Article

Enhancing Futures Driven Design Education Through Moodboards

Torri Silvia[1], Rodriguez Schon Victoria[1*], Celi Manuela[1]

Design Department, Politecnico di Milano, Milan, Italy

Abstract

This manuscript addresses the creation of a set of guidelines for the composition of moodboards as outputs that visualize the research findings from a Metadesign process. Developed through a company-driven consulting project, these guidelines aim to enhance the Metadesign process and its teaching by bridging professional and educational applications. The exploratory value in moodboards enables design apprentices to develop futures-oriented creative and analytical skills by codifying values and behaviours. By integrating futures methodologies moodboards are further expanded as tools for visualizing complexity, fostering co-creation, and bridging short-term trends with long-term visions. This discussion seeks to establish a theoretical foundation to guide the educational process in the use of moodboards, situating them at the intersection of design, futures, and innovation.

Keywords

Introduction

Integrating futures literacy into design education cultivates responsible values in future design practitioners and supports the emergence of Design Futures as a disciplinary area (Saritas & Nugroho, 2012). Both Futures Studies and design share a common aim: creating alternative futures to address present and anticipated uncertainties. Design inherently involves future awareness, not only through the lifecycle of the goods it produces but also by envisioning and shaping new values. These disciplines converge through shared tools and methods, fostering a transdisciplinary approach (Celi & Colombi, 2020).

This manuscript presents findings from a research project exploring the role of moodboards in Metadesign education, emphasizing their potential for shaping futures-oriented practices. Rooted in a consulting project conducted within a design research laboratory, the study evolved through desk research, case studies, and testing phases, aiming to enhance visual communication in design processes.

As Marenko and Brassett (2015: 6) argue, design embodies "the momentary coalescence of future possibilities materialised today". In this overlap of design, futures, and education lies the Metadesign approach, a foundational element of design education that provides a meta-framework to oversee projects and guide the pre-design phase.
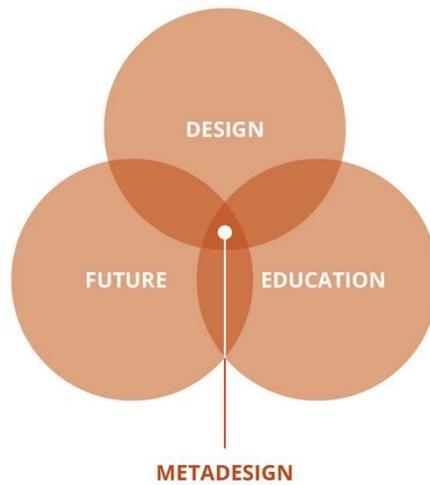
Fig. 1: Overlapping between the themes

This manuscript searches to amplify the knowledge on Metadesign, a term coined by Andries Van Onck (1964) that refers to an analytical program composed of strategic activities aimed at guiding and constructing a project, defining its framework and meanings by codifying and translating the signals picked up from the surrounding cultural context (Celaschi & Deserti, 2007; Celi, 2012). The subsequent analysis of the patterns identified within the cultural context can be understood as trend research, a pivotal point within Metadesign as it provides the ground for its forward-thinking quality, connecting design and futures, and commonly represented with a visual moodboard (Fig.2). Fashion plays a crucial role in the history and development of trend research, originally working as a forecasting strategy to organise the fashion system and its production chain (Blaszczyk & Wubs, 2018; Colombi & Zindato, 2019).
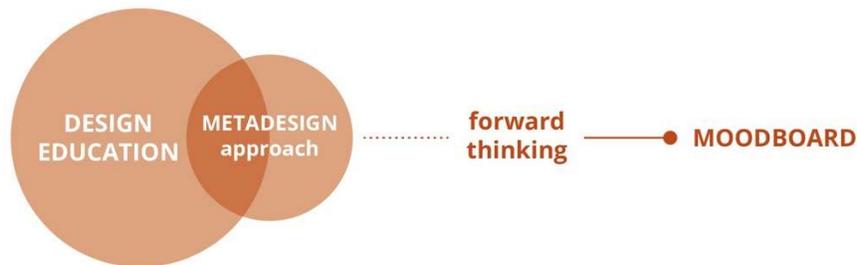

Fig. 2: Moodboard as a tool for forward-thinking

Also derived from the fashion field as visual support components from trend books –an editorial artifact that presents trends through evocative images and information for inspiration and design directions (Colombi & Zindato, 2019), moodboards (Fig.3) are a powerful narrative graphic tool used among myriad sectors and industries, composed of a consistent set of iconographic elements that express a specific but open-ended design direction. The focus is to anticipate the sensory and emotional relationship between a product that does not yet exist, and its end user (Rieuf et al., 2016). For these reasons, they are introduced to design students.

Fig. 3: A moodboard

Regardless of their relevancy, the use of moodboards has rarely been analysed (Setchi & Bouchard, 2010) or exploited. Exploring this topic could foster discussions that build a comprehensive theoretical basis to guide the educational process on the use of moodboards, aiding both educators and students. Considered indicators of design maturity, moodboards could be perceived as knowledge drivers that enrich future visions, as a new concept for futures literacy (Morrison, 2023), allowing students to articulate their thinking (Garner & McDonagh-Philp, 2001), and harness a set of skills and sensitivities that concern result and the entire system.

Furthermore, the fact that human communication is mainly non-verbal is neglected in favour of verb-centric methods that are neither intuitive nor immediate for presenting product design research. This is the case for moodboards, which show an overall un-valorisation; not understood fully nor applied effectively. Few students can grasp its potential (Setchi & Bouchard, 2010), and the lack of curiosity that results in limited novelty exploration inevitably leads to poor research and, consequently, to the production of deficient moodboards that are difficult to understand. There is still no articulate and precise guide of what constitutes and distinguishes a quality moodboard, which becomes a problem especially for faculty members evaluating and providing feedback to students (Garner & McDonagh-Philp, 2001). In this case, experimenting proved essential for teaching, creating a loop of research and training.

Moreover, there is a lack of research regarding the intersection between moodboards and Futures Studies methodologies that could contribute to the further exploration of their role in Metadesign processes. The reported analysis of the role of the moodboard as a crucial component of the Metadesign approach was carried out through a consulting project for a material manufacturing company. Motivated by a growing interest in incorporating anticipation principles, companies seek to invest in a range of Metadesign research. The results of the project consisted in moodboards as one of the outputs, and the development of guidelines for moodboard creation. The proposed guidelines are addressed at design students, aiming to frame the composition of moodboards as instruments to visualise the research findings, specifically from the trend research phase (Fig. 4).
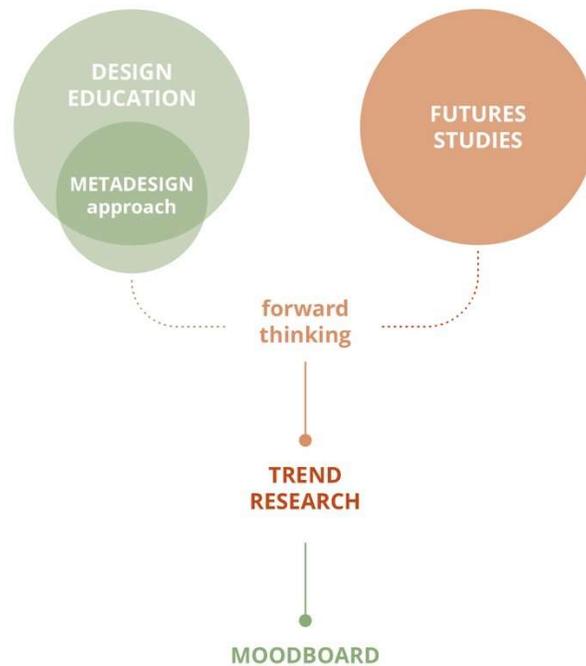
Fig. 4: Trend research as a link between Design Education and Futures Studies

Involving research outcomes obtained from a business environment brings together research and educating through experimentation. This experimental and reflective characteristic is intrinsic to design, mixing practice with reflection on the practice itself (Schon, 1983; Celi & Spagnoli, 2019). This methodology exhibits how the guidelines would be applied in a professional context enabling students to witness the efficiency of using moodboards as part of their design process.

To successfully achieve our goal the presented research was organised in diverse phases, each with specific methodological approaches. A first understanding of the context and theoretical contents of Metadesign and futures literacy was unfolded using desk research. Subsequently, the deepening of the functions and implications of moodboards was explored through the review of case studies. The company-driven consultancy project aided in defining and constructing the guideline template, strengthening characteristics related to the professional design practice. Finally, a first-run test of the guidelines was carried out in a design course, collecting data from observation and a structured survey.

The manuscript begins by establishing the theoretical foundations for integrating futures methodologies into design, focusing on how moodboards act as tools within Metadesign. It then explores the relationship between Metadesign, futures studies, and trend research, highlighting their shared anticipatory potential and their impact on design education. The role of moodboards as visualization tools is examined framed in the context of Metadesign. Next, the methodologies used to develop the moodboard guidelines are discussed, alongside insights from their initial testing and evaluation. Finally, the manuscript concludes with a reflective provocation considering the broader implications and opportunities of incorporating futures methodologies into moodboards.

Metadesign and Futures Studies

Design and Futures Studies, while distinct in their origins and methodologies, share a mutual interest in anticipation, Yelavich and Adams (2014: 2) sustain that "[d]esign is always future-making" –design is a projection into the future,

shaping futures through the creation of products, systems, and services. At the heart of both fields lies the recognition of the future as a space of ethical responsibility, creativity, and complexity. Futures Studies have been critiqued for being overly theoretical, while the design community increasingly recognizes the importance of examining the broader futures and worlds their outputs help create (Candy & Potter, 2019).

The convergence of design and Futures Studies offers ecosystemic and embodied approaches where the theoretical frameworks of Futures Studies meet the tangible production of design (Celi & Morrison, 2017; Candy & Potter, 2019). Both fields are characterized by their ability to think about and shape what does not exist yet, operating with order and disorder to address wicked problems –complex issues with no clear solutions (Miller, Poli, Rossel, 2013).

In this context, Design Futures gained relevance among design and futures practitioners, educators, and researchers. Merging through dialogue and experimentation; Design Futures contains methods, processes, and tools that range in scale and application. Among these we find contributions from other areas such as anthropology and science fiction, describing experiential futures (Candy & Dunagan, 2017), worldbuilding (Zaidi, 2019), prototyping (Mörtberg et al., 2010; Morrison & Chisin, 2017), design fiction (Bleecker, 2009), or design scenarios (Manzini & Jegou, 2000) –in design scenarios, design joins its agency to respond to a product's function, aesthetic, and embedded values (Colombi & Zindato, 2019) creating innovation paths that consider (1) their design qualities such as materials, processes, or shape; (2) their strategic direction (Celaschi & Deserti, 2007), while (3) supporting decision making (Evans & Somerville, 2005).

Trends become instrumental in Design Futures as they aid in the identification of emerging patterns that hint on future contexts (Celi & Colombi, 2020). Meanwhile, within the design community, a common consensus around design education states that there is an imminent need for updating its curricula, recognising the "specific tools, techniques and creative processes" that designerly ways of knowing and doing employ (Celi & Spagnoli, 2019). A novel vision of design education that integrates futures literacy could be described by the anticipatory character that defines design.

Miller (2007, 2018) defines futures literacy as a capability or skill learnt and used to "decide why and how to use their imagination to introduce non-existing future into the present" (Miller, 2018: 15). Futures literacy enables the conscious and deliberate use of the future according to its context (Miller & Sandford, 2018) while allowing us to explore the present's potential amid possible, probable, and desirable futures envisioned (Miller, 2007). This is crucial for designers as they act as mediators of futures (Celi & Formia, 2015), making complex possibilities within preferable futures tangible (Celi & Morrison, 2017).

Similarly, Metadesign, with the ability to produce multiple design directions, is one of the ways design employs its power to realise and shape futures as "metastories that activate design dialogues" Its futures-orientation allows designers to consider both probable futures, which stem from observable patterns and evidence, and explorable futures, which include plausible, probable, and preferable futures. This enables designers to engage in visioning that is deeply connected to context while also pushing the boundaries. The use of visualization tools in Metadesign creates intermediate open outcomes, rather than singular solutions that follow a linear path, leaving space for future exploration and decision-making. (Celi & Colombi, 2020)

The relationship between Metadesign and futures lies in how knowledge and its interpretation depend on the communicative power of symbols (Steffen, 2010), which is essential to foresight, intertwining design and futures studies to imagine possible futures in response to change and uncertainty (Fuller & Loogma, 2009). Metadesign, as an innovative and future-oriented framework, provides an overall program on learning how to learn, triggering and developing meta-cognitive skills that foster the autonomous decoding of information (Celi, 2012), which is essential for defining design parameters and sustaining project research and development.
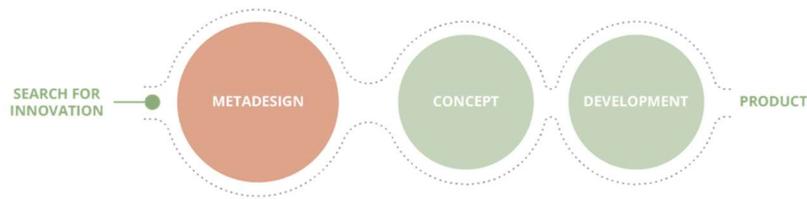
Fig. 5: The design process

The subsequent phases of Metadesign are described in Figure 5 as concept and development. The initiating motivation of this three-phase process could be defined as a search for innovation, while the output is a final product in any of its possible shapes (and regarding any design practice such as service system, communication, fashion, etc.). This research has been developed in the industrial product design discipline; therefore we speak of a physical product as final output.

Trends, design, and futures

To qualify as a trend, a phenomenon must show a continuous direction of development over a significant period (Miller, 2006; Vejlgaard, 2008; Rudkin, 2015). By joining quantitative and qualitative analysis; forecasting products' perceptive characteristics (Celi & Colombi, 2020), and interpreting the sociocultural contexts, trend research detects early change indicators crucial for understanding shifts in behavior and consumption patterns (Vejlgaard, 2008; Raymond, 2019; Celi & Colombi, 2020). Trends construct a deep understanding of the values and behaviours of the collective worldview that then inspire the symbolic look and feel of specific experiences (Hesmondhalgh, 2007). Through their reflective practice, designers interpret and identify new meanings in these findings, generating multiple design trajectories. (Celi & Colombi, 2020; Raymond, 2019).

This process allows the exploration of design opportunities through innovation and curiosity-driven research that draws inspiration from the meanings devised across contemporary culture (Celaschi & Deserti, 2007). In design, trend research allows designers to set frameworks that guide product aesthetics, functionality, and even ethical implications (Celi & Rudkin, 2016). "The value of future-oriented information," in the form of trends, "is both a powerful stimulus and a creative trigger" for designers (Evans, 2012: 491). While foresight focuses on identifying trends to inform responsible decision-making, design activities often maintain a certain blurriness in their inspiration, using trends to inform creative decisions. Seen as "seeds of information" about potential futures, trends guide designers through the exploratory phase, where they react –consciously or unconsciously, to trends, using them as starting points for their creative work (Celi & Rudkin, 2016).
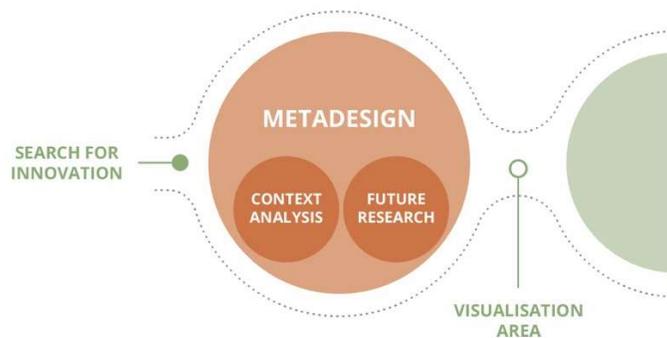

Fig. 6: The Metadesign input, output, and macro areas

For designers, analysing trends and their derived meanings is the starting point for defining the themes that will be translated through visualisation processes, e.g., moodboards (Fig.6). The design product must communicate the values envisioned at this initial phase, for which an anticipatory vision is crucial. The pre-figuring and visioning skills required to build future visions can be nurtured through Metadesign thanks to its future-thinking direction. In this way, visualisation may suggest multiple potentially viable paths..

Moodboards as visualisation tools in Metadesign

Recognising the lack of scholarly research regarding moodboards, a crucial step in our inquiry included examining two case studies. The first case regards a Product Design course at Loughborough University, and the second includesthe Metadesign Course from the Design School at Politecnico di Milano with the Trend Hub group. Moodboards and lifestyle boards (a moodboard regarding the end-user) were introduced as strategic tools that anticipate the intangible characteristics of concepts to developed.

Both cases evidenced that university students of industrial product design often misunderstood visualisation tools, especially moodboards, using them only for disciplinary duty and undervaluing them. This reveals an imprecise and uncodified approach that could lead students to fail in developing emotional, sensory, and meaning-making qualities in their design tasks, depleting their creative drive (Garner & McDonagh-Philp, 2001; Celi & Spagnoli, 2019).

According to the surveys conducted at Loughborough University (McDonagh-Philp & Denton, 2004), only a limited percentage of students use moodboards by effectively integrating them into their design process, even outside university work. Significantly few students can grasp their potential, and most of them develop them at a level that is still too superficial (Setchi & Bouchard, 2010) because they are still too conditioned by their ideas, schemes, and structured beliefs that do not allow for an honest exploration of contexts (Celi, & Spagnoli, 2019).
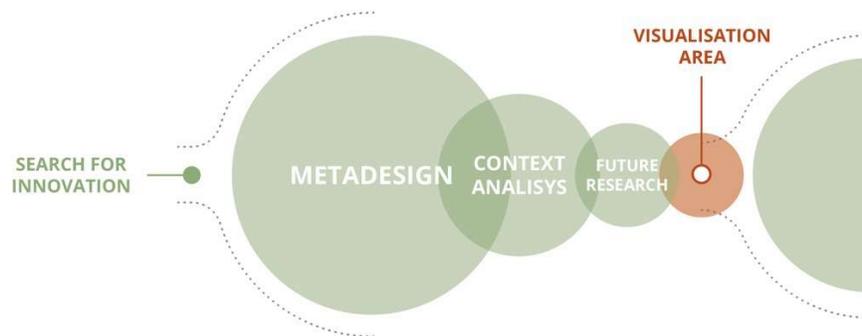

Fig. 7: The visualisation area

Regardless of this gap, each convergent phase from most innovation-seeking processes has a primarily visual creation as an output, a synthesis of all the research and analysis. In our case, Figure 7 illustrates how Metadesign converges to a transitive phase of visualisation and production of a vision. This vision is crafted by selecting and organising images that translate and decode the resulting contents of the final trend research phase (Bertola et al., 2018).

Futures studies are tasked with "making the invisible visible". Polak's (1973 [1955]) concept of "images of the future" emphasized that the future is not something that exists tangibly but is inherently a domain of ideation, imagination, and mental constructs (Slaughter, 2018). "These images often serve as the basis for actions in the present. ... Different groups often have very different images of the future. ... [O]ne of the main tasks of futures studies is to identify and examine the major alternative futures which exist at any given time and place" (Dator, 2005 as cited in Candy & Kornett, 2019: 5).

Through anchorage and objectification processes, moodboards help mitigate cognitive dissonance, making

anticipatory trends more understandable and acceptable. Once these visualisation tools are developed, a funnelling process in which designers refine ideas and focus their creative direction starts. These materials often serve as creative briefs, shared within the broader design team and helping in creating consensus among stakeholders on the key concepts that will guide the development and commercialization of new products. (Colombi & Zindato, 2019)

Specific iconographic material that mirrors what influences present culture is selected, searching to translate the outcomes. These suggestions embody colour, material, texture, finishes, form, semantic, or evocative implications. Designer's strategic use of moodboards bridges the preliminary research and the concept generation. Achieving a novel vision that includes futures within design education finds common ground in Metadesign, where the anticipatory agency within moodboards is twofold. On the one hand, it departs from the bases of trend research, which is a foresight practice, proving to be a strategic tool for anticipating the needs and desires of future users. On the other hand, moodboards are crucial tools for building a future vision (Celi, 2012) as they visually summarise and enable the exploration of possible futures, precise in showing design trajectories while still leaving space for designers to interpret and create –something intrinsic to the design discipline and aiding in defining the components of the project's concept

The inspirational and exploratory quality enables the identification of problems, needs, and contextual values, making them functional in the education of design apprentices as they foster the development of their analytical and creative skills. These "represent a liberating experimental phase that puts you in touch with your perceptions about the brief and to visualise them; they enable you to recognise the problem as it comes into view and to envision scenarios or future lifestyles" (Celi, 2012: 19).

Communication skills are also harnessed since moodboards stimulate specific competencies and sensitivities related to the design practice (Setchi & Bouchard, 2010). Indeed, the externalisation of mental images during the creative process is typical of the designer's work, in addition to supporting design thinking, representations serve to communicate ideas stakeholders (Tovey, 1989, 2002; Tovey et al., 2003; Miller, 2006; Vinck, 2011; Celi & Colombi, 2017).

Finally, they also support facilitating internal dialogue as designers create languages from keywords, colours and iconographic references that express feelings, inspire creativity, and help communicate ideas to colleagues, clients, or professors (Setchi & Bouchard, 2010). They are tools of exploratory value, helping design students develop their communicative language, enabling them to share and display their work.

As a visual tool that can transcend into communicating contents and emotions, it finds its use close to designers, which use numerous images throughout the whole design process (Celi, 2012). The integrated use of moodboards makes it easier to form relevant and innovative proposals, inspiring students and allowing them to achieve a depth of analysis of phenomena that is difficult to explore solely through words. This composition of images filtered by textures and colours reproduces sensations that sum up into a design concept (Celi, 2012). Visual communication takes on a priority role, becoming a proper Metadesign tool that goes beyond the project and actively contributes to defining the possible creative and stylistic directions that will be developed.

The visualisation process implies a synesthetic translation in which linguistic-verbal signs are interpreted employing visual systems to communicate contents belonging to a semantic world that would otherwise be inaccessible (Penati, 2016). This creates a type of language with an evocative capacity that manages to communicate meanings through symbols encoded in a collective imaginary, all in a particular dimension of abstraction (Maselli & Mouri, 2021). Connecting ideas and concepts applied in composition through principles of similarity, contrast, and contiguity stimulates the perceptual and interpretive thinking of both the maker and the viewer of the board.

Making research visible means reorganising information, bringing order to thoughts by evidencing the connections found. Indeed, externalising mental representations aids thinking and facilitates understanding and reasoning by producing meaning and significance (Celi & Rizzo, 2016), which can become a source of inspiration (Setchi & Bouchard, 2010). In general, visualisation tools are effective because they empower the imagination and refine visions on certain semantic aspects that are still unclear.
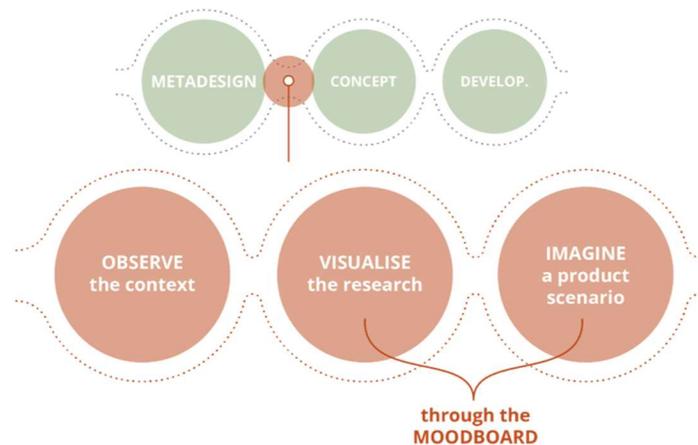
Fig. 8: Levels of visual stimulation

Celi (2012) devises three levels of visual stimulation; viewing, visualising, and visioning, as depicted in Figure 8. Viewing refers to observing reality and is usually employed during the research and learning phase. Visualising is used as a comprehension tool that expresses and describes the qualitative results of the research. Finally, the vision is the 'ability to think about or plan the future with imagination or wisdom (…) to indicate the horizons at which a project may aspire' (Celi, 2012: 18).

There is an explicit parallelism between the levels of visual stimulation and the Metadesign's stages, where students first observe the context, visualise the findings, and envision a proposal. The last phase of scenario, project or product envisioning is aided using moodboards, helping to synthesise the contents. The production of a good quality visual asset needs to find sense within a system of meaning to produce effective results. The progressive evolution of envisioning and metacognitive abilities complements themselves, which is crucial for the design of students' education (Celi, 2012).

Guidelines and their creation

The introduction of guidelines could improve the workflow of design apprentices, who consistently manage and transfer emotional value and meaning from research to concepts until they internalise the methodology making it part of their own design process. After desk research, case study analysis, and the consulting project, a draft of the guidelines was produced and presented to students from a Product Design Metadesign course.

Unlike the traditional methodological approach, which introduces academic knowledge into professional practice, this project employed a reverse process. This approach offered two key benefits: first, it allowed students to engage with a tool that had already been tested in professional contexts, aligning with the environments they will encounter in their careers; second, it enabled them to observe the impact and effectiveness of using moodboards within the design process. This methodology provided the depth required to analyze how these guidelines can be applied in a professional and practical setting.

The consulting project's aim regarded emerging trends in the given area of expertise. The outputs of the consulting project regarded colour, material, and finish (CMF) boards, design insights, and inspirational content for in-house use, using moodboards to communicate the findings. The project searched to encourage inspiration by expanding sources and stimuli, representing specific concepts referring to contexts open enough for personal interpretation while stimulating an overall direction.

Several moodboards were analysed as case studies to enrich the research, making it possible to include multiple aspects related to moodboards that would otherwise have remained unclear due to their lack of coverage in scholarly research. Including moodboards from real design studio projects and educational experiments allowed focusing on

the composition and the coherence between the final product and the semi-elaborated moodboard (Edwards et al., 2010; Velasquez-Posada, 2019; Munk et al., 2020; Koch et al., 2020; Reis & Merino, 2021).

The analysis shows that the chromatic filter is a helpful guide for selecting and combining images and is the first powerful element of evocation (Bertola et al., 2018) capable of instantly communicating the desired imagery. The concept of coherence and the narrative is repeatedly taken up: cross-references and stimuli must be assembled to obtain a detailed description of the world inspired by the trend in question.

While carrying out the consulting project, the entire research and visualisation process was documented in detail. This provided a solid basis for building a methodology for visualising trends, creating moodboards, and passing the testimony to students. As a result, it was possible to extrapolate an essential methodological guide as a template that combined the information from the case studies and the application project, guiding the visualisation and composition of a moodboard.
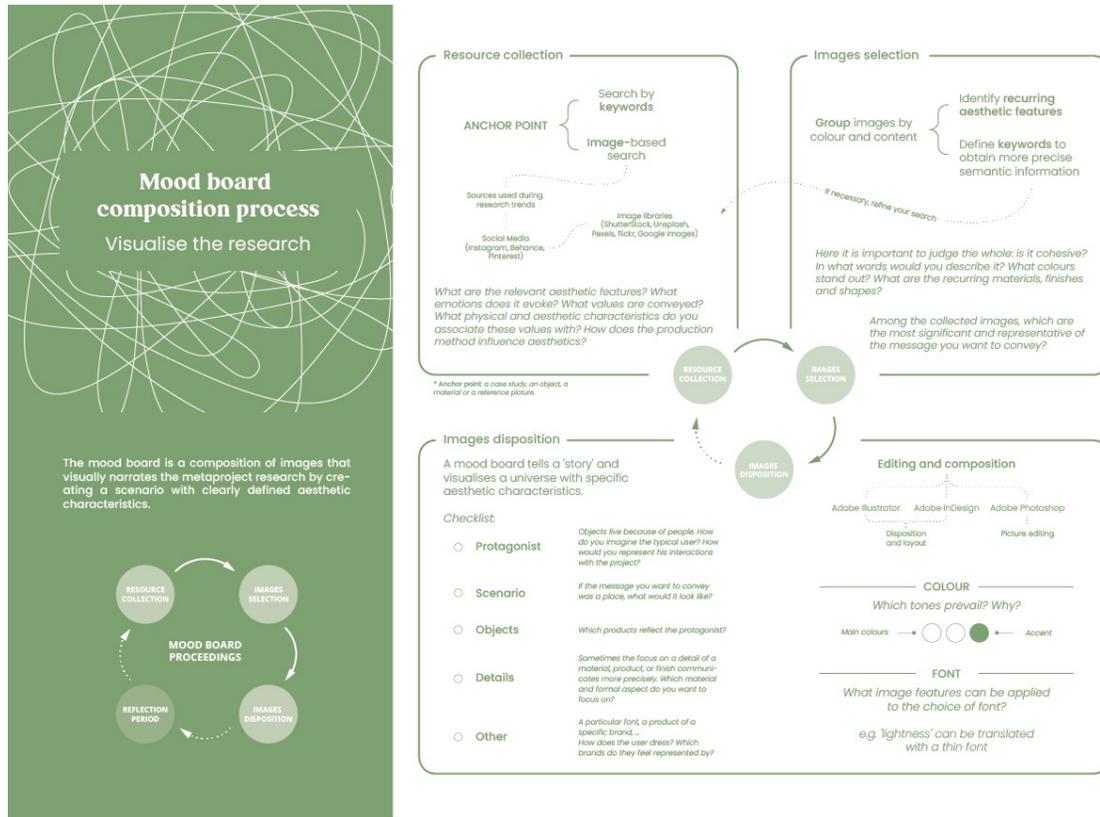

Fig. 9: Moodboard creation guidelines

The guidelines (Fig. 9) deal specifically with two types of communicative coding, on which visualisation tools such as moodboards are based: the iconic and the graphic. The iconic code uses the image broadly to describe something. The graphic code is based on the composition of elements on the page, such as the orientation and arrangement of images, choice of font, format, etc. (Campagnaro, 2012).

The template is based on the methodological path of moodboard creation, rarely been made explicit before. Each stage presents a set of practical actions to be followed, complemented by a list of useful tools (such as software or websites) for different purposes. The followed educational approach involves questions that ignite students' brainstorming to generate a sufficiently abstract representation that leaves room for exploration and critical thinking.

The first step is the collection of visual resources. To establish the right keywords and images for the research, it is essential to ask what values and emotions one wants to convey, and which physical and aesthetic features they associate them with. The second step is the selection of images that better represent their message among the

collected ones. This is done by grouping their visual resources, recurring to aesthetic features and refining their keywords, if necessary. This aims to develop a cohesive selection that expresses the defined values of the project.

The process ends with editing and composing the selected images, a checklist is proposed to help students avoid missing essential descriptive elements. Each item on the list is complemented by an explanation and questions, clarifying its relevancy. Rounding out the section is a reminder on how to choose the font and colour palette wisely, hoping for a result as a "visual unicum" (Bertola et al., 2018) capable of immediately and unequivocally communicating the imagined ideal scenario and the design direction in terms of colours, shapes, materials, and finishes required for the next phase.

First test and results

The last step in this research process was introducing and testing the guidelines among undergraduate product design students during the Metadesign course. The pilot testing of the tool enabled the understanding of its effectiveness and the implications it held along the design process, throwing valuable insight and feedback observed in the classes and revisions and from the data collected from the survey.

The Metadesign course is a one-semester studio that joins theory and practice to deepen the cognitive experience and reflection of every step of the design process, concluding on the internalisation and development of one's method (Celi, 2012). Students participate in teams and are informed on a brief that searches to stimulate the phases of understanding the context, exploring existing solutions, and creating a concept. The lessons include theory and reviews addressing "practical indications for their work", including methodologies, information, research communication tools, and visualisation instruments, among others (Celi, 2012).

The exercise briefed the students to detect place-specific values inspired by the city. A second part of the exercise researched diverseproduct design brands. The theoretical lesson on moodboards was introduced at the beginning of this second part, using the guidelines and some examples. The objective was to use the moodboard to explore and expose the research findings and the group's concept proposal.

The survey was provided at the end of this section. Upon its completion, data was gathered from a questionnaire with 55 respondents out of 70 students. The questionnaire aimed to investigate students' perception of moodboards and the effectiveness of the guidelines. This lays the foundation for developing the guidelines into a tool; it is still a methodological guide in an evolving stage.

The survey design was composed mainly of closed questions (only two questions had open-ended answers) that allowed us to collect quantitative data regarding different aspects of moodboards, and made it faster for students to respond. The form was divided into three sections, the first being an introductory part, collecting consent for data processing and the respondent's group number; this way, the responses could be compared within the group and confront them with the course's delivery. The second part intended to understand the respondent's experience with moodboards as a design tool. The final section explored the use and clarity of the guidelines.

The numerous responses were analysed both in their entirety and concerning the group work, comparing the final moodboards and the draft versions developed during the workshop. The feedback collected acts as valuable input in the discussion to improve the education strategy of the course and enrich the conversation regarding these visualisation tools and their roles in design education.

The first set of questions examined moodboards as a tool, with 96.4% of respondents finding their role in the design process clear after the exercise. The moodboard was most positively perceived for defining the project's vision, facilitating consensus within groups, and aiding decision-making. Additionally, 60% found it useful for making research tangible, though 23% did not find it helpful, and 27% were indifferent –potentially due to its novelty or varying group dynamics, which often favor more immediate methods.

Responses about using moodboards to define the project's context and guidelines revealed mixed results: 36% of students were indifferent, and 13% found them not useful. This could be attributed to the students' limited experience with design briefs or underdeveloped personal methodologies. Additionally, the exercise emphasized values rather than problem-setting. Despite this, many groups used small-scale moodboards with fewer images and more concrete references to define the project's aesthetics and communicate concepts, particularly during mid-deliveries and faculty revisions.

The questions regarding the exploratory function evidenced an overall positive response towards the fact that moodboards helped gather inspiration with 80%, and visualisation of its potential, with 61%. Half of the students found it helpful to discover new resources, showing that many of the searches were probably based on previously known references or abstract images with no conceptual content, such as textures or generic stock images.

Moodboards are regarded as a shared process in their construction, probably due to their summarising nature. This might also be interpreted as an essential part of the process, an inflexion point where every group member's opinion counts. This is presumably also why 60% of students declared to have done six or more moodboards before the final version was achieved. The first draft tests and the individual boards used to confront ideas within the group evidence that it is a practical tool based on learning by doing; until it is not executed and tested, one may not know if the composition works. It is an iterative process that takes on many trials and errors.

The second section, regarding the use and clarity of the guidelines provided to the students, proved that 90,9% used them. Reading into the tool's effectiveness, 80% of the students found the indications clear. In comparison, the remaining 20% shows negative answers, most based on the need to provide examples with the guide. During the creation of the guidelines, one of the challenges faced was how to introduce the information from the consulting project while still respecting the privacy agreements; this led to a vague definition of how to choose the images, especially since it is a very subjective process that requires a trained skill and design criteria.

Half of the respondents were positive when asked about the setting of their moodboard creation methodology, and the other 36% were indifferent; using a consulting project from a company aided in the creation of a robust base for a methodology that goes beyond educational scopes and supports practical results. This approach avoids it being perceived as a waste of time, based on the comments from Loughborough and Politecnico University, where instead is considered a serious and applicable approach.

Finally, 86% of the respondents responded positively when asked about the guideline's clarity in its instructions and content, evidencing that breaking up the steps and criteria that go into the moodboard composition was efficient. Other answers suggest that the guidelines were too generic and that a practical activity in class would have been helpful for its complete understanding.

Incorporating Futures into Moodboards

After analyzing the results from the first testing of the guidelines and evaluating the moodboards created by students, we identified a gap in the connection between futures methodologies and the use of moodboards. This prompted a review of futures methods that could enhance moodboard practices by addressing both the speculative and practical aspects of their application.

Futures methods offer ways to expand the role of moodboards by addressing both the types of futures they propose (alternative, possible, or preferable) and practical aspects, such as how images are selected and organized. Beyond offering inspiration and structure, these methods also challenge conventional uses of moodboards, becoming tools to explore complexity.

Causal Layered Analysis

Causal Layered Analysis (CLA), as conceptualized by Inayatullah (1998), deconstructs phenomena into four layers: litany, systemic causes, worldviews, and myths/metaphors. This multi-layered approach moves beyond surface-level observations to explore deeper cultural and systemic dynamics shaped by societal stories and symbols (Inayatullah, 1998; Slaughter, 2002; Celi & Colombi, 2020). In design research, CLA provides a framework to link observable trends with sociocultural narratives, expanding the anticipatory potential of design practices and informing current and future developments (Slaughter, 2002; Celi & Colombi, 2020).

Within an anticipatory design framework, CLA frames trends as multi-dimensional phenomena evolving across varying depths of visibility and duration (Celi & Colombi, 2020). Moodboards structured around CLA allow designers to bridge short-term trends with long-term speculative futures, integrating cultural and systemic insights into actionable design strategies.

- Litany: Focuses on surface-level trends such as material textures, colors, or technological features –short-term, easily recognizable phenomena that align with market preferences.

- Systemic Causes: Explores the socio-economic, technological, and environmental systems that drive trends, such as policy changes or technological advances. Designers use this layer to embed contextual meaning into their work and illustrate broader societal shifts.
- Worldviews: Examines collective ideologies and cultural paradigms that shape systemic drivers, ensuring design outputs resonate with shared societal values.
- Myths and Metaphors: Captures archetypes and aspirations that influence long-term visions, addressing wicked problems and inspiring speculative, transformative design through symbolic imagery (Manzini & Jegou, 2000; Miller et al., 2013).

This integration of CLA into moodboards enhances their potential to connect aesthetic and conceptual dimensions with systemic and cultural narratives, supporting both immediate design needs and long-term futures thinking.

Speculative Prototypes

Speculative design (Dunne & Raby, 2013) is a critical practice in Design Futures, using "provotypes" (Boer & Donovan, 2012) to provoke dialogue and explore alternative futures. Unlike traditional prototypes aimed at refining solutions, speculative prototypes prioritize critical reflection and open-ended exploration by raising questions and inviting participation (Mogensen, 1992; Boer, 2011). These tools enable designers to visualize complex future scenarios, blending tangible and intangible elements to mediate between the actual and the possible (Celi et al., 2023). Their deliberate ambiguity fosters co-creation, challenges assumptions, and reveals new possibilities for action (Wakkary et al., 2015; Celi et al., 2023).

Integrating speculative methodologies into moodboards enables them to transcend aesthetic purposes, transforming them into platforms for exploring and questioning futures. Informed by speculative prototyping, moodboards can provoke critical reflection, facilitate participatory engagement, and visualize complexity through abstract and symbolic imagery that defies articulation.

Manoa Scenarios

Manoa scenarios, developed at the University of Hawai'i, explore alternative futures –distinct and divergent possibilities arising from emerging changes and their interconnections. These scenarios are rich and complex, designed to provoke new ways of thinking and highlight systemic interdependencies. By mapping cascading impacts (primary, secondary, tertiary) across social, technological, environmental, economic, and political domains (Molitor, 1977), participants can trace how changes intersect and amplify over time. This approach creates narratives that maximize difference, challenge assumptions, and reveal blind spots. Embracing the seemingly implausible, Manoa scenarios bring depth and creativity to futures thinking by incorporating tensions, conflicts, and unexpected opportunities (Dator, 2009; Schultz, 2015).

The principles of the Manoa approach provide a framework for reimagining moodboards as tools for exploring and communicating alternative futures:

- Alternative futures as moodboard narratives: Moodboards can capture the characteristics, tensions, and opportunities in future scenarios, functioning as visual narratives that support scenario communication and enable designers to explore possibilities.
- Cascading impacts in visual layers: Moodboards can incorporate cascading impacts, with primary impacts represented through concrete visuals and secondary/tertiary impacts conveyed through abstract or symbolic imagery, helping stakeholders visualize systemic shifts.
- Maximizing divergence: Inspired by Manoa's focus on difference, moodboards can juxtapose contrasting futures to provoke dialogue and challenge assumptions, fostering creative problem-solving by linking the present with long-term visions.
- Collaborative creation: Moodboards can act as participatory tools, allowing stakeholders to contribute and refine elements, co-creating shared visions of the future.

Conclusion

The role of moodboards is multifaceted; they are not only creative tools but also design artifacts resulting from a precise process that drives innovation. The classroom testing phase highlighted the importance of visual and practical examples and diverse, hands-on methods, including analogue approaches. These findings underscore the need to embed innovative aspects into design education to enhance learning experiences.

The creation of guidelines through a reverse methodological approach reinforced their relevance by situating them in a professional context. The consultancy project with a leading company provided tangible proof of concept, demonstrating how Metadesign research can influence design processes at multiple levels. Incorporating real corporate projects into teaching material further showed how pragmatic approaches can accelerate learning and transition design education from theoretical frameworks to practice-based innovation.

Moodboards' inherent subjectivity can limit their academic scope, yet this same quality fosters creativity and individuality, enabling design apprentices to express their style and visualize abstract ideas. Their abstract nature may reduce effectiveness in multicultural teams, but moodboards consistently help define a project's sensory and conceptual frameworks in ways that words cannot achieve.

Incorporating Causal Layered Analysis, speculative prototypes, or Manoa scenarios significantly expands moodboards' potential. These methods introduce greater depth, bridging short-term design decisions with long-term speculative visions. As tools for trend research and futures thinking, they help designers visualize complexity, challenge assumptions, and foster co-creation. This integration elevates moodboards from design tools to catalysts for innovation and anticipatory practices in an ever-evolving design landscape.

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