

Designing for children:
How to do research on the experience of children for architectural
design?

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Designing for children in Architecture

I INTRODUCTION

This paper is written as a final assignment to the lecture series on Research Methods. The lecture series is designed to make us aware of the action and the research we make when designing a project. The Master of Architecture at the TU Delft is an academic study for which one must learn to do a specific type of research. This research must be based on academic literature and research and will lay the foundation of the design.

During the bridging year we as student were briefly introduced to a few research methods. "It is stated that designing is learned by doing and by making explicit, it is important to take into account the design at hand, architectural principles, methods or styles and the design process" (van Dooren, 2013). One of the topics was on making the design process explicit, as read in the research of E. van Dooren. This article introduced me to types of research methods and taught me where one can start when designing. That for instance, the frame of reference is an important tool that can be utilized. My background is in engineering not designing and not in architecture. Therefore knowing the process of the research, one does prior to designing is important. Because its arguments the choices one makes and gives guidelines, structure and meaning to one's design.

Prior to the lecture series and after having had the short introduction to research methods, I was vaguely aware that designing was based on a certain structure but not that this structure is connect to aspects like heuristics, social practices, typologies, spatial narratives, territorial scales and material culture. Following the lecture series of Research Methods, I have learned the different ways in which one can base their research on. Research containing observation and experimenting. To start a research by discovering arguments and insights that can further help the design process. In the book of Architectural research methods by L. Groat (2013) one can find the different ways to research. This is called methodology; the tools and methods we use to increase/ improve our knowledge (Meija, 2018). This book has helped giving me an insight to build a stronger research question and to know what the consequences were of every method.

The lecture series on research methods has taught me that the architectural field covers both architectural works, such as the buildings themselves, and architectural philosophy. Philosophy concerning topics as atmosphere, culture, heritage and space. Also known as the metaphysical world. Within the field of architecture, architects acquire this type of knowledge from an academic institute or by practicing within the field. Development of new architectural information is called architectural research. This research as defined by James Snyder as a "systematic inquiry directed towards the creation of knowledge" (Goat, L. N., Wang, D. (2013) p.8). In the book of Abraham Kaplan, the conduct of inquiry, it is stated that Methods is the study of the process inquiry rather than resulting in product inquiry (Kaplan, A. (2017)). When writing about research methods it is commonly adopted that there is a systematic distinction between strategy and tactics. The difference between the two lies in the meaning which is loosely derived from military sources. The term strategy being defined as "the skillful management and planning of anything". And tactics referring to "any skillful move" (Goat, L. N., Wang, D. (2013) p.10).

When applying the right method of research and collecting the right documentations, the knowledge and research can be repeated and learned from by others in the field of architecture. In turn this will be further added to the knowledge of architecture. The practice of architecture concerns itself with space and how we use it. To fill in the design we collect knowledge acquired from different types of methods from around the globe. Filtering what is useful and can contribute to our design is a necessary skill. A wide range of research methodology is used within architecture. Most approaches are used unconsciously. Such as a heuristic approach.

My graduation project follows the chair of Heritage and Architecture. Within that chair the project concerns the revitalization of the Hembrug area in Zaandam. This area used to be used as a military factory. Due to its secret nature within the community, it is a non familiar place for most residents of

Zaandam and Amsterdam. The municipality of Zaandam wishes to re-open the area and make connections to the city Centre of Zaandam and in the future connections towards Amsterdam. Within the chair of Heritage and Architecture we are asked to think about our design to respect the history and contribute to the present and future. At this point I was still trying to link the position of the chair Heritage and Architecture and research methods. I came across this quote in the book 'Designing from Heritage' written by Marieke Kuipers and Wessel de Jonge, which made things clearer. "It goes without saying that all acceptable approaches require careful preparatory research -continued throughout all subsequent phases – to provide guidance to decision-making and implementation" (Kuipers & de Jonge, 2017, p.103). Provided, they were talking about existing buildings but it very much applies to all other means of research. And as such stated by Jorge Mejia in his presentation on Heuristics, research does not only occur at the start of the project but it is something that is done throughout the entire process of the design project ¹.

II RESEARCH-METHODOLOGICAL DISCUSSION

Within the studio Heritage and Architecture, we were asked to choose an important issue and combine that with something we always wanted to design. My choice was to design a place that would be used to better the society's needs. And an important issue to me is that of societies mental health. Dealing with a depression myself, I became aware of the problematic issues within the national mental health system. Due to lack of personnel and long waiting lists, a solution is offered when it is too late. Factoring current social dilemma's and my own interest, my concept is to design a Mental Health Resort for the age group of 5 to 16 years. This age group is chosen because there isn't a specific health care facility targeted towards children when there is a clear difference in how children and adults react to spaces. Our fast passed and technology driven society demands more of people now than it used to of previous generations. This is also caused by our generation to be more open to globalization that we become more aware of dire situations all over the world. This causes more people to become mentally strained. Therefor more mental illnesses are occurring. Given that young people are meant to be bare more in the future it is wise to give this younger generation attributes to combat metal health illness. The design focusses on two factors, mental health and designing for children. This report will focus on how to design architecture for children. My research question is "How to do research on the experience of children for architectural design?"

What interested me the most during the lectures was the lectures on spatial and social practices. Giving my chosen theme in my graduation studio, it was interesting to see how one can do research on this topic. Within the scientific field, methodological research is very developed but in the case of architecture it is behind. Here it stays within the group. Meaning collaboration with other fields is rarely done. Notably in the case of academia, i.e. student research. When research stays in the same closed group of peers, it forms a great risk. Especially when often, as is with architecture design, the final design object is a prototype. There isn't measure of testing and reflecting.

What would be interesting in my case is to do a collaboration with psychologist and other pediatric specialists. This type of research will use a social/ praxeological way of researching. It will put the target group as the central subject and is very helpful when designing for a different group then oneself. The users will provide a different view on the design and research but other involving parties can too.

But in order to design for children, one must understand what it is like to be in their shoes again. This means seeing and experiencing spaces from their eye-level and what one can reach or climb within the limitations of their measurements.

"One places oneself at the center, designates oneself, measures oneself, and uses oneself as a measure" (Lefebvre, 1991. P.182).

¹ Jorge Mejia, Lecture on Architectural Heuristics (Delft: TU Delft – Research Methods, 5th of September 2019)

Praxeology defines as the study of human action based on notions that humans behave in a deliberate manner, as opposed to behaving in an uncontrolled manner. Praxeology focusses on the reason why people take certain actions, knowing that all actions have a certain reason.

Looking at human behavior and theories I found the self-determination theory (Deci & Ryan, 2000; Ryan & Deci, 2000). It is based on the notion that there are a set of universal psychological needs that would fulfill human needs as satisfactory and highly essential for a healthy person to function, autonomous from social and cultural position. These needs are categorized as; autonomy, connectness and competence. Autonomy refers to the sense of conscious choice; connectness refers to closes relationships in different areas of one's life; and competence refers to the sense that one can control their environment. In the self-determination theory, the human well being is the main important theme. It is believed that the human is an active organism that needs development and psychological growth. The self-determination theory will be used as a way to gather information on what the target group requires to fulfill human satisfactory and that will be translated in architectural design. Changing how one perceive space.

As the French Philosopher, Henri Lefebvre stated, space serves an important tool for cultural and historical development. In the physical as well as the metaphysical sense (Lefebvre, 1991). Space can be occupied, it can be used, consumed and created, connecting to the social relationship that occurs within or with it. The connection between Deci & Ryan and Lefebvre is that both valued the importance of self-management. In tune with the need for children to become more independent and self-aware as the grow and develop socially.

Also, a good reference for design are the works of Herman Hertzberger. Most famous for his structuralist design and the Montessori school in Delft. Here it is evitable that he designs with the user in mind, the children occupying the building. Structuralist architects like Hertzberger designed architectural elements for humanistic design. This is called polyvalent space; the undefined and steered limited space in which a variety of functions and actions can take place (Hertzberger, H., 1991).

III RESEARCH-METHODOLOGICAL REFLECTION

The research done for the graduation studio within the chair of Heritage & Architecture is done mainly by observation, literature studies and fieldwork. This way of research seems to be one sided and void of target user connections. We are more encouraged to use a design as reference and observe rather than immerse oneself as the target user.

As previously stated, children see things from a different perspective, as well as at a different eye level. The book *City at eye level for kids* takes a variety of different methods to explore children's behavior in spaces. Such as conducting workshops to see what children would do, then analyzing their behavior. Or listening to children's needs first hand and designing from there. The book is helpful in the way that architects usually don't use the eye level to experience the city. Mostly the birds-eye view is dominant. These architectural sketches are usually void of people, thus not creating realistic views. *City at eye level for kids* uses fieldwork as a design too. Fieldwork is the tool to gather information or test an apotheosis to form a hypothesis (Groat, L. N., & Wang, D. (2013)).

To get high valued conclusions one must use multiple methodologies (Bultstra, H. Dueten, B.K., 2016). Fieldwork (social practices) incorporates the practice and theory to determine more plausible and valued conclusions to a research.

A modern way of fieldwork is to make use of modern-day tools. The new tool of virtual reality can help in the case of fieldwork and immersing oneself as the user. Creating a world that looks as if it is scaled bigger to imply that you are the child (the user) can help bring visual what is lacking in literature and case studies. Virtual reality can bring the physical world and the theoretical world together.

What remains the most important aspect is human activity. I would like to reflect on this by a quote from Ludwig von Mises; 'Human action is a conscious behavior, mobilized will transformed into action, which seeks to achieve precise goals and objectives; it is a conscious reaction of the ego to the stimuli and circumstances of the environment; I is a reflexive accommodation to that disposition of the environment that is influencing the life of the subject'². In conclusion the stimuli of the environment has influence on people's behavior. Meaning that the principles of praxeology connects with human behavior. But what kind of stimuli can affect the human behavior? Do we, as architect, need to create problems in an environment to see how people react to them? Thus, finding solutions?

"Humans act, in general, with the aim of solving their problems with the aim of achieving satisfactions or the disappearance of dissatisfactions" (Perez Lopez)³.

Herman Hertzberger applied this to his design of the Montessori school in Delft. There he placed a large square protruding concrete box in the middle of the hallway. People vocalized that it would be much easier if the concrete box was moved. But Hertzberger stated that the box would then lose its power.

"At first sight it would seem that the potential of the space would be greater if the block could be moved out of the way from time to time and, as was to be expected this was indeed a point of lengthy discussion. It is the permanence, the immobility, and the 'being in the way' that is the central issue, because it is indeed that inescapable presence as a focal point that contains the suggestion and incentives for response in each situation as it arises. The block becomes a 'touchstone' and contributes to the articulation of the space in such a way that the range of possibilities of usage increases." - Herman Hertzberger⁴.

Hertzberger created a problem within the school environment. Resulting in human activity in his architectural design.

IV POSITIONING

Seeing how Herman Hertzberger uses 'problems' or obstacles to map the user is very interesting. Because in the same way he used a protruding concrete box, in another design he used an introverted concrete box. Also, a school. But he knew that both 'problems' would be seen different. One was experienced as an active element, while the other served a protective and inactive element. The difference was the behaviors and needs of the building's user.

In the lecture of Klaske Havik on 'investigating spatial narratives' it was stated that 'narrative is never a singular story. There are many stories of different people, therefore architecture should never portrait a singular story. Experiences through the users makes clear what those stories could be. In the case of the methodology of the chair Heritage and Architecture, praxeology is not one of them, Looking at the types of research that has been done before me, I can take away from it that in order to have success conclusions I must integrate multiple methodologies. In the chair of Heritage and Architecture we all start with a Typological, semiotic type of research. Where we learn the ins and outs of the entire building before starting a design. The approach of praxeology would be a fitting and complementary next step. Once you learn everything there is on the existing build object, you start to learn everything there is on the future user. To design a building that will be successfully used, I believe that the architect must now and is aware of all the attributes of his users.

To conclude the question stated previously in this paper, "How to do research on the experience of children for architectural design?", I believe in a multiple way of research. Meaning there has to be a

² Ludwig von Mises, Human action (1949)

³ Perez Lopez, Praxeology or human action theory (September 2017)

⁴ Anne de Zeeuw, Carina Stoveken & Lenneke Hoekstra. Delftse Montessorischool: Herman Hertzberger. (n.d.)

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dual type to make conclusions successful. And that one must look to different fields concerning the theme of the design project, as one cannot find all the answers in one's own field. Thus, also providing one's field with more knowledge for future research. Immersing myself in the user's view is a great tool to use. In this manner, I can make informed design decisions that will benefit the way of interaction with the build environment.

As seen in the book *City at eye level for kids*, the method of using active workshops as a fieldwork study is an excellent method to gain more knowledge on the user. But in the case of academic research, it will not be easy. A workshop like that requires more work beforehand. But I believe that the curriculum does not offer that time.

The lecture series and the literature studies of Research Methods has really helped me in recognizing why one must conduct research and that there are many methodologies to choose from. Finding the right ones will provide more insight into the design. And I believe that it will make for even more creative designs.

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