

Vr Cardboard as a Design Problem

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DOI: [10.36348/jaep.2020.v04i05.005](https://doi.org/10.36348/jaep.2020.v04i05.005)

| Received: 20.10.2019 | Accepted: 27.10.2019 | Published: 21.05.2020

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Abstract

The purpose of this article is to document and convey a design process, in which VR cardboards are considered as a design problem. During the 2016-17 academic year, the students of the Department of Industrial Design designed the VR cardboard as part of the project. Design and technical research, idea and concept development, script writing, product development, DIY (Do it yourself) and evaluation processes were carried out on VR cardboards, during the class, which was attended by a group of 56 students. In the article, primarily the design problem is defined; then, other processes under the topics of design process, final products and evaluation are explained respectively. This article discusses all these processes in company with the student projects.

Keywords: VR Cardboard Design, Creative Design Studio, Students Projects.

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INTRODUCTION

An experience at the present moment: vr-cardboard

VR cardboards offer us a paradoxical perspective to question the reality experience. When we use VR cardboard, do we perceive the reality of the present moment or the virtual reality shown to us? Is the reality of the present moment shadowable? Or is the moment that we are in "now" impossible to be shadowed by any factor? Experiencing a virtual reality in the present moment becomes even more evident as a paradox with the following words of Ponty:

"The enigma derives from the fact that my body simultaneously sees and is seen. That which looks at all things can also look at it and recognize, in what it sees, the "other side" of its power of looking. It sees itself seeing; it touches itself touching; it is visible and sensitive for itself. It is a self, not by transparency, like thought, which never thinks anything except by assimilating it, constituting it, transforming it into thought—but a self by confusion, narcissism, inherence of the see-er in the seen, the toucher in the touched, the feeler in the felt—a self, then, that is caught up in things, having a front and a back, a past and a future.... This initial paradox cannot but produce others. Visible and mobile, my body is a thing among things; it is one of them [1]".

"Being oneself" between a past and a future that Maurice Merleau-Ponty stated happens at the present moment and this reminds us of Venturi's words: "In short, that contradictions must be accepted"[¹] P:41 (). In the theory of complexity and contradiction, Venturi has presented us with an insightful look that suggests paradoxical situations to be addressed through The Phenomenon of "Both-And". In the light of this view, when we use VR cardboard, we can say that we perceive both the present reality and the virtual reality shown to us. Waskul matches the meaning of body experience and meaning with the concept of "looking-glass", with his words below:

"Meaning is embedded in our experiences within the world; meaning is not apart from either those embodied experiences or that world – an approach evocative of classic interactionist arguments. In fact, this phenomenological approach sometimes often shares a nearly identical "looking-glass" understanding of the body and experiences of embodiment." P:8 Waskul, Dennis[2]. The Body in Symbolic Interaction. 1-18.

In the design process, "body, object and experience" evolves towards "usability and aesthetics" and a final product that is useful, robust and pleasant is

¹ Venturi's words are transferred from the following source: David Jones, Efioc and Artist, Chilmark Press, New York, 1959.

aimed. VG cardboard, in terms of a design problem, takes its size from the human body, and it is expected not to disturb the body when used, conform to the body, maintain its integrity while functioning and being stored, and look elegant. The products that emerged at the end of the design process conveyed with this article can be seen as the materialized states of this superimposed time perception. This process is detailed under the following topics.

VR Cardboard Design Brief

This topic is one of the projects of the students of Industrial Design Department of Anadolu University Faculty of Architecture and Design in the 2016-17 academic years. The project group consists of 56 students; the design process is carried out by academicians Nazmiye Öztürk, Serpil Erden, Özgün Dilek and Tahsin Demir. The study group is a homogeneous group consisted of third grade students, who have done project studies in the previous classes. Within the scope of Product Design III class, the following design brief was given:

An experience at the present moment: vr-cardboard

Design a VR cardboard that responds to all three of the following definitions.

1) Serving one of the following purposes,

- Personal development
- Education
- Health

2) Have a script that answers the following questions,

- a) What kind of a time experience will it provide?
 - Why?
- b) How does it serve its purpose?

- What are the requirements for it to serve its purpose?
 - c) Who is it for?
 - A person or a group? Who does this design aim at?
 - Ergonomics
 - Usage
 - d) What characteristic makes my design special?
- 3) It is limited to the following material and method
- Cardboard
 - DIY (Do it yourself)

As seen in the design brief, VR cardboard use is limited to personal development, education and health purposes. Since there is emphasis on "body and experience" in the product design problem, students are expected to make the design in accordance with a scenario. Students are asked to design their cardboards in such a way that they can produce on their own. The main material of the production is limited to cardboard, and it is stated that they can use additional materials.

DESIGN PROCESS

Working schedule

As project executives, after we have decided that a 6-weeks period is sufficient for this design, we have asked the students to create their own work schedules first and deliver it in the first class hour. We observed that the work calendars usually consisted of research, idea generation, product development, and production and delivery phases. In Fig.1 there is a good sample among the work schedules:

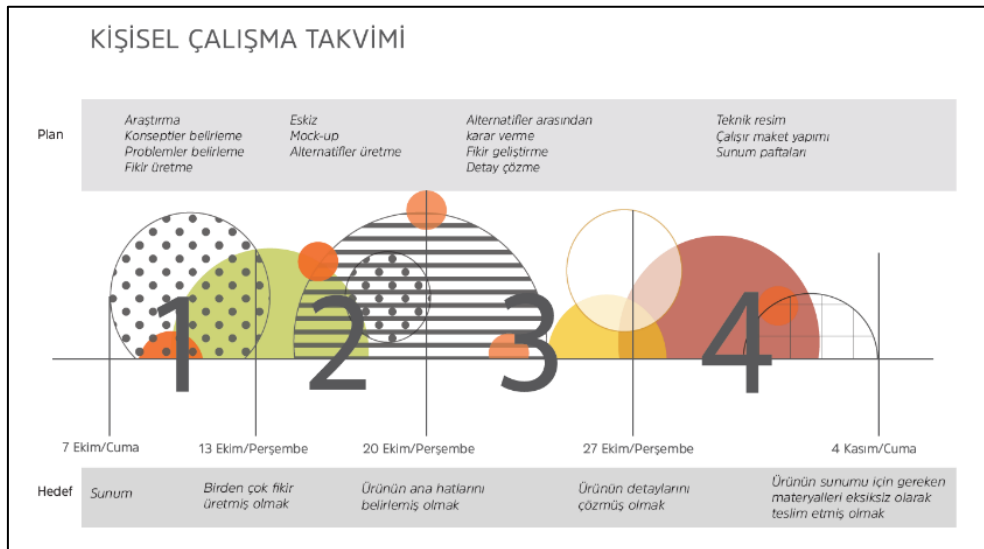


Fig-1: A work schedule interpretation (Student A. Dandık)

In the work calendar in Figure 1, we observed that the processes were more compliant than rigid

schemes with strict deadlines, as these processes were transitional and flexible within each other.

Research

In the research phase, students investigated topics such as VR and AR technologies, VR cardboard models, VR Cardboard glasses models, working principles, product differences, usage difficulties, and problematic designs. As a result of the research, the data they received were shared with each other by preparing a presentation. This stage is the preparation for the stage of generating ideas through data collection and sharing.

Generating ideas in the accompany of scripting

The stage of producing ideas was based on the "scripting the experience" desired in the design brief. Students often decided on the purpose of using the VR cardboard, after which they made additional research on this purpose of use. The script was executed in two stages. The first was the video scenario presented by VR cardboard, the second was the scenario of using VR cardboard. Of course, the same scenarios as any VR cardboard could be followed, but in this project we expected students to link the content and format.

In the process of generating ideas, the following sketch and mind mapping exercises have directed the designs



Fig-2: Sketch and mind mapping exercises (Students: B. S. Öztürk, F. Eyüpoğlu, E. Kurt, H. E. Türk, E. Candemir, S. Serbest)

The video scenario offered by the VR cardboard

As the video scenarios were expected to be prepared for personal development, health or education

purposes, among 56 projects, most of them had educational and personal development purposes. Among the prepared scenarios, the visualization of a

book, the preparation process of a gallery, butterflies and the experience of a historical place can be seen as an example in the following images: Merleau-Ponty,

Maurice. 1974. Phenomenology: Language and Society (edited by John O'Neil). Portsmouth, NH: Heinemann.

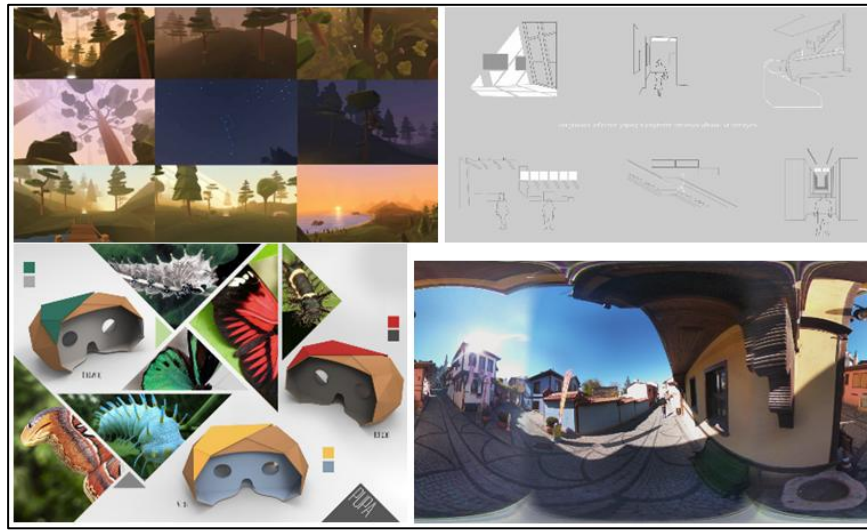


Fig-3: Visualisation of the scenario (Students: A.Tuna, S. Serbest, M. Şimşek, D. Varazlı)

The video scenarios were useful for clarifying what students designed VR cardboards for. These scenarios had a guiding characteristic in form and function decisions of VR cardboard designs. This phase also means that materials that serve for educational, health or personal development purposes are prepared in advance. This means that, for users, what they will experience at the time they try VR cardboards.

VR cardboard usage scenario

The utilization scenario of a product is a process design that includes the installation of the product and its being prepared for an experience. Both the video scenario and the VR eyewear setup/usage scenario are important parts of this design process. Decisions regarding the use scenario of VR Cardboard are decisions made when designing the product. Images of this process are presented below:



Fig-4: VR cardboard usage scenario (Students: M. Ertuğrul, F. Eyüpoğlu, T. Durmuş, İ. Atalay, A. Tuna)

As can be seen from Figure 4, the processes at this stage are sorting operations, such as how the cardboard is folded, i.e. what tasks are needed to be done for setup and use. Because these processes vary according to each design and vary according to the design specifications, they have created student scenarios with different studies. For some designs, the graphical description was sufficient, while for some designs the photographs of the product are used.

Final products and evaluation

In 6 weeks, 42 of the 56 projects developed from the research stage to the production stage fulfilled the objectives of the course. The majority of unsuccessful products could not become three dimensions or were delivered with missing parts. Products that are producible and usable are considered successful. Among these successful products, the ones that offer innovation in terms of form, structure or function can be seen in the following images.



Fig-5: TECHNIC, designed by H. Görgün

In this project, the student designed a VR cardboard to solve the difficulties encountered by the students in Technical Drawing classes. This cardboard, which animates complex geometries in 3D, has received positive feedbacks for being innovative in its own form and has been criticised with the idea that an easier folding and setup model should be developed.



Fig-6: PUPA, M. Şimşek

In this project, the student designed an eyewear that informed the enthusiasts about the butterflies. The form, function, and innovation proposal for folding are evaluated positively, and this design is a leading one among the works that are regarded as examples.

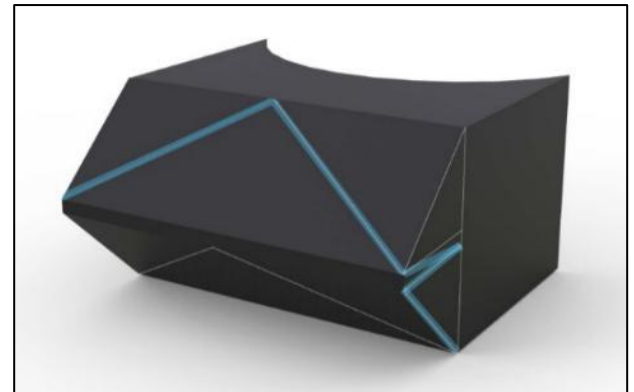


Fig-7: VR CHANNEL, E. Candemir

This VR aims to give information to children about space, galaxy sky science. The product has been evaluated positively because a consistent relationship between scenario and product identity is visible. Problems related to product modelling and expression was criticized.



Fig-8: TR BOX, F. S. Külünk

In this scenario, which aims to teach children traffic rules and traffic safety, the student completes a puzzle at the same time as he finishes a topic. This project came to the forefront with its easy installation and was evaluated positively with the attention in model and presentation sheets.



Fig-9: FOLD VR, A. Tuna

In this study, the student designed a VR cardboard where short stories were voiced and visualized. It has been criticized for not using innovation in product use, but having the shape of the book when it is folded is deemed as innovative and creative.

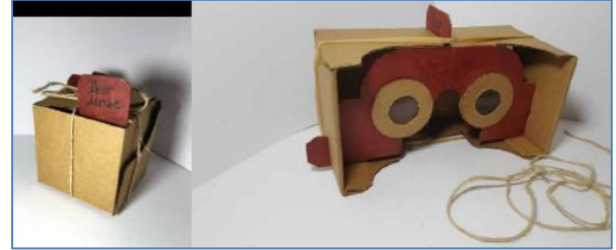


Fig-10: CUBE, M. Ertuğrul

In this study, the student designed the extreme sports experience as a gift. The design, a closed gift box, could easily become an eyewear when it was opened, and it was considered innovative and creative.

As a design problem, VR Cardboard has been a process that allows us to design an experience and shape that form, function and structure. The design examples here show us that every experience can lead to a different design.

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