

THE PURSUIT OF THE ARCHITECTURE STUDENT

Historical Research on Architectural Educational Systems and the Position of the Student

***LSRM FINAL ASSIGNMENT
Self-Assessment on Research Methods***

***Hidde Manders
4641523***

Msc 3. Faculty of Architecture and Built Environment. TU Delft

I INTRODUCTION

Architecture is a professions that does not lay in either the sciences or humanities only, it is in the grey between these two studies. Architecture is the sciences, arts and humanities synthesized. The different layers with which an architect is able to work with, ranging from the scales, materials, methods, styles and functions all require their own logic. It is in the responsibility of the architect to synthesize these layers in to one design. Each of its choices and decisions should be based on logic. Logic rooted in the design method and research that has been done. It is therefore important to become aware of the logic, the history and the methods that are used within these different scales. Each project requires a different approach, a different method to research its context, its history, and the potentials it might have. By being aware of the research-methods and its application, an architect is able to add more complexity, more logic to its design, and the student can become aware of the qualities of its context.

Within this course this element of a layered professions has been the biggest asset for me. The different research-methods that have been used throughout the years, applying them to all kinds of different contexts. Seeing a more clear relation between research and its role in design. It showed that research-methods didn't just appear out of nowhere, but have a defined bond with its society shown throughout history. Seeing how a method evolved over the years, changing it's approach as its being applied by modernistic architects to then deconstructivist architects. Extensive and diverse research methods, all with their own history. The changing of a research method throughout the years as a reflection on its society and certain architecture movements is the main realization from this course. The topic of this paper relates to this change as it is on the development of educational system with a main reflection on that of the Bauhaus. Understanding how these educational systems came to be, what their definition of an architectural student was and what it needs to be taught to become an architect.

The educational system of the Bauhaus set up similarly to a medieval guild. There was an apprentice, journeyman, young master and master. Through a preliminary course of 6 months a new student/applicant had to define himself and based on their results were able to follow a specific workshop as an apprentice. The goal of each workshop was that through handcraft the student would get new perspectives and aspects to be used within the final goal of Bauhaus, the future building. The project will be a reflection on this guild system within the Bauhaus educational system, and how it now 100 years later could be applied. This will be done within the Robotic Building studio that is part of Architectural Engineering. The view of this studio is on an architecture that is driven by three elements. First data-driven design, in which data is being used to inform the design process. (Bier, H., & Knight, T., 2014). Second Digitally-driven design, in which the building is able to interact with the user in real-time. From a static building to an active building. (Bier, H., & Knight, T., 2010). And third Robotically-Driven design in which the production of the building is done with the use of robotics. (Bier, H. et al., 2018) These three drivers of design are a reflection of current technologies, similar as to what Bauhaus tried to do in their time. Using this perspective the thesis will research the transition from handcraft to robot craft as a means of education and the new guild system of the current university.

II RESEARCH-METHODOLOGICAL DISCUSSION

The topic of this paper is on the historical development of educational systems within architecture schools, the hierarchy between teacher-student, and the role of a student within these systems. The research approach applied is therefore a historical research method, using recollection of past events shared through literature, lectures and photos to define the framework of each of these systems. Different educational methods have been used throughout history. The Bauhaus guild system, the Ecole des Beaux-arts system and its change on the May '68 protests, and current educational systems such as in Aarhus university or our own TU Delft. These systems are all based on a reflection of their time. To be able to understand this an analysis of the cultural and societal context is needed next to its views on architecture and how this resulted in the specific educational system. Within this paper the materials mainly used are literature recollections of the structure of educational systems, their societal- and cultural factors that brought about change, and student recollections of past events. (Avermaete, T., 2018) (Benton, T. 2018) (Dearstyne, H., 2014).

From these multiple recollections of history, a framework can be defined that can be used to synthesize its conclusions in to a contemporary educational system for the future student. With the goal of reflecting upon the Bauhaus educational system by introducing a contemporary educational system for the new architecture student. This system will define the core structure of the university, from which spatial implications will follow. Coming from both the functional requirements, and social and cultural requirements. Resulting in the future Bauhaus school.

By trying to analyze historical events one is trying to understand past events through the material that is now available. This already gives a subjective element to the analysis, depending on the school of thought that is followed within the analysis. It is therefore important to define the framework in which history will be read, and the conclusions that will result from this analysis.

This aspect of school of thought is related to two processes in historical research. The first is the interpretation of history. When analyzing historical materials, in any form, the way that it is being interpreted and implemented within a framework depends on the historian's point of view. There are two elements, the technical in which the research knows where to find the right sources to research, and the theoretical aspect in which the researcher needs to know how to arrange it in to a framework.

The second is the narrative of this framework, and how history is thereby perceived and described. Since history is something which is not present, it will always be something that is perceived. This perception or point of view is where the different methodologies come in to play. Depending on the point of view that is used the interpretation can differ and the recollection of history therefore as well. The educational references within the paper are based on system originated within the 20th-21st century.

Four point of views from these centuries are described in this paper. Starting with the Positivist view originating from Carl Gustav Hempel (1905-1997), then the Modernist view from Hegel (1770-1831), to the Structuralist one based on the writings of Ferdinand De Saussure (1857 – 1913), and finally to the Post-Structuralist view with a focus on Michel Foucault (1926-1984).

III RESEARCH-METHODOLOGICAL REFLECTION

In this part a summary of historical research developments will be described and their application within the design and architecture field. Then a reflection will be given and a choice made on the method to apply within my own research.

The first view is that originating from Carl Hempel (1905-1997), who was active in the Berlin Circle in the 1920s. His view on society and history, that he published in "The Function of General Laws in History", argues for a single history of the world. One we are able to proof with enough empirical evidence. History conceived properly is a science of culture. One in which we are able to find a 'covering law' for a totalized history of human events. Similar to that in which gravity is the law of nature, history is the law of society. Viollet-Le-Duc's (1814-1879) rationalism follows this point of view, in which he states that the Gothic period is nothing more than the expression of the reasoned analysis of structural forces. Style is not a result of fashion, but the process and logic of methods. (Groat, L. N., & Wang, D., 2013).

Second view is one originating from the philosopher Georg Wilhelm Friedrich Hegel. He approaches history from the evolution of communal consciousness or mind. In which the consciousness of each individual is part of communal "spirit" or "mind" – the whole is more than the sum of the parts. The individual is therefore part of the much bigger zeitgeist, a spirit of time, which he or she is not able to fully comprehend. This view is a reflection of the modernistic movement within architecture, using the words of Le Corbusier: "a great epoch has begun. There exists a new spirit. Industry, overwhelming us like a flood which rolls on towards its destined end, has furnished us with new tools adapted to this new epoch, animated by the new spirit." (Corbusier, L., 2013).

Third view results from the thesis of Ferdinand De Saussure (1857 – 1913) in which words, and its components, are only meaningful when standing in relationship to other such signs. It implies that human culture can only be understood by its relationship to a certain structure or system. Using the example of language, an English word has its meaning within the English language, in which it does not have to have any relation with the Chinese language to have any meaning. No reference to anything external is necessary to define meaning. George Dickie's institutional theory of art follows this point of view. In which art is not art by its inherent attributes of the work, but simply by the position they occupy within an institutional context. (Caws, P. 1988)

Fourth and final view is that of post-structuralism. This isn't a single view, rather a collective of viewpoints. Therefore a choice has been made to use Michel Foucault principle of post-structuralism. For Foucault, there is no universal or transcultural understanding of "reality", in which certain ideational benchmarks remain constant (e.g., "progress", "heaven", "nature", "man", and so on. Historical periods come and go, each period understood as a web of discourses. Discourses in this context is defined as the cultural manifestations of thoughts. An historical assessment of architecture in this strategy is necessarily an assessment of social-cultural discourse as well. There is no one reality, every person lives in what Foucault described as "the intersection of many clouds of narrative language elements". An example of this is Soja's study of Los Angeles in the period of 1965-1992. In which he describes the events originating from six intermeshed realities, from national scale to local scale. Not one reality that defines the progress of society and culture, but a collection of multiple different realities. (Lyotard, F. J., 1993)

The research is focused on multiple historical events happening within the 20-21st century. All originating from different times and therefore different societies. The framework within my research will therefore depend on the post-structuralist viewpoint of history, in which each of these events will be viewed as an event in its own time. Not trying to define concrete connections between social-cultural events of the events. It is the multiple layers of history that influenced these events. However an interesting point of view is that the Bauhaus was part of the modernistic movement, and while my research is not based on modernistic views, it's interesting to find that the historical context on which the Bauhaus educational system is built is correlated with the historical view from modernism. It is fascinating to find this correlation between philosophy and architecture, in which architecture is rooted in historical research views and vice-versa.

IV POSITIONING

The lecture of Jorge Mejia is the one my research can relate to the most. His distinction of who and what a Master of Science is relates directly to the analysis of what the student needs. How a student is not only a master of Architecture, a master of architecture with a knowledge in science. The dissecting of the student is what I have been trying to do through the use of educational systems. It is not only architecture that we should teach, it's a logic that the students' need to control and different ways to learn and research this. Next to that he discussed the evolution of different theories through time, how they originated from different points of view, and the overview created from this overall analysis. The shifting of the definition of an architect, and how a theoretical theory is defined through multiple elements. Which is 1:1 relatable to the research that I did in educational systems and the role of the student

*The one thing that I want to oppose of this view is the element of science in Master of Science. When we define the future architect as a master of science, in which science is then defined as the study of the natural and physical world, then the element of human experience is left out. A very strong tool of the architect is for example the method of metaphor. This is not something scientific or objective. The study of humanities or arts is described as master of Arts, however architecture is not just the study of arts. There is a grey zone in which architecture operates. Nigel Cross, in his book *Designerly Ways of Knowing*, describes this zone as not the natural world for science, not the human experience for the Arts, but the artificial world for design. The student is not just mastering science, it is also mastering arts, and by that mastering design, the combination of the two. So I would like to advocate or have one be aware that an architect is more than a master of science, it's a master of design. (Cross, N., 2006)*

Architects aren't individuals anymore either, having the most influence within the realization of a project and deciding on complete designs. To be able to build and design the architects of the 21st century are required to collaborate, and let their designs be collaborated with. Different disciplines designing a framework to then be co-designed by the used. Architects design the question, the user will give the answer. Similar to that of the Wikihouse, an open-source project for designing and building houses. In which users are able to download plans from an online library, customize it themselves and then build it. (Greenfield, A. 2017)

The school will also change, following this same view. The hierarchy of the students has been removed, everyone is equal. The school will become an open school, in which all students are able to teach each other. Similar to that of the Fablab, fabrication laboratory (Ratti, C., Claudel, M. 2015), in which students and users are able to experiment and teach with different production methods. This also counts for the functions within the building. There is a dynamic society within the building, where all rooms play a role within the education. No hierarchy between the spaces. It should be a continuous space where all the spaces are linked together. Instead of one big building, it will become a collective of spaces. Building as a community.

Robotics within architecture have given us a lot of new possibilities. Students projects can be literally translated into products, mass-production has turned into mass-customization and buildings are almost able to converse with the user. However when everything can be specific, from the way the wall reacts to when a window is opened or closed, there is no room for ambiguity anymore. It is this ambiguity that design spaces for interaction. Even if every building can be produced from data-driven design, we should leave room for this ambiguity. Architecture should be specialized but not specified.

REFERENCES

1. Anderson, S. (2011). *Rational Reconstructions and Architectural Knowledge*.
2. Avermaete, T. [TheBerlage]. (2018, May 18). *Candilis and the Ecole Des Beaux-Arts: 1968 and After*. [Video File]. Retrieved from http://www.theberlage.nl/galleries/videos/watch/2018_05_18_candilis_and_the_ecole_des_beaux_arts_1968_and_after
3. Banham, R. (1980). *Theory and design in the first machine age*. Mit Press.
4. Benton, T. [TheBerlage]. (2018, May 18). *The Open University and Broadcasting the Modern Movement*. [Video File]. Retrieved from http://www.theberlage.nl/galleries/videos/watch/2018_05_18_the_open_university_and_broadcasting_the_modern_movement
5. Bier, H., & Knight, T. (2010). *Digitally-driven architecture*. Footprint, 1-4.
6. Bier, H., & Knight, T. (2014). *Data-driven design to production and operation*. Footprint, 1-8.
7. Bier, H., Cheng, A. L., Mostafavi, S., Anton, A., & Bodea, S. (2018). *Robotic Building as Integration of Design-to-Robotic-Production and-Operation*. In *Robotic Building* (pp. 97-119). Springer, Cham.
8. Caws, P., 1988. *Structuralism: The art of the intelligible*.
9. Corbusier, L. (2013). *Towards a new architecture*. Courier Corporation.
10. Cross, N. (2006). *Designerly ways of knowing* (pp. 1-13). Springer London.
11. Dearstyne, H. (2014). *Inside the Bauhaus*. Elsevier.
12. Gershenfeld, N. [WGBHForum]. (2014, May 1). *Fab Lab: How to Make (Almost) Anything*. [Video File] Retrieved from <https://www.youtube.com/watch?v=oK7s2GT-0dg>
13. Greenfield, A. (2017). *Radical technologies: The design of everyday life*. Verso Books.
14. Groat, L. N., & Wang, D. (2013). *Architectural research methods*. John Wiley & Sons.
15. Hempel, C. G. (1942). *The function of general laws in history*. *The Journal of Philosophy*, 39(2), 35-48.
16. Landau, R. (1981). *Notes on the concept of an architectural position*. *AA Files*, (1), 111-114.
17. Lucas, R. (2016). *Research methods for architecture*. London: Laurence King Publishing.
18. Lyotard, J. F. (1993). *Excerpts from The postmodern condition: A report on knowledge*. *A postmodern reader*, 71-90.
19. Ratti, C., & Claudel, M. (2015). *Open source architecture*. London: Thames & Hudson.
20. Sennett, R. (2008). *The craftsman*. Yale University Press.
21. Sennett, R. [MAK]. (2012, March 7). *Together: The Rituals Pleasures and Politics of Cooperation with Richard Sennett* [Video file]. Retrieved from https://www.youtube.com/watch?v=gf0qLjfd_RY
22. Sennett, R. [MAK]. (2016, October 12). *Richard Sennet: Craftsmanship* [Video file]. Retrieved from <https://www.youtube.com/watch?v=nlq4w9brxTk>
23. Van Dooren, E., Boshuizen, E., Van Merriënboer, J., Asselbergs, T., & Van Dorst, M. (2014). *Making explicit in design education: generic elements in the design process*. *International Journal of Technology and Design Education*, 24(1), 53-71.