

METADESIGN & TREND RESEARCH AS OVERLAPPING AND CROSSING LAYERS. A DIDACTIC EXPERIMENTATION IN THE FIELD OF DESIGN

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Abstract

Design, as a practice and discipline, has always been oriented towards innovation and its transfer in a wider economic, social and political scenario. For this reason the innovation, or better, the search for innovation, is not exclusive result of intuitive and creative processes but is flanked by a solid observation of the context and the research of trends - intended as signals, opportunity and innovation trajectories. In this changing and fast-moving economic and social scenario, Trend Research also evolves and absorbs the modalities and tools of the digital universe: qualitative and quantitative research supported by anthropology, sociology and ethnography are combined with tools for aggregating and reinterpreting data in an almost exclusively digital and “social” environment.

The basic research TrendHub is part of this contemporary context and had the aim of investigating the role and the potential of Trend Research within the design process in different disciplinary fields: interior, product and fashion design.

Within this framework the paper presents the results of an educational experimentation born from the collaboration between the TrendHub research team and NextAtlas, a data-driven digital platform specialized in aggregating and signifying data from a trend analysis perspective. The didactic experimentation has been launched within the Metadesign Studio in Product, Fashion and Interior Design undergraduate programs at Design School at Politecnico di Milano and presents itself as a blended learning experience. The paper aims to describe how to integrate this digital tool into the educational structure and the mutual enrichment between the Trend Research practice and the Metadesign Methodology.

Keywords: Metadesign, Trend Research, Blended Learning, Technology-Enhanced Learning, Education & Research.

1 INTRODUCTION

Design is per se a discipline oriented towards something that still not exists, design is a future oriented activity. Instead of analysing and interpreting reality – as in science – designer are engaged in grasping seeds of change on the surface of reality and to make them sprout and grow as novelties. Nowadays design-based inquiry is acknowledged as working through its own designerly means that includes specific tools, techniques and creative processes and is nurtured by research methods and analytical frames in a transdisciplinary manner. At the same time, inside the design community, there is a growing awareness that modes, structures and framework of design education have fast become out of date. Design education needs to change. Trend research, traditionally, aims to orienting the design practice starting from the identification of relevant signals in various areas of search that inform the further design phases. It is a hybrid research activity, which moves from quantitative analysis and forecasting on product’s aesthetic and perceptive characteristics to a field of qualitative analysis on socio-cultural contexts.

The paper presents a specific experience that reflects on the role trends in generating novelty through the experiences of three courses of Metadesign at the Design School of Politecnico di Milano. The educational experience where organized and driven thanks to TrendHub basic research [1]. TrendHub research had the aim of updating trends research practices understanding methods, tools and technology models used in the current context. For this purpose it was crucial to focus also on digital/technology drivers that today greatly influence trends in research and data reading: the paper present our experience in testing a digital tool to boost the creative process in three different undergraduate course.

2 TREND RESEARCH IN THE DESIGN FIELD

Futures studies and design processes often share the same approach of generating information and knowledge to stimulate lateral thinking [2]. As existing seeds of information and knowledge of possible futures, trends may play a fundamental role at the very beginning of the design processes to orient the action at the fuzzy front end stage [3]. The most important node on the value of trends for design is sensemaking [4], an essential act of transformation, in which change takes place. As Aaltonen and Barth [5] suggest «the ways we imagine the future, understand the past and come to grips with the present are extremely valuable in providing continuity and direction for our lives. Sensemaking is rooted in time and space, and occurs at the intersection of three horizons: the past, present, and future». In this sense the act of collection and absorption of the environment in search of inspirational input, is the first step toward change. Then selection, manipulation, crossbreeding and organization of data, during synthesis is where the real experimentation takes place. The combination of signs and juxtaposition of images and connected or subtle meaning is the mean to articulate a converging direction which will drive the designer to the further steps of scenario building and envisioning. Trends moving and enhancing information afford us to shift the barriers of expectation, to provoke and produce alternatives. Kahane [6] described this moment as the “breathing in” phase where we analyse the current reality in all its complexity to build the grounding for the later “breathing out” phase of constructing and disseminating scenario stories.

3 METADESIGN STUDIO BACKGROUND

The prefix “meta” generally express the capacity to view things from the outside, to consider a more abstract level, or to have a deeper and more mature understanding. In the design field, Andries Van Onck elaborated first, in 1964, a definition of “metadesign” intended as “initial speech”, “more general” and “more abstract” and “the particular project pre-trial” [7]. Moreover he connects this up-framing capacity to a visual-formal language of design that can be codified and adopted along the process. Metadesign it is a method focused on the discovery and unveiling of the project itself which is informed by the contextual conditions in which it is structured. In this sense it offers selection and decision models in view of defined objectives, drawing on research and visualisation tools which enable maps of the design trajectory to be constructed and the potential solutions represented.

Metadesign model, which has been experimented since the 90's within Politecnico di Milano (POLIMI) undergraduate courses, offers a perfect context where to test innovative approaches, group activities, and brand new topics emerged from academic research in the disciplinary field of design. The Metadesign Studio is a second-year course of the undergraduate program, a six-month class with a methodological core although it is not a theoretical course. For its nature the course—with some slight differences in the contents—is compulsory in all the undergraduate courses of Design School at POLIMI. The goal of the course is to have the students experiencing all the whole design process, reflecting on it, organizing activities, and explicating every cognitive step with the aim of finding, developing, and internalizing their own design method [8].

The course syllabus is build around theoretical lessons, tools/tutorials intended as lessons to support the assignment, and project activities supported by continuous reviews of team work. The theoretical lessons are oriented to draw cultural background elements, and to provide stimuli and suggestions to rebuild the design context. The tutorials, week by week, address the students with some practical guidelines for their work: research planning methodology, ethnographic tools for observation, information about traditional references, solution for research communication through info-graphics, critical instruments, and a visualization tools. The pre-project research is divided into two main phases: contextual research and inspirational research. With the aim of balancing opportunities and constraints student are invited from one side to gather information about context, users, company and brand as well as competitors on the other to grasp seeds of change form the inspiring design context. The second step is mainly focalized on trend research and concept generation. Moodboard and Lifestyle board represent the key graphic tools that collect images and express features that anticipate the intangible elements of a design concept. In fact, these outcomes, adapted from the fashion design practice, become a new visual expression of the product's soft qualities even before having delivered a full design concept. It is in this particular phase of the project that we have focalized our effort in testing new trend watching digital tools.

4 METADESIGN STUDIO & NEXTATLAS. A DIDACTIC EXPERIMENTATION

As part of the TrendHub research, we launched a blended-learning experience within the Metadesign Studios of the Design School of Politecnico di Milano in collaboration with NextAtlas. The objective of the didactic experimentation was to explore the different possible uses of the platform and its contents in an educational context. The Studios involved are part of the Bachelor Degree Course in Product Design, Interior Design and Fashion Design for a total of about 300 students divided into more than 80 project groups¹.

NextAtlas, a platform founded in 2012, is a data driven tool specialized in the mining, aggregation and visualization of Big Data coming from the Social Media universe. NextAtlas uses proprietary algorithms and AI methodologies to detect new trends and drivers of change in consumer lifestyles and behavior. The platform daily crawls tens of thousands of trend/style/innovation related blogs, sites and social media posts in order to analyse historical data, identify new trends and weak signals and filtering them from the "fad noise". «The AI platform is designed to apply cognitive frameworks combining computer vision with text analysis to learn and interpret data at multiple levels» [9]. NextAtlas organizes its contents mainly through two different channels. Data and Facts, that are AI-driven evidences about significant emerging correlations: they are automatically extracted by looking at the current data and correlated with relevant metrics. Curated Trends that are rising or rather long-lived and wide items that embody - or could embody in the future - a deep cultural phenomenon occurring in society. A Curated Trend is composed by a strong curated component and backed by evidences and data.

NextAtlas is a data-driven tool, mainly used by professionals and companies, that leverages the exponential growth of available data and the intensive use of social media as a competitive and innovative stimulus to drive trend research. The last two decades have seen a constant - apparently unstoppable - virtuous and utopian growth of large amounts of data - the so-called Big Data. Macro and micro ecosystems produce daily, and partly consume, billions of data in various formats - data structured in databases but also images, emails, GPS data, information taken from social networks. Data can be used to produce knowledge in the form of meaningful patterns or wisdom [10] and this process requires continuous evolution in terms of methods and tools capable of collecting, organizing and above all "translating" raw data into coded information. This is a constantly evolving scenario that involves the social, economic and political spheres at different levels: from political decisions to consumption habits, from technical-scientific progress to individual conscience. The exponential increase in available data has had, as a direct consequence, the evolution and diffusion of new data mining tools, a response to what Wurman calls "information anxiety": «People are worried about how to assimilate a quantity of knowledge that expands by nanoseconds in nanoseconds (...) Information anxiety is the product of the ever widening gap between what we understand and what we think we need to understand» [11]. A substantial amount of data/information - more or less consciously produced by individuals - occurs in the social sphere, Instagram, Facebook, Pinterest, Twitter etc. In the contemporary, the virtual wall assumes such a subversive role with respect to the past communication-identity modes that it would be almost impossible to imagine a return to the old paradigm. Millions of individuals - whose exponential growth is comparable to the trajectory followed by Big Data - are reflected in this virtual mirror and contribute, from their own point of view, to the construction of their own virtual/real identity, in which the boundaries between the sensitive and the immaterial universe vanish and disappear. At the same time, this constant virtual presence contributes to the definition of new behaviours, lifestyles and consumption habits. NextAtlas is rooted in these two new "paradigms of the contemporary" [12] and develops a process that is first of all action of "translation" and signification.

Educational experimentation is therefore part of a well-defined framework of close correlation and intense collaboration between research and training and between the educational system and the business world. Design, as a reflective practice [13], expresses a natural attitude to intertwine the design practice with reflection on the practice itself. The educational structure of the design system of Politecnico di Milano (School, Department, research groups, etc.) has been experimenting, since its foundation, with strongly interdisciplinary research actions and opportunities in which the designer learns to identify the range of expertise required for its solution [14] and increase "translation skills" able to handle and use languages, logic and methods of other disciplinary areas. In this context of opening up to opportunities for hybridization and experimentation of new teaching methods, the

¹ In particular the studios involved are: the Product Metadesign Studio held by proff. M. Celi and M. Parente; five Interior Metadesign Studios held by proff. L.M.V. Collina and L. Galluzzo, by proff. F. Scullica and E.M. Elgani, by proff. P.L. Silva Coronel, F. Balena Arista and M. De Santi, by proff. G. Simonelli and L. De Ambrogi and by proff. M. Antinarelli and M.R. Scelsi; the Fashion Metadesign Studio held by proff. F. Vacca, C. Colombi and P. Fanara.

experience of Blended-Learning has however required a process of choral coordination of all the actors involved aimed at sharing methodological dynamics, the potential of the digital tool and, last but not least, the sharing of objectives.

Among the didactic objectives of the experimentation we can include:

- jointly reflecting on the meaning of trend research in the meta-design process to verify its potentiality and criticality, involving teachers and researchers from the different areas of application of design (interior, product, fashion) in the discussion.
- testing the potential of a trend research data-driven tool in the different phases of the meta-design process and in relation to the different timings, themes and constraints proposed by each laboratory.
- how much and how the field of reference (product, interiors, fashion) can influence the use of the digital tool and the generation of meta-design semi-finished outcomes.

NextAtlas, on the other hand, has pursued objectives that are strongly oriented to verify the usability of the platform and its interface:

- performing a usability test, in terms of user experience of the platform from a group of testers – the students - highly digitally literate in order to understand any falls in terms of process intuitiveness, shadow zones etc..
- identifying recurrent and paradigmatic "paths of use of the platform" in order to identify the aspects of strength and strengthen any critical issues
- experimenting with the platform in a purely design context in order to identify in which way the proposed contents are used and/or reworked
- viewing semi-finished design outcomes and enhance the interface of data visualization for an audience of "nondesigners", the main users of NextAtlas.

4.1 Convergences and divergences in Trend Research based on a common Metadesign Methodology

As already mentioned, the didactic experimentation involved the Metadesign Studios of three different undergraduate degree courses: beyond the common general structure, each studio develops a specific brief aligned to the specificities of the sector of reference. The launch of the experiment took place in joint classes about a month after the beginning of the teaching: this allowed the students on the one hand to have a first substantial approach with the meta-design methodology and on the other hand to introduce them exhaustively to the particular themes of the different labs. The NextAtlas platform was then available for about a month and a half - during the period of research and definition of project strategies - and then reopened shortly before delivery and final exams. This double window allowed the students to metabolize the contents elaborated during the research phase and to carry out, as a second step, a reflexive verification - also depending on the development of the projects - and a consequent integration and/or confirmation of the contents.

METADESIGN STUDIO PHASES

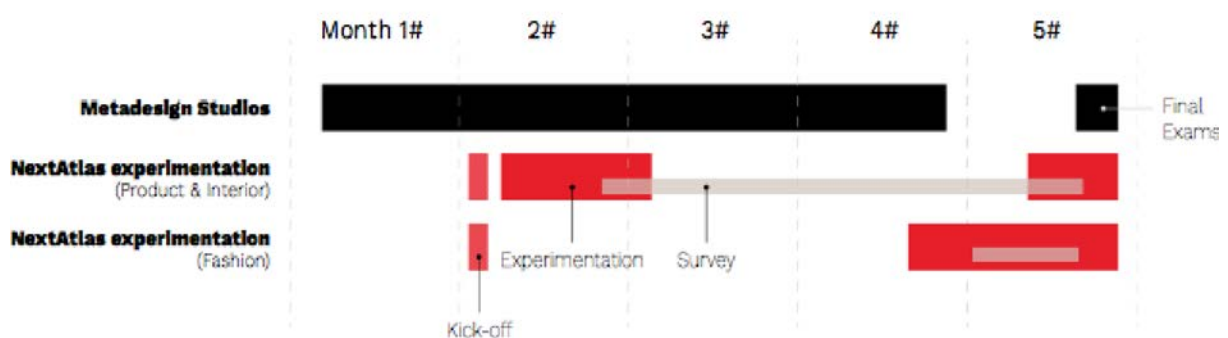


Figure 1. Trend Research data-driven experimentation within the Metadesign Studios phases.

Within this common structure, each laboratory has developed a different way of integrating the tool in the teaching phases, in accordance with the reference sector and the project theme proposed and developed. The tool has been integrated in the meta-design activities preparatory to the development of a project concept: observation and interpretation of the context-user-design object relationship (spaces, design products, fashion products), market analysis and finally exploration of new design opportunities.

4.1.1 Product Metadesign Studio experimentation

The Metadesign Studio within the Product Design Degree Course focused on the study of some Milanese cultural institutions and museums in order to develop products in the merchandising sector - "souvenirs" - able to reactivate the visit experience and communicate the value of these places and their cultural contents. New merchandising systems whose value goes beyond their specific function because they belong to and build a collective imagination, represent elements of differentiation and recognition and can exercise an attractive power. The laboratory is divided into three phases: a first phase of context - users - company analysis conducted through desk and field research activities. This phase is aimed at understanding the contended reference and defining a framework within which to set the project brief. A second phase of blue sky, trend and inspiration research useful for the identification of new creative trajectories regarding specific categories of users, new and emerging behaviours and contexts of use. The experimentation through NextAtlas is mainly located in this phase of the design process and has the objective of "testing the potentiality of the tools and of its contents in the process of identifying lifestyles and consumption habits to nurture the definition of the context a future product will be designed for" [15]. The search for new, emerging or consolidated trends is intertwined with the definition of new and potential reference targets - specifically the definition of personas: real identikits of an ideal audience/profile that represent the needs, behaviors, interests and aspirations of potential users. The return of personas and potential emerging trends takes place through the generation of moodboards and lifestyle boards: scripto-graphic artifacts that return evocative images, case studies, chrome-material palettes in a visual synthesis that can be a stimulus for the next phase of generation of project concepts. In this context, students are expressly asked to use NexAtlas both as a source of inspiration and as a provider of highly rooted content in data analysis and, if necessary, to integrate research with materials from other validated external sources. The third and final phase is aimed at developing project concepts starting from a selection of the most promising and significant scenarios previously identified.

4.1.2 Interior Metadesign Studio experimentation

The Metadesign Studios within the Interior Design Degree Course dealt with the theme of hospitality in the context of temporary living with a specific focus on hybrid spaces straddling the spaces of low-cost hospitality and spaces dedicated to study, work and related services. The didactic structure is divided into 4 phases. A first phase of desk and field research with a specific focus on hospitality spaces and on the possible functions and behaviour habits that these spaces generate. A second phase of scenario generation that, starting from the identification of trends and evocative insights, leads to the definition of some project concepts. NexAtlas is part of this phase and is used in particular to filter and select, through a high-profile tool, a set of user profiles and imagine how their lifestyle can be transferred, in terms of sensations, evocations and atmospheres, in the project spaces. The aim is therefore to guide students in the elaboration of different reports and boards able to draw up meta-design guidelines for the definition of spaces both in terms of CMF (Color, Material and Finish capable of generating specific sensations) and collection of inspirations (collection of examples that constitute a design reference). The third phase starts from the guidelines and the scenario previously developed to generate project concepts, while the fourth and final phase aims to lead students to address the technical details of the interior design and the related feasibility constraints. The didactic experimentation in collaboration with Nextatlas here is classically placed in the initial phase of trend research with the aim of translating trends into generators of inspiration for new spaces and services provided, far from the ephemeral and dry identification of stylistic elements for interiors.

4.1.3 Fashion Metadesign Studio experimentation

The Metadesign Studio of the Degree Course in Fashion Design offers a complete overview of the design process of a clothing collection: in this case the project deals with a collection of women's clothing for the spring-summer season, developed in groups, and an individual elaboration. The first part of the Studio, oriented towards the design of a clothing collection, is divided into several phases: a first moment dedicated to the definition of the design scenario in terms of analysis of the brand,

iconographic research on the inspirational theme assigned, definition of the consumer profile; a second step that involves defining the stylistic codes of the collection, in line with the identity of the brand and the scenarios previously identified, and the design of the key collection items for each scenario/line; a third moment aimed at programming the architecture of the collection (merchandising plan), to manage the variety of clothing categories and the assortment of types of garments. The second phase of the workshop is dedicated to the individual elaboration: a project of a capsule collection of t-shirts that, respecting the stylistic codes of the brand, is inspired by the latest emerging trends. The didactic experimentation in collaboration with NextAtlas is set in this phase of the metadesign process and the aim is to experiment, through the use of the tool, a new process of fast and updated inspirations grasping. Students are called upon to identify new emerging trends and weak signals - in line with previously identified and consolidated stylistic codes - and to translate them into «aesthetic and graphic elements for updating specific part of a collection that need fresh inspirations with a lower investment in term of time and resources used in it design development» [15].

5 RESULTS

At the end of the didactic experimentation, a survey - consisting of closed-ended questions and open questions for comments/suggestions/criticism - was submitted to the entire panel of students. The survey was structured in two orders of queries: a section on the use of the platform, with questions on its usability and intuitiveness, aimed at identifying the most commonly used research paths. This section is aimed at providing NextAtlas with feedback on the usability of the platform, in order to provide suggestions for improving the user experience [16]. A second section is aimed at determining how students use the tool in a way that is instrumental to the project, with the aim of identifying how much the trend research - filtered by the platform - has influenced the metadesign process in the different teaching phases, how much has proved to be sufficient or has required integration of documents and whether/how the different disciplinary areas have influenced its uses and objectives.

The analysis of the responses² revealed the following elements:

- More than half of the students (about 52%) approached the research through a key words oriented approach. The preference given to this search key, although intuitive and predictable, transfers an interesting figure when compared to the much lower percentages of the other keys to access content: curated trends, streams of data, places and timeline, etc.. This type of approach - blurred, poorly codified, often imprecise - suffers from two interdependent drivers. On the one hand, students show that they have a tag oriented approach to trend research: both the survey responses and the informal comments collected during the classroom work showed the use of research patterns similar to those used in major web browsers. This type of approach to information in fact influences the expectations placed on the platform: the main web browsers, in recent years, have undergone a paradigm shift: there are fewer and fewer *search engines* and more and more *response engines*. The user no longer expects to have to look for the most useful and relevant answer but expects fast, precise and above all correctly "contextualized" answers to the request - regardless of the semantic value used (a semantic value that could be more or less wide, correct, punctual). The other driver that influences this approach is linked to the fact that each individual is the bearer of ideas, patterns, previous and structured narratives that lead him to almost always select the information in a perspective of confirmation [10] and not of real exploration.
- A second panel of particularly interesting answers concerns which types of content (images, data, trend description, color palette, etc.) were considered most useful and used/integrated within the group projects. The results of the survey showed a higher incidence of images and a combination of tags and images. The students considered more useful for metadesign purposes to use unstructured information rather than pre-coded content such as curated trends and data: paradoxically, the services on which the platform has invested most have been seen as of little use by the students. The process of metadesign elaboration is traditionally a fluid phase, with blurred boundaries, open with respect to the specific theme being dealt with - this makes it difficult to propose structured information that finds adequate adhesion to the scenario hypothesis.

² The following analysis is based on a qualitative approach that integrates the answers that 230 students (belonging to the product, interior and fashion design areas) provided to the questionnaire with numerous suggestions expressed anonymously and the observation and discussion carried out in the classrooms during the use of the platform.

- A last interesting point concerns the way in which the selected content is processed. Most students agree on the usefulness of the tool and considered it a valuable aid to the discovery and selection of both evocative and updated inspirations and to the decoding of trends, weak signals and insights. Secondly, however, the selection of real application examples - case studies, theoretical-critical references, images and historically contextualized references - required in-depth analysis and additional research from sources and databases specifically dedicated to the culture of the project.

6 CONCLUSIONS

The didactic experimentation launched as part of the Metadesign Studios of the Bachelor's degree courses in Interior, Product and Fashion Design at Politecnico di Milano highlighted a mutual enrichment between the Trend Research practice and the Metadesign Methodology. According with Evans designers «are called upon to provide solutions to situations that have yet to occur. (...) The timescale may vary, often dependant upon the lead times associated with a particular sector, but they design for the future (...) The notion of what the future holds is often central to this design process» [17] and through objects, environments and communications, design orients behaviors more or less consciously [18]. Assuming Trend Research as the most common formal method anyone attempting to look at the future uses [19] it is clear that this hybrid practice, which moves on the blurred boundary of qualitative and quantitative research, is useful and transferable within the metadesign process in different design fields. Trend Research is based on a multi-disciplinary approach using expertise from outside the design industry [20] and designers can use information and insights on relevant trends and signals to inform, validate and endorse design decisions throughout the metadesign process.

On the other hand, a trend research activity conducted exclusively through digital data-driven tools shows its limits when the researcher/designer struggles to adapt his own language and thought - which is mainly a visual thought [21], a figurative thinking [22] - to an instrument that, however deep it may be, uses selective and self-significant algorithms. In this sense, a data-driven research activity crosses, but does not exhaust, the branching exploratory phase characterizing the metadesign process.

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