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RE-ENERGIZING THE DESIGN EDUCATION

A STUDY FOR REVITALIZATION OF ACADEMIA'S CAPABILITIES AFTER THE PANDEMIC-DRIVEN SHIFT

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PAPER ABSTRACT: This paper endeavors to identify challenges faced by academia during the global pandemic along with the physical and psychological states of students which affect their design and learning processes; and to propose novel approaches for employing new methodologies and pedagogies in design education as well as attaining sustainable and enriched academic experiences for both educators and students. This paper also aims to analyze various methodologies which could benefit a transitional design education model to adapt to the changing educational needs of the industrial designers. Also, it is intended to be an educational resource and to provide academic models as a supportive framework for designers and design educators to consider potential post-pandemic scenarios with appropriate knowledge, tools, and skills across collaborative practices between academia and industry.

Keywords: Design Education, Design Pedagogies, Distance-Learning, Academia-Industry Collaboration.

1. INTRODUCTION

During the recent shift in design education fueled by pandemic, it became clear that academia - along with the industry - needed to adapt new methodologies. On one hand, the design education endured a variety of setbacks and challenging impositions that were caused by the pandemic. On the other hand, the 'new unknown' or the uncertainty for what the future holds for design education and the design students also provided some opportunities to experiment with. This paper is intended to focus on the latter. There was a remarkable integration of online education and virtual interaction opportunities during pandemic-driven education shift. Academia needed to implement efficient and adaptable environments with all the hardship of not being able to interact in-person. Surprisingly, these hardships brought new perspectives to the academics as well as the design students to cope with different drawbacks by implementing new or revised methodologies in design thinking, problem-solving, collaboration and interaction. Academia-industry collaborations play a huge role in this effort. Design education also needs to respond to the increasing complexity and systemic transformations of the professional realm. As a major part of design education, staying progressive and innovative require a dynamic outlook that keeps morphing rapidly through these times of setbacks. Embracing new movements and trends within technological, social, and cultural domains are becoming key factors to the progressiveness of academia. In many cases, shifting or changing social norms, trends and requirements affect the learning processes and outcomes. Online/remote education with a very utilized

interaction would definitely diminish these shortcomings and will be creating a more immersive collaboration opportunities which all together would be able to revitalize the design education.

2. BACKGROUND & LIT REVIEW

Even before the pandemic, the design education started to search for new ways to address the requirements for design students with various methodologies. But peri-pandemic developments showed that academia needed a quicker response in order to be compatible with not only the educational demands but also the professional world's requirements. Design should be considered a process-oriented discipline. So should the design education follow suit. Archer, Baynes and Roberts (2005) outline the term 'design' in the educational context to be qualified to define an area of man's concern, becoming the awareness and the consciousness of the issues of the material culture of the products and the values of planning and making, together with the ability to understand and handle ideas related with them. Davis (2017) defines architecture and design as rapidly changing fields, therefore, standing still cannot be considered as an option. It is also analyzed that the history of design practice is one of transitions from trades to professions; from purely instrumental know-how gained through employment to academic preparation that includes study of the discipline as well as the practice. These are the theories, perspectives, and discourse that underpin professional decision-making. Meyer and Norman (2019) explain contemporary design education as having several origins and many of these origins developed over the years. During their analyses of the design education, they assessed that many designers who were trained in art schools as practitioners, have a little understanding of academia, rigor, and the need for evidence. On the other hand, from a more environmental standpoint of design, Rapoport's (1990) definition suggests that design is any purposeful modification or change to the physical environments by humans. This therefore indicates that also design education cannot be devoid of all these factors. It has become more challenging for academia with the changing conditions due to the repercussions of external and global disruptions such as catastrophes, economic recessions, and with the last instance, a global pandemic.

The New Bauhaus (the name bestowed upon ID at its founding), as argued by Weil and Mayfield (2020), was to move away from the view that design is merely an applied or commercial art toward defining its unique practice of tying together the arts, technology, and commerce for the betterment of society.

Böninger, Frenkler and Schmidhuber (2021) differentiated the 20th century design - which is primarily understood as a *result* - from design in the 21st century – which is first and foremost a *process*. As a practice, in design education, a lifelong learning mentality must be supported by a stronger interlocking of industry and education. Remote-education or online/hybrid modalities would contribute to this interlocking for both the design educators and design students. In the late 20th century decades, good undergraduate education is defined by Chickering and Gamson (1986) in these norms: *It* (*1) Encourages contact between students and faculty, (2) Develops reciprocity and cooperation among students,*

(3) Encourages active learning, (4) Gives prompt feedback, (5) Emphasizes time-on-task, (6) Communicates high expectations and (7) Respects diverse talents and ways of learning.

To be able to contemplate on the benefits of implementing progressive modalities with the use of digital technologies in design education, it is crucial to understand the cross-sections of various pedagogies. Pontis and van der Waarde (2020) claim that many countries are now actively reforming these pedagogical models, mostly moving away from standardized approaches and "a one-size-fits-all experience" toward new and individualized modes of learning, based on what students learn, rather than on the time they spend in a classroom. This is also described as *heutagogy*, which is about self-determined learning. It is also claimed that there seemed to be a lack of concrete advice in the form of structural models or practical strategies that can ballast the required change. In response, a set of techniques, approaches, methods, and models from outside the design domain that might support design education reformers and provide guidance for change were brought together. Design students on the other hand, still need the support for the agile navigation through the design process. According to Blaschke, Kenyon and Hase (2014), heutagogy places the student at the center of educational strategy, and focuses on cultivating students' autonomy, capabilities, and collaboration skills to prepare them to intervene in increasingly complex global contexts.

There are also signature pedagogies that were defined by Shulman (2005) which are the particular forms of teaching and learning that preserve and transmit the culture of a profession. These pedagogies are used to instruct future practitioners in how to think, perform, and act with integrity according to the canons of their profession, and are defined by three structures: *surface structure* - the observable actions of teaching, *deep structure* - assumptions about how to best transfer knowledge and skills, and *implicit structure* - beliefs, attitudes, values, and dispositions held by faculty. Davis (2017) observes that the pedagogical shifts in design education have been significant. Its expanded curricula include less artifact driven problem-solving strategies, as design problems have also changed. Stronger user-centered research focus and new digital technology skills prevailed. There has been a marked shift towards a more constructivist, andragogical, and collaborative teaching approach. Many institutions and programs offer project-based learning rooted in real-world problems, and increased student-teacher interactivity. However, it is claimed in his research that the *master-apprentice* approach is still very common. Also, according to Lave and Wenger's (1991) and Billets' (2001) studies, the process of learning becomes one of apprenticeship to the practice, by engaging with the real-world practice and understanding the process through narration, collaboration and social construction.

When identifying the objectives of revitalized design education, the shifts in educational environments and teaching pedagogies need to be taken into account, which are leading to the need for new design solutions for mental health; physical health; academic development; identity development; social, emotional and cognitive developments. As it has been observed on various occasions the creativity and progress of design students may sometimes exceed their instructors' experiences. Austerlitz, Blythman, Grove-White, Jones, Jones, Morgan, Orr, Shreeve and Vaughan (2008), recognized this situation as an opportunity where new knowledge could be created in design and requires an act of faith for both

parties, but this helps to contribute to a pedagogy of uncertainty which characterizes both learning and professional worlds, where creative responses are essential.

In order to adapt to the new design environments, which are the consequences of the pandemic, designers' habits of design thinking, problem solving, interaction with the people of academia and industry became more and more crucial due to the online modalities that had to be created. This also impacted designers' socio-cultural interaction habits. Adapting to the new (online) norm brought some advantageous communicational channels to the designers and the design habitat. As claimed by Norman (2018), right before the pandemic, in today's world where the emphasis is on interaction, experience, and service, where designers work on organizational structure and services as much as on physical products, discipline needs a new breed of designers who must know about science and technology, about people and society, about appropriate methods of validation of concepts and proposals. This approach also attests to the findings of a multilevel study by Spitz's (2015) which examined how the international design community construes the future of design education. The study suggests that the status quo in design education does not suffice to overcome the challenges that result from the dynamic changes in technology, business and society. In order to meet the requirements of these holistic approaches, the technical, managerial, cultural, political, societal aspects will receive considerably greater attention in design education. The training of skills in verbal, non-verbal, visual and interpersonal communication will play a central role.

3. METHODIZING DESIGN EDUCATION'S REVITALIZATION

As per all the preceding efforts and from all preceding to the most up-to-date ones, various methodologies and approaches improved academia's credibility amongst the industry. But staying current, with technology and applications of the professional realm, is required in order to be compatible with the industry's demands and expectations as well as preparing the design student to real-world challenges and scenarios. The shifting requirements are hinting the academia what to hold on to, what to modify and what to change completely.

One of Design Education's main approaches, as established by Walter Gropius, focuses on curriculum diagram which is also known as the 'Bauhaus Curriculum Wheel'. The idea was to start with the preliminary courses to study basic forms and matter studies in preliminary workshop, going through five study areas and finally finishing with building, testing, and engineering phases. The fundamental study areas were: *(1) Study of Nature, (2) Spatial, Color, and Composition Theories; (3) Study of Materials and Tools: (4) Study of Construction and Representation; and (5) Study of Fabrics*. Design education should also be based on encouraging design thinking, raising curiosity, cultivating debate, creating free-and-critical thinkers while raising the consequent generation of designers to be more tolerant, emphatic, environmentally conscious and humanely creative by acknowledging the fact of any global, local, social and cultural shifts require a design-related response. Understanding and practicing the dynamics of the

changes within the design education due to various reasons should be the key factors for establishing effective educational methodologies.

The design is generally considered to be a linear process although design thinking and design processes could be explored with linear, non-linear and circular approaches. Pontis et al (2020) outlines a methodology of direct and linear Design Thinking, in which one stage seemingly leads to the next with a logical conclusion. However, in practice, the process is carried out in a more flexible and non-linear fashion. Design process is claimed to be conducted more than one stage concurrently, or by collecting information and prototype during the entire project so to enable students to bring their ideas to life and visualize the problem solutions as a part of a more the non-linear nature of Design Thinking approach. Health and safety concerns that came along with pandemic-driven shift, or change in certain modalities within the design education, collaborative design approach between academia and industry benefited immensely by a non-linear approach with the utilization of more efficient methodologies and pedagogies of online interactions. Tovey (2019) states that the learning experiences should develop students' natural motivations and professionalize motivation to create a resilient, informed, and sustainable capacity. He claims that would be the essence of *'transformative learning*'.

In another credible model for revitalizing the design education by implementing hybridization of modalities and benefiting from the diversified online interactions with remote collaborators form all different walks of life, Evans and Sommerville's (2007) propose a product-semantic approach that introduces the basic ideas, concepts, principles, and language of product semantics and to practices them. This model is claimed be enabling students to articulate design problems in a new way, to engage in research about the meanings their designs might have for others, and to enhance their ability to defend their proposals in the face of competing discourses. It also increases the competence of translating these ideas, concepts, and principles into design practices.

4. RESULTS – WHERE DO WE GO FROM HERE?

The universal objective of design programs shouldn't only be focusing on teaching students the skill sets they need, but also promote the global and inclusive design intellect by curiously pursuing the knowledge in everchanging socio-cultural, technological, economical norms. Design students need to learn and practice developing mental models and solutions for shifting socio-cultural, environmental, technological, and economical paradigms. Design Educators' jobs should be about searching for and implementing new methodologies to understand the dynamics of all these real-world scenarios with shifting circumstances. As Jones and Lotz (2021) point out, the changes caused by emergency remote teaching meant that assumptions made in traditional studio settings had to be abandoned; invisible things had to be made real and tangible at a distance or left behind. This need to 'make visible' has arguably been the greatest challenge for educators. This also ties to the fact that online learning research the theory of learning hygiene argues that students rarely notice when things go well online but immediately notice when they go wrong. Each little 'wrong' thing contributes to an overall loss of

confidence in material and an erosion in motivation and engagement. In distance design education, this is a daily battle of hygiene as technology, demographics, and contexts shift.

There are also some key well-being and future concerns observed in design education during the transitional times of pandemic such as student concerns about not being able to find internships, cancellations of study-abroad programs and frustrations about employment uncertainties after graduation. Easing these concerns was not an easy task for the administrators, faculty or the industry collaborators because similar concerns arose from the educator's side about job securities, funding, abrupt resource cuts, physical and mental challenges. Other difficulties could also be identified as the lack of engagement during virtual lectures, online studios, and zoom fatigue weakening both the students and the faculty's the performances. But establishing a balance for all the emotional, cognitive, and physical aspects of design education should not be unpalatable and disruptive process or outcome for the students and the educators. With the help of the digital tools and benefits of online interactive platforms, all the components of these approaches could be practiced - and improved - during the collaborative projects while potentially producing significant and distinctive results. Starting from the research to the finalization, all the stages can be coordinated both by faculty and industry collaborators in either a non-linear or circular model within the integrated framework.

With the new norms, unexpected or unprecedented situations, there is a need for re-adjustment of online/remote education norms as to how they should to be re-learned and re-practiced. Each digital tool and interaction technique requires a more thorough experimentation, investigation and study before the parameters and principles of revitalized design education can be fully integrated to the current norms; established comprehensively for all parties, from students to educators, to collaborators. Academia and industry collaborators should develop mechanisms and methodologies to adapt the changing educational and collaborational paradigms on a global scale due to health, safety, and environmental concerns.

During the revitalization of the design education, a strong simultaneous understanding of psychology and technology is important. One study, by Meyer et al (2019), reveals that when it comes to courses in applied psychology or cognitive science providing students with an understanding of human behavior and the theories underlying choice, decision making, perception, attention, and interaction, most schools offer either no courses or just simplified ones. The transition into the remote learning / online education revealed that the preparedness of educators and learners in adopting alternative forms of education was questionable in terms of curriculum delivery, assessment, and overall execution of virtual design processes. These new or revised modalities have to address to key factors such as regulation of stress and well-being, creating routines to keep everyone engaged in the processes, and turning the design environments into more creative interactions. Interaction is still needed as the key component of every design program. More engaging remote-learning standards should be learned, practiced, and established within the design curricula to assist future methodologies to create better hybrid environments in design education.

The *'making and doing'* aspects of design curricula, also need to be undisrupted during the revitalization process of the academia after the pandemic. The educational spaces, dictated by density needs and other factors, ought to shift to the new norm of hybridized design education Interactional spaces such as studios, workshops, labs and crit rooms should be more adaptable for hybrid modalities; flexible for frequent turn-around; and customizable for serving educators, students and collaborators better when needed. There could be crucial pedagogical benefits to use the new modalities during and after the disruptive developments caused by the pandemic.

As a result of hybrid teaching modality with the emphasis on online interaction and the technological improvements, virtual interaction is becoming crucial in the revitalization process. This gives professional reviewers and collaborators a progressive opportunity and freedom to step in at any given time within the research and design development phases. This also enables direct feedback and evaluations for/from all parties at every phase of design. By moving to remote learning modalities, academia realized certain beneficial aspects of utilizing new digital applications and solutions to bring much needed innovation to design education. Reducing the extra burdens such as commuting or other disruptions during active hours helped the academics to be more productive in various areas. Testing and simulating the design ideas within the virtual environments played a critical role within the new norm of design education. There are some relatively confirmatory developments in various fields of work that the new remote-working environments are creating more efficient working outcomes. One example for this efficiency could be observed and justified with the Social Security Administration which became more productive by shifting to remote working in during the pandemic, as Naylor (2020) reported.

Transformation from the debilitated methodologies and pedagogies of design education to the new will also help the industry to condition itself with the capabilities and potentials of academia. Just as the design process is being *experiential throughout its processes,* design education could also be benefiting from this experientiality. As a part of these efforts, enhancing the interactional experiences on virtual environments to give students direct feedback by utilizing digital medium would prepare them for a more familiar future working environment where they are going to be facing a lot of digital interaction during the client meetings, design thinking, problem-solving processes and design development as examined in a case study by Elcioglu (2020). According to this case study, getting online real-time and progressive feedback from their faculty and industry collaborators at any given time throughout their projects, proved to prepare the design students more cohesively than some in-person modalities for conditions of remote-working and simultaneous client relations.

Another responsibility of design education is about connecting the design students to employers, collaborators and academia. As a part of this responsibility, and especially with the shift to the online/remote learning modality, there is a new potential to bring different perspectives to teach students how to prepare themselves for remote working conditions required heavily as the industry progresses with the requirements of working globally. Collaborative projects prove to be effective helping the industry collaborators as well as the academia to broaden their collective perspectives on

new strategies with new generations. This would potentially grant design students find internships and possible future employment with ease and without being physically present in the facilities of their clients, collaborators, and employers. This also would keep educators and students engaged in and be more up-to-date with current advancements of both industry and academia.

5. CONCLUSION

With rapidly changing conditions on global or domestic scales, design education will always require adopting new methodologies with more improvisational, interactive educational models and more vigorous industry collaborations leading to more realistic scenario building, for the students as well as the faculty. The shifting modalities such as remote-working, distance design education and online course creation during and after the pandemic also require the faculty to identify the issues, construct and implement different methodologies involving new perspectives and approaches to teach design students across various courses and settings. New venue creations such as (virtual and physical) studios, workshops, labs; balancing social interaction of studio culture; the need to design the peri- & post-pandemic classrooms, workshop, and studio setting; better utilization of online platforms like Canvas, Teams, Zoom and/or Blackboard to give and get instant feedback for both sides of the table would revitalize the design education experience and effectiveness. Academia should develop itself with the participation of students, faculty and the collaborators to create meaningful learning and sharing experiences in the areas of instructional design, hence benefiting from educational technologies and multimedia production capabilities. The volume of online modalities and distance design education that should stay and/or be tolerated after going back to full in-person environment of the campus would also be crucial to prepare students for a future that entails a lot of remote-working scenarios. The disruption caused by the pandemic might indeed help the design education to revitalize and reenergize while enabling itself to make the jump to the new standards by harmonizing old and new methodologies.

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