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Contemporary art and critical perspectives in industrial design education

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ABSTRACT

In this article, the transforming impact of two contemporary art related elective courses offered to sophomore and senior industrial design students at an undergraduate industrial design program is examined. Increasing discussions indicate that industrial designers' practice field is expanding, requiring them to pay more attention to the ecological and societal concerns impacting commons while improving use experience towards Industry 4.0. These concerns are reflected upon the educational material. In this article it is argued that exposing industrial design students to contemporary art as part of their curriculum can have an extended impact on how they perceive industrial design as part of a bigger contextual practice framework containing ecological and societal values rather than mere market concerns. In this research, responses to the introduced contemporary art related content were collected based on 48 semi-structured student interviews and student work. A thematic analysis of the reports indicated that the students' learning experiences in the electives contributed to their self-perception as industrial designers and had a role in constructing the meaning and aim of their future professional identity.

KEYWORDS

Interdisciplinary design; design and contemporary art; sustainability; critical design; design teaching

Changing boundaries of industrial design

The field of industrial design expanded as it increasingly merged with management, engineering and marketing due to transformations in the nature of industry requiring strategic involvement of design (Meroni 2008). The first curriculum of industrial design education was founded for an industry based on mass accessibility of products and standardization for efficiency, even at the expense of limiting customers' choice. This was best put by the great industrialist Henry Ford, with his recognized quote for all Ford T being painted in black. As opposed to this, today industrial production includes an unquestioned embrace of customer demand, distributed manufacturing, and mass customization involving users' individual customization capabilities through additive manufacturing. The Digital Revolution led to the Third Industrial Revolution, where the Internet and emerging digital technologies such as accessible 3D printing and Internet of Things foreshadow a society where connected individuals and communities produce, share and circulate their own resources (Rifkin 2011).

As we move towards Industry 4.0 where distributed smart manufacturing is adopted, industrial design and its education cannot be immune to the changing nature of industry.

Industrial designers, besides designing objects, are taking part in service design and product-service systems, particularly as advocates of users, following the legacy of Henry Dreyfuss, Henry Dreyfuss Associates and Tilley (2003). Since the 1990s, the role of the practicing designer has been evolving from product architecture aiming at ease of use function to strategic creation of user experience through use narratives of artifacts, considering their systematic relationship and their services (Morelli 2007; Press and Cooper 2003; Tan 2012). Meanwhile design has been embraced as a liberal art of its own kind by the community (Buchanan 1992), connected with management and service design (Morelli 2002, 2003, 2006) and imbued with strategic abilities (Fry 2009) for a more sustainable society as a strategic element of future material culture. In 2016, at the 29th General Assembly in Gwangju, the nonprofit professional society International Council of Societies of Industrial Design (ICSID) renewed the definition of industrial design previously configured by Tomas Maldonado as: *'a creative activity whose aims is to determine the formal qualities of objects produced by industry. These formal qualities are not only the external features but are principally those structural and functional relationships which convert a system to a coherent unity both from the point of view of the producer and the user. Industrial design extends to embrace all the aspects of human environment, which are conditioned by industrial production'* (World Design Organization 2017a). Based on Newell and Simon's (1972) rationalization of design as cognitive problem solving, although not referenced, the new definition of industrial design was expanded in 2016 as: *'a strategic problem-solving process that drives innovation, builds business success and leads to a better quality of life through innovative products, systems, services and experiences'* (World Design Organization 2017b). The industrial design profession now officially contains design of services and experiences besides industrial products. The expansion of the borders of design practice increased the complexity of design, locating it theoretically on an inter-epistemological basis; in other words, at the intersection of intellectual fields (Tabak and Farbriariz 2012). In this regard, change indicates that the increasing responsibilities of industrial design will have a larger impact in industry afterwards on society.

Traditional industrial design education needs to be reconsidered, since the flexibility of production gradually implemented in industry provides opportunities for industrial designers to include criticality and experimentation in their processes for a variety of new experiences with objects. The cultural agency of industrial design is expanding along with the expanding boundaries of the profession. But societal issues are lacking in design education (Bhamra and Lofthouse 2003; Ramirez 2006).

In his critique of the limitations of design education for ethical intellectual production, Findeli (2001) defined three paradigm characteristics of our time: *'its materialistic underlying metaphysics, its positivistic methods; and its agnosticist, dualistic worldview'* (Findeli 2001, 5). These characteristics, although challenged in humanities, social sciences and fine arts, continue to be powerful in industrial design education, research and practice. As a consequence, industrial design education may be missing the meta aim of sustainable betterment of organic and inorganic life by creating unnecessary functional problems, instead of demystifying existing underlying problems. This mismatch was widely argued by John Thackara in *In the Bubble: Designing in a Complex World* (2005), where he pointed out that to produce an ultralight laptop, several times its materials and energy is consumed. Lightness as a design

concept is misrepresented. Hence, a critical approach in design education besides an affirmative one may unravel hidden problems in industry.

In industrial design programs with emphasis on engineering innovation within a traditional curriculum, students are trained to create added value to consumer goods for the marketplace, as historically demanded by industrialization. Design is characterized as rational problem solving with a project development process, based on optimization theory by Herbert Simon. Therefore, students may have limited experience in undetermined problem solving, abstraction and conceptualization. It has also been observed that addressing undetermined problems in class is still quite difficult in design programs, if not lacking. On top of this, industrial design students occasionally report that they regard having to design a mass-produced consumer good as a constraint on their creative potential (Wang 2010).

There have been influential critical approaches in design, such as the examples of Dunne and Raby and Krzysztof Wodiczko. They have been presented in exhibition contexts and they have not reached industrial production. Therefore, critical practices reach a limited community. In this regard, introducing criticality to formal industrial design education may restructure a wider relationship between intellectual production and industry.

Based on the transforming ability of fine art and applied hands-on experience in the art-related electives, I argue that strategies of contemporary art can be one of the resources for students to gain a critical perspective of industrial design and our material culture as its physical manifestation. This article reports a long-term experience where conceptual and critical thinking was introduced to industrial design students through strategies of contemporary art. The findings indicate that incorporating contemporary art in design education raised awareness of industrial design students of the possibilities and responsibilities of transforming the profession in the context of the changing industry. Although this is a single case study about a particularly engineering-oriented school, this subject matter, its method and results can be useful for a wider context.

Contemporary art and industrial design: a new encounter

In traditional industrial design practices, materializing consumer research data plays a substantial role in the product development process. In the new industrial era, artistic strategies for industrial production have potential for proactive 'what if-ism' and 'why not-ism' daring to change consumer behavior.

The transforming ability of fine art can be sought in two characteristics: (1) the accumulated experience of interdisciplinary practices in fine arts production is larger than design; and (2) responding to the amplification of consumption, pop art and its follower genres of contemporary art explored the impact of design production on the society and environment. Among numerous artists, Andy Warhol, Jeff Koons, Donald Judd, Haim Steinbach and Jason Dodge gained global recognition with their critical artwork about design itself. The multifaceted relationship of art and design was pointed out as DesignArt by Alex Coles (2005). Andrea Zittel explained her critique of modern and industrial design as:

'And what happened, then, was mass production, and the Industrial Revolution happened. And all of a sudden, it seemed like everyone would have the same goods. What really appealed to me about it was that, before, things like white walls, functionalism – things that could be mass-produced – all these things represented poverty. And all of a sudden, they were

reinterpreted. It was like an ideological code that said: all these things that meant you were poor, all of a sudden became the moral elite' (Art21, 2016). Zittel first designed simple and accessible living units with limited space that develop an emotional conversation within dwellers by their different inhabiting experiences. These units are designed with minimal material and contain several functional parts in minimal space. Also, Zittel developed an organizational service design framework where people can sign up to stay in her living units as a community in Joshua Tree, California within the context of art.

Professional artists have been critical about design in their practice, when professional designers have had restricted opportunities to do so. A handful of recent examples indicate that some designers also combine artistic strategies with design knowledge and methods to ask questions about the human condition. For example, since the 1990s in Dunne and Raby's work, product design has been extended to designing territories and citizens of a country, involving futuristic elements of fantasy yet not disconnected from an anthropocentric viewpoint. Their experimental approach to product design has been named critical design, and has been well embraced by the literature being widely cited by the research community. Another example of reconfiguration of design practice can be observed in Wodiczko's seminal work, where he has been using a blend of art and design skills to criticize homelessness, immigration, alienation and love of war to raise mass awareness. Wodiczko has been developing critical vehicles based on participant interviews with the homeless of New York City (Wodiczko 1999). This approach has been named as interrogative design. In other examples, Michael Rakowitz's paraSITE indwelling develops inflatable sleeping shelters for urban use (Rakowitz 1998), and Stephanie Syjuco hijacks brands for DIY by making replica branded bags with crochet. In these works, artistic strategies can be identified and product design knowledge is used for unusual needs (Von Busch 2010). Design knowledge such as manufacturing, material selection and user research are incorporated into practices addressing societal issues and making statements instead of developing use experience. For the abovementioned reasons, these designers' and artists' practice were part of the courses.

Art material in industrial design: two courses

Taking off from unorthodox practices stemming from the blend of artistic strategies and product design knowledge reported above, two elective courses¹ were offered to product design students at Istanbul Technical University (ITU), within the Industrial Design Undergraduate Program in 2011, where I am full time faculty.

Trained first as a product designer in Istanbul and then as an artist in the US with the aim of eliciting critical approaches of contemporary art to design, my personal experience also played a role in configuring the theoretical basis of the classes and their coaching.

The electives, named 'Interaction Between 20th Century Modern Art and Design' and 'Contemporary Issues in Design',² were successfully completed in the past five years by 111 students. Twelve of these were exchange students from Europe and the US. Having at least one exchange student in the class was enough to make an international group of students.

The classes are offered to 3rd- and 4th-year students, so that students had sufficient domain knowledge to be able to question their future profession.

The content of the classes were the first tools to expand the literacy of art for product design students to enrich their design experience beyond convergent design methods composed largely of determined problem solving.

In their comparison of 'design as problem solving' theorized by Simon, and 'design as reflective practice' theorized by Schön, Dorst and Dijkhuis stated that '*design is not just a process or a profession, it is experienced as a situation that a designer finds him/herself in*' (Dorst and Dijkhuis 1995, 264). In later work, Dorst (2011) proposed the concept of 'design field,' besides 'design as a process' and 'design as a profession,' referring to Bourdieu's (1984) definition of 'field' as an autonomous, socially situated domain where practices take place. Since varieties of artistic creation methods escape categorization, in the classes industrial design activities were considered as part of a 'field' including unidentified parts. Here, I searched for the unknown relationship between contemporary art and product design from the students' perspective.

For this research, 48 students who completed these courses, including eight exchange students, were interviewed.³ Emerging issues about the unknown interface of contemporary art and industrial design based on student experiences were elicited from the interviews. In addition, students were asked to write an argumentative essay on the relationship between art and design as part of the class requirement. Students' view of the relationship between art and design in these essays also provided evidence to compose the arguments in this article.

The classes offered a set of theoretical readings, exhibition visits, topic presentations, making an artwork and exhibiting work together. Minor updates were made every semester based on student feedback. Trained first as a product designer and then as an artist, in these classes I coached students to discover that art-related content is not alien to their designing. As a strategy, explaining art material, both in theory and practice, with the familiar methods and vocabulary of product design domain was key to introducing unfamiliar content to the students. Contextualizing product design beyond the constraints of a sole determined problem solving process or a professional activity for mass production included an unlearning process for the students scaffolded with professional domain knowledge through my coaching.

To teach basic concepts of the critique of production and consumption, readings were assigned and discussed in class. For example, excerpts from *The Age of Art in the Mechanical Reproduction* by Walter Benjamin, *The Death of the Author* by Roland Barthes and *The Society of the Spectacle* by Guy Debord were assigned to students a week before class discussions. Key concepts in each related article were clarified because students had limited liberal arts backgrounds. After that, the meaning of the concepts in these readings were elaborated with examples of contemporary artists and designers whose work address the opportunities and consequences of mass production and material culture through a critique or intervention in modernity. With this aim, the students were assigned artists, designers and curators who work at the intersection of art and design, mostly using word and image together, such as Art and Language, Barbara Kruger and Jenny Holzer; or who follow conceptualism and minimalism, such as Donald Judd, Eva Hesse, Andrea Zittel, Sophie Calle and Felix Gonzales Torres. These artists were chosen to provide evidence that with artistic strategies, industrial design can be regarded as a set of skills that can be deconstructed and reconfigured for product betterment aims. For example, although Andrea Zittel's practice is introduced in an art context, it investigates the meaning and role of modern design in everyday life. The

students brought in material to present in the class. The links between the work and product design were investigated, with detailed information provided by the instructor on the intersecting touch points with design. Here, students were exposed to artistic methods such as finding, coincidence, appropriation and chance operation. These were later used by students in their designs.

Another component of the classes was visiting a selection of current exhibitions in international contemporary art galleries and museums in Istanbul, such as SALT, Istanbul Design Biennial, ARTER and Galerist. Here, the students were asked to observe the use of familiar objects and production techniques to construct 'abstract ideas' and 'make statements,' instead of determined problem solving.

The final component of the class involved making an art piece, and a group show at the end of the semester. This was a first-time experience for the students, where they were asked to take responsibility for making work and hence perform the singularity of their now-re-configured knowledge and skills, instead of designing a conventional product. As preparation for the exhibition, during the courses students were reminded from time to time to think about how they could use their design knowledge and techniques to exploit an idea as an artwork as their final assignment.

The students were not assigned a theme or a concept for their final exhibition. The gallery exhibitions in 2015 and 2016 were titled 'Once Upon a Time' and 'Tangent' after a class discussion. As shown in Figures 1 and 2, the exhibitions were co-curated and installed through experimentation and discussion in the gallery by the students.



Figure 1. Students setting up the exhibition in Spot Gallery, Istanbul, 2015.

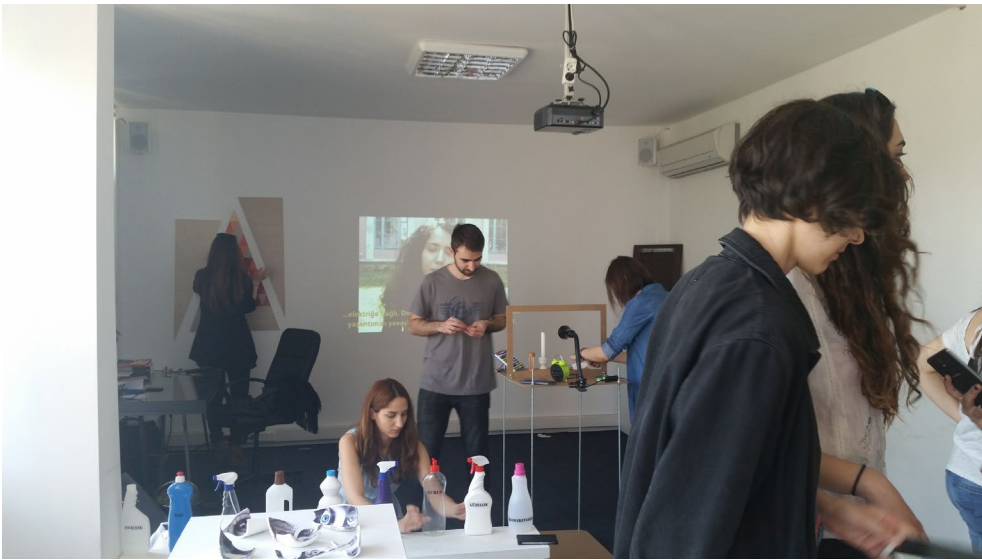


Figure 2. Students setting up the exhibition in Spot Gallery, Istanbul, 2015.

The work seen in the following figures are examples of how domain knowledge of the profession was used in conceptual art pieces intending to make statements in an exploratory manner.

The sculpture in Figures 3 and 4 is an imaginary limb; its well-crafted surface mimicking the flow of light on a consumer product is bound in the center, referring to the functional climax of a product such as an on/off switch. 'Shine' typed with lit LED lights in a matrix of unlit LED, shown in Figure 5, calls for the inner desire of self-esteem and social acceptance of owning designed items. A polyester skull is covered with eggshells in Figure 6 to indicate inefficiency of technology by covering the brain, which needs protection with a fragile membrane, as per an egg. In Figure 7, 'YOU ARE IN YOUR FUTURE MEMORY' reflects that design is constructing our future selves by the promise of future well-being carried in designed objects and media.

In Figure 8, analog and digital objects with the same function are placed on two separate sides of a table, and the viewer is asked to find seven differences between each part, although the objects are physically completely different. Nostalgia of analog objects becomes apparent next to digital substitutes. As shown in Figure 9, the broken pieces of a ceramic vase covered with prints of eyes on paper make a statement about human labor behind mass-produced designed objects. Figure 10 represents the arbitrary pedestrian qualities of the user: singularity of the individual versus masses.

As seen in the examples, although no skill was taught in the classes the students could transform problem solving and construction skills acquired through education to deploy ideas related to the meaning and consequences of mass production. Problem solving skills were adapted to new concepts introduced in the texts, and presented work and were translated into works through mundane objects and industrial materials such as a mirror, eggshells and LED lights. These examples, although not in product form, embody ideas about production and consumption by designers equipped with the necessary knowledge and skills



Figure 3. Sculpture by Ayse Yilmaz.

to translate these ideas into products if they intended to. In other words, artwork was a medium free of constraints to adopt ‘what if-ism’ and ‘why not-ism’ in industrial design.

Impact

After getting used to studying readings and examining work in relation to product design, students were able to reflect concepts into objects, some of which are in the form of installations. For the students, the main outcome of the courses was a change in their self-perception as designers through the class. Awareness about the meaning of their design activity and its responsibilities was raised. A significant number of students mentioned an increase in self-confidence because they reported that the concepts they were exposed to showed some unstated value in themselves and their design practice. As one student indicated: *‘All of us, we felt the pressure of having our projects approved. We feel more free after this class. Our point of view definitely changed’* (Student reports 2016). Another student stated that her perspective particularly changed after studying *The Death of the Author* by Roland Barthes,



Figure 4. Sculpture by Ayse Yilmaz.

referring to her design project process as follows: *'I always thought that the other party (meaning instructors) should get a definite meaning. Whatever I do, they would get something else so I said to myself I would rather make something closer to what I wanted'* (Student reports 2014). Hence, it can be argued that the course had an extended impact on students' design practices in the conventional studio.

The courses were not free from obstacles. One such obstacle was getting the students to start focusing, for the first time, on what to design, rather than how to design. In other words, it would not be wrong to say that students were searching for what was at stake during their past design activity. This was initially difficult, since students were used to responding to



Figure 5. LED installation, *SHINE*, by Dilara Akbiyik.



Figure 6. Skull, polyester resin and eggshells, by Özge Özkök.

briefs. In time, as discussions progressed students felt more comfortable expressing their ideas, without responding to briefs but to concepts discussed in readings in class, as expressed by one student:

There is a bigger connection between design and art than I thought. There were people in the past, 50 years ago writing down genius things which are still relevant today. These things you can discuss and apply to what is happening now. That is very interesting. I went back to the articles a couple of times, I remember (Student reports 2014).

Some students reported that they did not understand the pieces shown in class during the first two weeks of classes. This obstacle disappeared as we proceeded. To overcome it, some teaching strategies were developed. Students were coached to think of possibilities of meanings while designing, unlike fixed meanings they tend to propose as design concepts.



Figure 7. *Untitled*, by Ece Kaplan.



Figure 8. *Analog/Digital*, by Huseyin Ertit.

Multi-sensory experiencing was recommended, instead of singular reasoning. As a response to these teaching strategies, students reported developing a new perspective of experiencing materiality in time, expressed by one student as: *'When designing, I realised that it is possible to tell many things with a slight line. It does not have to be functional, maybe it will serve to tell something,'* and *'How to incorporate a line which I just like'* (Student reports 2016). Hence, when exposed to new art-related material, students need time and coaching to exercise thinking conceptually. Therefore, although not fully grasped by the students at the beginning, it can be argued that the concepts in the selected articles facilitated conceptualization of product design activity as an intellectual process beyond a profession as the courses proceed. Evident in the interviews, industrial design students refer to their field of operation



Figure 9. *Untitled*, by Ece Batur.



Figure 10. *Meeting Kerem*, images accompanied with text (Hello, My name is Gökem. I was born on the tenth day of the tenth month. Coincidences have be in my life since I was born . i too would like to be a part of others' lives by unexpected coincidences), by Özlem Gürtunca.

as 'design' more than 'industrial design.' In letting go of the definitions of product design and its linear problem solving process, students grasped the possibilities of their skills beyond market-oriented horizons, as seen in their final exhibition pieces.

A selection of Works made in Contemporary Issues in Design were later exhibited in the Academy Program of 3rd Istanbul Design Biennale in 2016.

Art-related material and the teaching strategies developed in these courses can be further expanded to incorporate artistic strategies into conventional industrial design education. Traditional industrial design studio education can contain theoretical readings and inspiring art practices, especially at the beginning of courses, to foster conceptual and critical thinking that addresses societal and environmental issues. As discussed at the beginning of this article, the changing industry may provide room for applying artistic strategies with these concerns in industry. In this regard, the presented case in this article may have a larger influence in the future.

Notes

1. The course catalog of 'Interaction Between 20th Century Modern Art and Design' was initially designed and offered by Maryse Posenauer Erkip when she was teaching ITU (also taken by the author in her undergraduate education). Contemporary Issues in Design was a new elective offered by the author. This article is based only on the courses' syllabi prepared by the author.
2. The syllabi of the courses are not identical but share a similar concept. Since, the courses are interdisciplinary, they were taken by several students from other departments of the School of Architecture.
3. The quotes from student feedback has been translated by the author.

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Disclosure statement

No potential conflict of interest was reported by the author.

Notes on contributor

Cigdem Kaya Pazarbasi lives and works in Istanbul where she was born and raised. Trained as an industrial designer, she completed graduate program in fine arts in San Francisco Art Institute in the US. After her PhD, Kaya Pazarbasi has been a full time assistant and associate professor at Istanbul Technical University (ITU) Department of Industrial Design (ID) since 2011 where she teaches interaction between art and design in the undergraduate ID program as well as product design studio; practice-led research methods and design for social innovation in the graduate ID program. Her experience as an artist enriches her teaching in the design programs. Kaya received BSc in ID from ITU, MFA in New Genres from SFAI and PhD in ID from ITU. Kaya has been a visiting researcher at Sheffield Hallam University and she is a Fulbright alumna.

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