Remote design thinking. Dynamics and perspectives of the transformation in the online didactics and project

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Abstract

The non-transitory side effects derived from the spread of COVID-19, which have suddenly silenced and emptied schools and universities while activating new didactic 'forms', lead us to a reflection on the value of the e-learning teaching project in design schools and its possible repositioning towards the discipline.

Taking inspiration from the recent modalities of distance learning, which were experimented during the compulsory lockdown and isolation caused by the spread of the virus, this contribution means to reflect on those online teaching procedures that have been used in the domain of design. These refer to some pedagogic experiences for the diffusion of knowledge developed in Italy since the 60s, on media of communication such as the radio and the television. They could become an operational procedure with the ability to influence the new way of conceiving both the teaching and the idea itself of the design project soon.

Keywords: remote teaching; IT tools; design project; digital information; visual-learning; speed-painting.

1. Introduction

The non-transitory side effects derived from the spread of COVID-19, which have suddenly silenced and emptied schools and universities while activating new didactic 'forms', lead us to a reflection on the value of the e-learning teaching project in design schools and its possible repositioning towards the discipline.

The complexity of present times, aggravated by the prolonged condition of emergency due to the pandemic, requires a critical revision and an ongoing update of the design teaching modality in Design schools. This is necessary to face the condition of the cultural, social, and financial crisis, to face problems related to the environmental impact - like the decay and depletion of natural resources -, to the processes of technological changes - new instruments and online platforms -, and to the new generation of 'Millennial' students - who prefer learning in a way that is simultaneously active and highly stimulating -.

Coronavirus has accelerated some processes which have already been underway in recent years in the domain of e-learning didactics. In this field, it has been possible to discover new teaching and learning modalities thanks to the transformation and innovation of the digital world. These modalities were never used before, but they are now able to provide new opportunities for the diffusion of design knowledge. The latest digital mobile devices are combined with the technological evolution of computer platforms and with a generous availability of open access data on the net. They allow the achievement of new potential for a consistent transfer of knowledge and an interdisciplinary transmission of 'liquid' skills and knowledge for the design project.

Taking inspiration from the recent modalities of distance learning, which were experimented during the compulsory lockdown and isolation caused by the spread of the virus, this contribution means to reflect on those online teaching procedures that have been used in the domain of design. These refer to some pedagogic experiences for the diffusion of knowledge developed in Italy since the 60s, on media of communication such as the radio and the television. They could become an operational procedure with the ability to influence the new way of conceiving both the teaching and the idea itself of the design project soon. In the first part, we will retrace those pedagogic experiences that, in the past, have influenced and characterized the e-learning of the design 'Made in Italy'. The second part will be about those modern technological devices that are particularly effective in determining a new modality of distance teaching in the field of design. The conclusions outline some relevant aspects that, from a pedagogic point of view, can become a reference for a future passage of the project knowledge in virtual universities on one hand, and ensuring a new position of the discipline through a new approach to the design of the project on the other.

2. Teaching design and distance learning: from the 60s to the e-learning

Correspondence learning has very ancient origins. Records of early forms of distance learning can be found in England, Germany, and the United States during the 1800s to erase the cultural gap between the different classes. Courses were mainly technical or commercial, they were delivered by private institutions and addressed to those who could access education outside a school context.

This didactic form was widely enhanced by the arrival of radios and televisions. It is enough to think that RAI, the national Italian broadcasting company, transmitted for the first time a program that was entirely dedicated to teaching Italian to illiterates from the 15th November 1960. This way, those who had a TV could learn how to read and write Italian directly from their homes, on their sofas.

The real revolution in the field of distance learning takes place with the appearance of personal computers on the market. This gave life to what is defined as "Multimedia education", which broadened the audience of learners, although the learning, in this phase, is still considered as an individual process, and the didactics is still dispensing and not interactive.

The invention of the Internet gives new stimuli to distance learning through "net training": e-learning turns the asynchronous learning process into synchronous, from unidirectional to multidirectional, promoting the sharing of information and the circular form of the learning processes.

In the field of Italian design, there is great evidence of cases where the teaching based on the "know-how" was transferred from the classrooms to the media, promoting the amplification and the in-depth analysis of the knowledge linked to the design activity.

It is enough to think of the first educational television programs, such as *Lezioni di design* (Design Lessons) in 2001, by Stefano Casciani, Anna Del Gatto, and Maurizio Malabruzzi, hosted by Ugo Gregoretti and broadcasted on Rai Educational in 30 episodes. Each episode was dedicated to an investigation on a particular aspect of design (from history to material culture), it included "impossible" interviews, contributions and interventions of exponents of the Italian design who had the task of illustrating, through personal experiences and anecdotes, the peculiarities of a specific subject.

Another example is the program *Ultrafragola*, a tv-art-magazine dedicated to Design, Art, and Architecture, hosted by Vanni Pasca, on the air since 2005 on Cult, a thematic channel on SKY. Ten episodes that try to retrace or rediscover the Italian creative scene - from its glorious traditions to the latest findings in the contemporary production - as well as wander through the scene of international design.

5 Lezioni di Storia del Design (5 Lessons on the History of Design) by Renato de Fusco in 2015, available on the author's YouTube channel.

Furthermore, the most recent Stefano Pasotti's *Storia del design* and *Storia del Design Italiano* (The History of Design and The History of Italian Design) appeared as YouTube Shorts in a playlist of 26 speeches used by the author to retrace the history of international design.

Corso Arte e Design: Lezioni di Bruno Munari (Art and Design Course: Lessons by Bruno Munari) is a particularly interesting online course (available on the WeSchool platform) made of 13 video lessons edited from one longer lesson that the artist held in Venice in 1992. The peculiar thing regarding this course is the possibility of interacting with WeSchool to request further material for a deeper study in real-time.

When we look beyond our national borders, besides the in-depth theoretical studies related to design, video-podcast focused on technical training are available on the web. Among these, it is worth mentioning the talent show *Philippe Starck: Design for Life.* Under the guidance and supervision of the world-famous architect and designer Philippe Starck, a series of aspiring designers are asked to transform their ideas into concrete products. A real design lab, divided into six episodes. In each episode, the students are guided through the different phases of the creative process: from the idea to the model, from the test on the prototype to the advertising campaign.

On a more technical side, the documentary *How it's made* produced in Canada by Production MAJ Inc came out in 2001 and it has been broadcasted on multiple international tv channels. Divided into 32 seasons, with more than 400 episodes, each video describes a single product, from its conception to the materials, technologies, and packaging.

Finally, the web provides a generous selection of video tutorials, video-podcasts aimed at teaching real lessons related to the use of digital devices for cad drawing, 3D modeling, and engineered products.

3. New instruments for online design teaching

In the condition of uncertainty and instability of the present times, how can we foster the knowledge needed to be trained in the design project, to trigger new forms of teaching and effective instruments that take advantage of the web potential?

In the current phase, the tools for the diffusion of knowledge are not represented by books of critique or architecture magazines and paper design any longer. They are represented by the infinite digital container of bookshelves, podcasts, images, databases of "open access" projects available on the web. In this context, it is crucial to divulge the project's culture and instruments with an effective method, which is rapid, sharp, and unambiguous.

Different from the past, when the academic practice of communicating the knowledge of design through a didactic method required a process of settling and slow-paced learning, today, the use of new computer technologies strengthens the process of online teaching of the project. Without giving up the entireness of the project, this process uses the short times of the web as a methodological instrument to impress a clear, short, immediate, and inclusive message. From a pedagogical point of view, it is decisive that the didactic online communications offer suitable elements and notions to allow the students an autonomous orientation in the complex field of knowledge and the different disciplines related to the project.

Within online design teaching, particularly when talking about remote training, it is necessary to outline new practices of design didactic to stimulate the creativeness and knowledge of the new generation of Millennial students. They prefer active learning, rich in stimuli rather than the "old style" lectures about the project. This was characterized by a "face to face" approach between professors and students and, the creative contents of the project were made clear through the empirical instrument of the initial sketch on a piece of paper. Today, new modalities of digital practices opt for an experimental didactic approach to freehand drawing, based on the use of computer instruments compatible with the tested digital platforms for e-learning such as Zoom, Meet, and Teams.

The online teaching during the pandemic has experimented - besides software to draw lines and geometric shapes - original and dynamic instruments of graphic display, particularly suitable in the initial phase of definition and communication of the project's concept, able to digitalize the creative hand drawing. Thanks to the diffusion of instruments such as graphic tablets and viewers that record the act of drawing, it is possible to teach the design discipline online through 'visual-learning' communicative processes and 'speed-painting' expressive ones. With extreme effectiveness and synthetic ability, these new instruments ensure clarity and personalized content, high definition of graphic lines, technical details, and artistic features, together with creativeness, ease to focus, fast learning, and participation.

In a short time, we went from using a viewer with a camera - which records the hand drawing on paper and projects it on the computer screen -, to the Moleskine's Smart Writing Set - which allows you to handwrite and draw on paper, and transfer notes and sketches in digital format on portable devices -, to the graphic tablet - which digitally records the graphic movement traced on its surface by a specific pen with a magnetic point -, to Faber-Castell mechanical pencil with graphite tip and magnetic support - which transfers the drawing line on a device thanks to a compatible graphic tablet -, to a simple and essential magnetic ring with silicone adaptor that can be applied onto any writing instrument such as pens and crayons - which digitalizes the artistic traits of the hand drawing through a specific graphic tablet -.

These new drawing instruments are a support for sketching the design project, they are more and more technologically performant, they can be personalized and compatible with new computer platforms. They represent a valid didactic support for the e-learning, both in a synchronous and an asynchronous modality, they can revolutionize and update the learning systems of the design project while stimulating the interest, catching the attention, and contrasting the difficulties to focus of the new generations of students.

In the next future, the use of these computer instruments will allow the discipline of design to: make the teaching of the project more efficient, immersive, dynamic, and participative; stimulate creativeness and imagination through learning methods; ease the access and the exchange of the materials available online, from any device and in any moment; transform the static learning of images projected on slideshows into a dynamic approach of knowledge diffusion thanks to the empirical and interactive instrument of the project drawing; simplify the creative concept of the project idea.

4. Future scenarios

4.1. The didactics of the project

In the 'liquid' and uncertain condition of the present times, and the domain of the multiple irreversible processes of technological transformation, in which way will the discipline of design be able to reposition its methodological principles in the teaching of the project? And besides, how will the new forms of teaching and learning bias the creative approach to the project and the resulting product of design?

The answer to these questions will have to be found in the 'new dimension of the project of design', which can be transferred through online hybrid educational processes. These make use of the potential of the new digital technological instruments, exploiting the creative and communicative language of the Social Media community. For the academic world, the challenge of the next years will consist of rethinking the pedagogic offer and the cultural content of the design discipline in a critical perspective, through an educational method that can interact with the new generation of 'Millennials', with a smart, communicative language, a flexible, synthetic and inclusive approach. Overall, it will be necessary to determine a training approach to «[…] *make the students overcome the habit of a passive indoctrination to acquire independence of action and judgment*» (Raiteri, 2014, p.115-116).

The design discipline will reposition its methodological principles regarding the teaching of the project, going beyond those teaching modalities used in real-time and face-to-face lessons. The latter, used to on a slow process of sedimentation over time of the "learning by doing", orienting the research towards the new 'liquid' opportunities of a remote knowledge transfer in the "e-learning by making". Without giving up the completeness of

knowledge, these new modalities of teaching and learning will use the short times of distance learning, both synchronous and asynchronous, as a methodological instrument to imprint an effective, sharp, rapid, and inclusive message. Through the use of digital e-learning platforms, of new communicative instruments of 'visual-learning', and 'speed-painting' expressive ones - sourced from the new support devices for the drawing of the project - the critical awareness of the teacher will s stimulate the student's creativity and a new type of experience in the design 'making'. In the comfortable and immersive environment of the virtual student-sized classroom, it will be possible to reduce the distance between teacher and students, favor a cultural debate and a critical confrontation of knowledge, and create a new collective 'project digital intelligence'.

4.2. Design is a trace

The society in which we are currently living could be defined as a "society of information and knowledge". Here, technology plays a crucial role in cultural enrichment and lifestyle sustainability, being used in the field of training and in those activities such as the planning and production of performing artifacts.

The introduction of the e-learning methodologies and the *Digital integrated didactics* have opened new scenarios for the training of future designers and the development of effective planning methodologies. The possibility to operate in an immersive, multisensorial environment has broadened the abilities and the skills of new draftsmen and provided new multitasking instruments to use in the planning process.

Although in the past a team of experts had to be "face-to-face" to reflect on a problem and solve it, nowadays the web offers several scenarios that multiplied and networked the participants, transformed the principle of verticalization of skills in a circular system, dematerializing the gathering space and dilating the time of aggregation.

Dynamism, interaction, immediateness, and multimodality will be the new paradigms that design will have to acknowledge. Dynamism as a synonym for update, specialization and ongoing in-depth study of knowledge. Interaction as a synonym of convergent and transversal knowledge. Multimodality as a possible interaction through the variety of media channels offered by e-technology.

The design is offered a new opportunity. The atopy of the web dimension matches perfectly with the design, which is atopic by definition. The absence of a real physical context, the presence of interlocutors and experts, the possibility to intervene from a distance in any moment of the planning process, represent a challenge for future designers to give life to sustainable planning methodologies, avoiding the mistakes which are often due to rushed and verticalized choices. We plan more and better, we produce less and what should be.

The design becomes a communicative process, the product loses its material aspect adapting to the conditions of the present times. It becomes an Avatar, a holographic image, chosen to represent the essence and the transcendence of things. It goes from being a sing to a trace, an «*open work of art* [...] *allowing an infinite number of interpretations and shows new meanings every time*» (Umberto Eco 1962). An ecstatic experience or image is decoded by the observer or final user through a process of interaction mediated by their background thanks to the input provided by the designer.

The product is not defined to achieve a specific action anymore, but it is a planning scheme, a concept that can be acquired, interpreted, adapted by the needs of those who use it.

The design product will not be the result of generalist planning any longer, may be set by a team from a particular latent need. Instead, thanks to the connectivity, the knowledge, and the ongoing training allowed by the web and the new technologies of rapid manufacturing (either synchronous or remote), the result will be a complex system, studded with relations in which the final user is the protagonist, as a lynchpin of the planning process that can be given the task to finish and define the ultimate nature of the artifact.

The team defines the trace, the hologram, the opened work of art. The user grafts the seed, the sprouting idea into the trace to produce a unique artifact, just like an haute couture tailor would.

Acknowledgments

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