. French writer and philosopher Roger Caillois (2001) frames play quite systematically by classifying it into four categories according to the most dominant characteristics; agôn (competitive), alea (chance-based), mimicry (make-believe) and ilinx (physically-based) which are all included in the design process, according to Ham (2016). Based on Ham's (2016) conceptualization of play-design relation, this study focuses on alea and investigates the relationship between play and design in design education through the notion of aleatoric process. In this respect, this paper finds this question promising; How aleatoric processes can be seen and emphasized in design education? Furthermore, this current study claims that aleatoric processes could be considered as a framework for three prominent elements; alea, risk taking and uncertainty and aleatoric processes could be developed as a powerful tool to make design students able to play within design education.

**KEYWORDS .** Play, Design, Design Education, Aleatoric Processes

## **From information to re-information: the reuse of objects from the São Joaquim marketplace as a reference for the construction of a contemporary design**

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This article points to a re-reading of the concept of pre-art crafts presented by Lina Bo Bardi from the analysis of artifacts produced with the reuse of packaging and reuse of discarded utensils, currently sold at the São Joaquim market in Salvador-Bahia/ Brazil. As methodological procedures for this investigation were used the field research, data collection from semi-structured interviews, iconographic survey and literature review. This article proposes a look at the modes of production and preservation of Afro-Brazilian culture as a reference for the construction of an original, resilient, sustainable and autochthonous design. The concept of object referenced here is supported by the thought of philosopher Vilém Flusser and his idea of information from materials extracted from nature as a possibility for the future of design. As results of this research we found new possibilities of reinformation of objects that, in a cycle, form a productive and self- sufficient chain, in a way that points to new responsibilities and possibilities for the future of design exercise on a depleted planet.

**KEYWORDS** . Design Product, Resilience, Material Culture, Reuse

## **Making Makers citizenships: network tools for Lazio digital manufacturers' awareness**

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Faced with the series of recent global crises, the current consumption and production models have questioned many practices implemented so far where the quantitative approach moved to a qualitative scale. Recognizing in the urban context an organism capable of optimizing resources infrastructural and ecological, technologies open to economic models and entrepreneurial alternatives of participatory culture as a tool for involvement and self-organization. The Research analyses the urban production field, through a series of surveys aimed to define a framework made relation within urban digital manufacturing panorama, highlighting the commitment of public initiatives up to those private ones and roles covered by their actors within the urban network. By approaching Lazio Region as case study, the Research investigates those best practices to structure those guidelines aims to stimulate social innovation inter-actions, shared knowledge economies, and daily good practices of resilient citizenship.

**KEYWORDS .** DIY citizenship, Community Supported Project, Multi sided Platform, Co-Design, Making

## A Study on Research Methods in Design and Territory

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Territory defines us as individuals, in the way we eat, speak, or dress, and how we approach and relate to others, creating a shared identity that is solidified through language, experience, and knowledge sharing. In contemporary times, territory is no longer seen as just a closed entity characterized by relational factors that function in a logic of proximity and contact, but as a resource that can create value. This article analyses the territory as a design object that emerges from research in design and territory through the application of the most common methods: interdisciplinary literature, case studies and co-design, with the aim of optimizing knowledge for future studies on the territory.

**KEYWORDS** . Design Research, Design and Territory, Interdisciplinary Literature, Case Study, Co-design

## A Map of Knowledge Transfer and Exchange in Doctoral Research in Design

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A recurrent problem of third-level higher education (the PhD degree) is the issue of knowledge transfer from research to society. In Design, the problem is aggravated because the PhD in Design is a recent development, which means the design research community is still searching for (and, in some cases, testing) its methodologies. In this paper, we present the results of an analysis based on a database of all PhD theses in Design from the PhD program at the University of Lisbon. The study focussed on establishing provisional levels that categorise doctoral theses according to how immediate their results could be applied by society. The results show that design theses vary in their context and scope of applicability of knowledge generation and transfer; these insights can help us establish what constitutes a relevant contribution to the knowledge of the discipline.

**KEYWORDS** . Design, Knowledge Transfer, Design Education, Design Research

## Design-led Entrepreneurship Workshop: a dialogic approach

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This research explores possible synergies between entrepreneurship and design processes within a workshop context. To document this design-led phenomenon, we devised, implemented and tested a novel educational program that would map and recreate the dual development processes. The one-month startup program, initiated in 2014, has served, over a six-year period, as a living laboratory aiming at better understanding the role and importance of design within the entrepreneurial process. Results confirm that design plays a key role within the product development processes of « startups » but its function as a strategic tool and methods are not well understood by the team. Interestingly, the « synchronicity » between the entrepreneurial and design processes is not optimal, nor does it seem to offer sufficient « anchor » points, both in practice and theory. A dialogic approach is finally proposed to embrace design and business processes.

**KEYWORDS** . Design-led Entrepreneurship, Entrepreneurial project development, Design Processes, Dialogic approach, Workshop

## Draw(in)proximity – Teacher-generated Drawing Strategy

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Multiculturality is increasingly shaping the space of the classroom, expressing a variety of traits and existential conditions. In a time where multiculturalism and digital interactions are the common standards, human languages remain a strong identity feature, which hinders communication. The need to overcome language barriers in the exposition of theoretical contents, determined by different subjects involved in design teaching, demands new strategies for more inclusive knowledge transfer in higher education. The aim of this study is to investigate the potential of drawing in bridging such a gap. Teacher-generated drawing has not yet been addressed as a teaching strategy, therefore we developed a method which inquires its efficacy. During one semester we practiced knowledge transfer through drawing in a theoretical course, gathering the students' responses at the end of each session, by having them voluntarily fill a questionnaire. After the students' evaluation of the process was concluded, it was shown that drawing can be a useful tool to overcome language barriers in knowledge transfer and that its ability to promote empathy further facilitates interactions in the classroom.

**KEYWORDS** . Drawing, Knowledge transfer, Teacher-generated drawing, Visual narrative, Teaching strategies

## **Portuguese educational practices: a case study to identify the influences and consequences in the teaching of design to develop a relevant and contemporary curriculum**

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This article presents the results of a research on the pedagogical training of Portuguese Design, examining three Institutions in the North of Portugal, which together host the ID+ Research Institute. The objective was to diagnose the institutions in order to: confirm cultural influences and recognize their pedagogical vocations. The teaching of Portuguese Design includes influences from the Craft Guilds, passing through the Bauhaus, and the implementation of the Bologna Treaty. The methods used for the diagnosis were exploratory and carried out exclusively online because of the restrictive measures caused by the SarsCov-2 pandemic. The curricular plans and the distribution of ECTS attributed to the disciplines were analyzed. The results point to a cultural influence, also a differentiation of the vocations of each institution, concluding that there is an interdependence of the courses, as well as a need for intervention in the curriculum according to the social and technological demands.

**KEYWORDS .** Teaching Design, Cultural Influences, Pedagogical Vocation, Curriculum, Solve Problems

## Teaching Design in the Google age: redesigning the assignment

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Design education has long been grounded in a studio-based pedagogy heavily dependent on design problems to which students must come up with formal and technical solutions. Such problems are usually defined by sets of constraints provided to stimulate thought and, often, to simulate (some kind of) reality. For a long time, this model seemed almost flawless: every year students were faced with new challenges that, in the best cases, should exercise their abilities, promote their proficiency with processes and tools, and help them learn to think like designers. However, the recent shift from analogical to digital drastically changed the way students behave in the face of a new design brief. Such changes, in both (im)material conditions and behaviors, must drive teachers to come up with new ways of presenting challenges to students. In this paper, we reflect upon some of these strategies, developed while teaching undergraduates. We present the case of a design challenge presented to first-year students: one without traceable existence online, defined through a prompt-generating algorithm, that guarantees that each student has a unique, original, problem to solve.

**KEYWORDS** . Design Education, Undergraduate, Assignment, Prompt, Algorithm

## Design Educators: Collective Agents of Change

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This article presents two pedagogical practices carried out in an academic context at Lusofona University of Porto (ULP), inspired by the critical theory of significant actors such as Victor Papanek and Victor Margolin. There is an urgency for change and a need to prepare Design students to use the tools they have to practice design at society's service. Two projects submitted in international competitions by students during the academic year will be used as an example – Skopje Student Poster Competition, 2016 and International Poster for Tomorrow, 2020 – both with strong emphasis on global issues, which resulted in two exhibitions, the first based in Porto and the second in a series of public showcases around the world. The diversity of approaches played a decisive role in the public's interest in both exhibitions. In 2017, Skopje Poster was held at three Porto subways, where the audience targeted was broader than solely museum visitors. The fact that three students were selected by an international jury for the Poster for Tomorrow Competition demonstrates the success of the work carried out during design classes at ULP and the value of the work process through cross-disciplinary as a collaborative strategy method; also the possibility for training Design students as social agents of change. Two pedagogical practices and the recognition that Design is not a solitary practice, but a collective process.

**KEYWORDS** . Social Design, Pedagogical Practices, Design Educators, Collaborative Strategy

## Liquid Proximity: Engaging and Alternative ways of Interacting with Design Students

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The goal of this paper is to reflect upon how when possibilities of proximity changed, several practices emerged that were beneficial in the interaction between students and teachers. To understand the transformation of proximity we depart from the notion of fluid society, a Bauman's concept that declares that solidly established practices have liquified. As such, liquid proximity represents the dissolution of physical proximity, manifesting new ways of interacting that we have grouped into four categories: simultaneous proximity, instant proximity, elastic proximity, and democratic proximity. We will present different cases for each category gathered from our teaching experiences during the years of 2020 and 2021 when the Autonomous University of Aguascalientes, in Mexico, migrated 100% of its activities to the digital space due to the confinement regulations to stop COVID-19 propagation. As a result, liquid proximity represents the practices that not only challenged the idea that physical presence is necessary when teaching design, but that allowed new ways of proximity that could transform the way we teach design. In this paper, we will discuss different ways in which proximity drifted from a physical face-to-face interaction and the engaging advantages that they produced.

**KEYWORDS .** Liquid Proximity, Interaction, Engagement, Design Students, Distance Learning

## Teaching-Learning design through the contingency of COVID-19

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This paper presents a reflective analysis drawn from the experiences of educators, students, and overall participants of courses of design during the initial months of the COVID-19 pandemic, and the consequences related to the changes originated by the sudden transition of classrooms to virtual environments caused by this circumstance. Through the observation and analysis of the data collected, we reflect on the changes observed on values, emotional and academic factors, and the possible repercussions for the future of design education. We also reflect on the opportunities for transformation presented by this forced experiment on pedagogical practices. As a conclusion we argue that this situation has shown us the importance of social and context awareness, and emotional connection inside the classroom, as well as the opportunities it presents for the future of design education.

**KEYWORDS .** E-learning, Design education, Design pedagogy, COVID-19

## Tall Tales: A Discursive Design Approach to Design Learning

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A dynamic future is not one centered on the technologies, innovations or radical reinventions of practice, it is one rooted in understanding better, integrating ways of building stronger dialogues, shaping critical conversations and telling those stories to grow a learning culture. This reflective paper discusses an element of a delivery model, that tested what remote studio learning in Art and Design, at Undergraduate and Postgraduate level could look like. The paper describes the role of conversations about ideas, and discussion of ideas, as being a learning tool, pointing toward the development of a speculative Design Storytelling method. The research, and the new model for remote design learning, was an experience that sought not to rely on unthinking or uncritical acts, there were no vagaries of 'trial and error'. Design inevitably entails moments of not knowing, uncertainty, which can only be overcome by an active transformation of the situation, or, as Löwgren and Stolterman (2004, p. 9) put it "if the outcome can be predicted, it is by definition not a design process". This research took place live, 'in the wild', in a design school during the first full trimester of remote learning in the midst of the pandemic in 2020 when situations and people transformed and adapted constantly. This paper represents a slice of that designerly body of research (Cross, 1982), as a reflective discussion that actively connects the research learning to design knowledge. In doing so, it probes, provokes and questions the systems in and around Design Learning in Higher Education Institutions, to better understand the potential created during and following, the pandemic in 2020.

**KEYWORDS** . Design Learning, Designerly Research, Design Storytelling, Dialogic Design, Discursive Design, Preferable Futures

## Mapping of the design process of the Luz e Cena Laboratory, LA LUCE, linked to the Federal University of Goiás

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The universe of television set design has undergone transformations since the emergence of private televisions in mid-1929. With professional practice, it can be seen that set designers increasingly work in a multidisciplinary field; it is necessary to master the various areas that involve the construction of a television set. Due to the lack of studies in this area, the number of professionals specialized in television set design becomes scarce. The objective of this article is to present the design process used by the Luz e Cena Laboratory (LALUCE), a laboratory linked to the Federal University of Goiás (UFG), whose main goal is to bring architecture, design and art direction students closer to the basics principles of creating television sets through the practical application of the process of design, assembly, execution and disassembly of spaces, preparing them for the job market. To systematize the design process used by LALUCE, five television set were analyzed, created and executed by the laboratory. This analysis resulted in the creation of a standard design process that will be used as the basis for the laboratory's next scenographic creations.

**KEYWORDS** . Scenography, Sets, Television Set Design, Sustainable Scenography, Teaching Methodology, Design Process

Proximity

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