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Learning from pedagogical experiments

An alternative reading of architectural design studio

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Synopsis

Pedagogical experiments in the second half of the twentieth century are regarded as evidences of thresholds in architectural design education. Many traditional approaches including apprenticeship, reproduction of existing forms and structures are left behind; and many novel approaches became valid including spatial investigations, using tools and new technology, critical thinking, non-linearity, social and political engagement, interdisciplinarity, participation and questioning the role of architecture. From this point, this study aims to illuminate how these pedagogical experiments challenged and transformed the domain of architecture and beyond. In order to address this transformation, the study presents and discusses the pedagogical experiments through the framework of five themes: systematicity, linearity, simultaneity, participation and complexity.

Key words: Architectural education, Design pedagogy, Design studio, Pedagogical experiments.

1. Background

The present form of the design studio traces its origin back to the Ecole des Beaux-Arts and the Bauhaus. Although the Ecole des Beaux-Arts was established in the seventeenth century; it maintained a stance against apprenticeship in the nineteenth century (Cret, 1941). The origin of academic studio culture coincides with this position, requiring learning by doing as a principle focus of architectural education (Anthony, 2011, p. 223).

Design studio culture was introduced to North American schools in the early twentieth century by Paris-trained professors. 'Over 500 Americans attended the Ecole des Beaux-Arts between 1850 and 1968' and they brought the design studio tradition to North America (Anthony, 2011, p. 224). The German Bauhaus School (1919-1933) replaced the influence of Ecole des Beaux-Arts with a design studio inspired by the machine, the mass production and the modern technology (Anthony, 2011, p. 224).

In the second half of the twentieth century, several pedagogical experiments across the globe played a crucial role in shaping architectural discourse and practice. Through these experiments a variety of strategies and tactics had been developed which then influenced the field of architecture and led the following contributors (Colomina et al., 2012). These evidences shows that it is critical to understand and rethink the pedagogical experiments for revealing their influence on architecture and other disciplines.

2. Research framework

This paper forms part of a wider study¹ concerning a comparative analysis of experiments, practices, and positions in architectural design studio. This part of the study covers a reading of the pedagogical experiments from the second half of the twentieth century through five recurrent themes. Selection of the themes was based on the repeating patterns revealed within the scope of the doctoral research and they can be listed as *systematicity*, *linearity*, *simultaneity*, *participation* and *complexity*.

First, methodical approaches including medium, tools and structural organisations are grouped under *Systematicity*. Second, sequential approaches concerned with the process and temporal subjects are grouped under *Linearity*. Third, simultaneous activities and contexts applied at the same time are grouped under *Simultaneity*. Fourth, participatory processes including actors, activities and intentions are grouped under *Participation*. And lastly, subjects including multiple dimensions such as discovery and atmosphere are grouped under *Complexity*.

3. Themes

For understanding the precedent pedagogical experiments and their impact, forty-one selected case studies from 'Radical Pedagogies'² research project are listed, summarised and categorised according to their timeframe,

¹ "Experiments, Practices, and Positions in Architectural Design Studio" is a PhD study by the author.

² "Radical Pedagogies" is an ongoing multi-year collaborative research project led by Beatriz Colomina with a team of Ph.D. students of the School of Architecture at Princeton University.

performers, institutions, tactics, and their relation to themes of this study (Fig. 1). Below, the impact of these experiments on the domain of architecture and related fields are explained under five categories.

First of all, tactics of learning with tools can be considered systematic regarding their methodological character. There are some common characteristics such as using physical environments for the spatial investigations; and virtual environments for computer-aided design researches. Model research then extended to virtual environments; and initial attempts in computer-aided design are realised in Harvard GSD pioneering to an innovation such as GIS software.

Second, linear and non-linear tactics were one of the major concerns of pedagogical experiments. Some schools aimed to change curricular structures through non-linear approaches; such as emphasising design process, forming vertical studio structures, promoting remote teaching methods and experimentation. For instance, Architectural Association developed vertical studio teaching with the unit system; Open University promoted remote teaching methods; WSPA set up a non-hierarchical model among students and teachers; IAUS suggested an open plan for students to develop their course schedule.

Third, simultaneity indicated social and political engagements to design studio. Some groups gave rise to change the focus of architecture from sole form-making to a new kind of architecture that is simultaneously connecting with society. In other words, they were combining the content and the context in different realms. For instance, FAU USP was linking form-making to political change; and La Tendenza focused on being socially and politically engaged (Bottazzi, 2012, p.104) with the matters of architecture.

Fourth, several tactics emphasised participation among various actors, in different forms with multiple aims in the history of architectural education; and interdisciplinarity and participatory actions were specifically underlined within these tactics. For instance, Ulm School, Arezzo, University of Stuttgart, MIT and ILA&UD had pedagogical experiments with a collaboration of international multidisciplinary groups in which international dialogue, diversity of participants and heteronomy were the main concerns.

Participation was not only significant in the context but in the actions as well. For example, CIAM members opened their ateliers to students; AD, AA and Polyark organised a bus trip for a two-weeks long live project; Kenzo Tange initiated an architectural laboratory; Buckminster Fuller realised workshops within a network of institutions; the NER group approached to city as a temporary and mobile living organism; TU Berlin and Cornell University focused on city as an architectural laboratory; and Pratt Institute School of Architecture employed design-build projects.

| Year | Performer | Institution, Place | Tactic | Theme |
|-----------|--|--|---|---------------|
| 1972 | Emilio Ambasz | The new domestic landscape exhibition at MoMA | Discussing design process with symbols and social critique | Simultaneity |
| 1952-1959 | Enrico Peressutti | Princeton | Confronting with the field | Systematicity |
| 1971-1979 | Vittorio Giorgini | Pratt Institute | Learning by building | Participation |
| 1951-1965 | Pietro Belluschi and György Kepes | MIT | Encouraging collaboration of visual arts and science | Participation |
| 1976-1983 | Aldo Rossi | La Escuelita | Experimenting without control over curricula | Linearity |
| 1947-1952 | Ernesto Nathan Rogers, et al. | Instituto de Arquitectura y Urbanismo | Combining pedagogy with research, public institutions and local companies | Participation |
| 1964-1984 | Howard Fischer, et al. | LCGSA Harvard GSD | Using new media, innovating interfaces | Systematicity |
| 1967-1985 | Nicholas Negroponete, Leon Grossier, Jerome Wiesner | The Architecture Machine Group and The Media Lab MIT | Developing new methodologies | Systematicity |
| 1964-1985 | John Hejduk | The Cooper Union | Supporting the independent and personal voice of the students | Participation |
| 1951-1957 | The Texas Rangers | University of Texas Austin | Using spatial investigations as a device | Systematicity |
| 1965-1975 | | IAUS and Princeton | Promoting open-plan for studio organisation | Linearity |
| 1955-1970 | R. Buckminster Fuller | Southern Illinois Institute of Carbondale | Organising a network of workshops | Participation |
| 1933-1957 | Josef and Anni Albers, et al. | Black Mountain College | Emphasising process against results | Linearity |
| 1972-1980 | The Center for Independent Living | University of Berkeley | Developing design concepts for impaired mobility, sight and hearing | Complexity |
| 1972-1976 | | Facultad de Arquitectura, Universidad Nacional Autonoma de Mexico | Manifesting for a new model with social and political aspects | Simultaneity |
| 1952-1972 | Alberto Cruz, Godofredo Iommi, Claudio Girola | Escuela e Instituto de Arquitectura PUCV | Using lived experiences to underline plastic aspects of architecture | Systematicity |
| 1943-1963 | Tibor Weiner | Escuela de Arquitectura, Universidad de Chile | Correlating image and project, method and purpose | Complexity |
| 1971-1975 | Taller Total | Facultad de Arquitectura y Urbanismo, Universidad Nacional de Cordoba | Focusing on changing role of architecture in the developing areas of the world | Complexity |
| 1962-1969 | Vilanova Artigas | Faculdade de Arquitectura e Urbanismo da Universidade de Sao Paulo FAU USP | Linking form-making and intention to political change | Simultaneity |
| 1948-1973 | Kenzo Tange | Tange Lab | Initiating an architecture laboratory | Participation |
| 1975-1981 | Katrin Adam, et al. | The Women's School of Planning and Architecture WSPA | Learning from students | Linearity |
| 1959-1968 | Enzo Frateili | HfG Ulm | Forming an international multidisciplinary group | Participation |
| 1957-1968 | Alexei Gutnov, the NER Group and Giancarlo De Carlo | Moscow Institute of Architecture MARKHI and Triennale di Milano | Seeing the city as a living organism | Participation |
| 1976 | Aldo Rossi, Bruno Reichlin, Fabio Reinhart, Eraldo Consolascio | ETH Zurich | Assembling the images of collective memories, places, and building | Systematicity |
| 1974 | Alvaro Siza and the SAAL("Local Mobile Support Device") | Faculdade de Arquitectura da Universidade do Porto | Bridging between the local organisations and architecture with students | Participation |
| 1971-1990 | Alvin Boyarsky | The Architectural Association | Promoting vertical studio teaching | Linearity |
| 1973 | Peter Murray, Cedric Price | AD/AA/Polyark | Triggering a dialogue between architecture schools and local communities through a live project | Participation |

| Year | Performer | Institution, Place | Tactic | Theme |
|-----------------|---|--|--|---------------|
| 1964-1990 | Frei Otto | Institute for Lightweight Structures at the University of Stuttgart (ILEK) | Providing a collaboration between architects, engineers, biologists, anthropologists, and historians | Participation |
| 1953-1968 | Inge Aicher-Scholl, Otl Aicher, Max Bill, Tomas Maldonado | Hochschule für Gestaltung (HfG) | Working on scalelessness | Systematicity |
| 1965-1977 | Oswald Mathias Ungers | TU Berlin and Cornell University | Considering city as an architectural laboratory | Participation |
| 1963-1973 | Archizoom Associati, 9999, Gianni Pettienna, Superstudio, UFO, and Ziggurat | Universita degli Studi di Firenze, Facolta di Architettura | Occupying the city plazas with temporary installations | Participation |
| 1963 | Ludovico Quaroni, Giancarlo De Carlo, Aldo Rossi, Manfredo Tafuri | The Arezzo Course | Organising a collaboration with sociology, economics and geography | Participation |
| 1976-2003 | Giancarlo de Carlo | International Laboratory of Architecture and Urban Design ILA&UD | Proposing interventions for real sites | Participation |
| 1964-1971 | Leonardo Mosso and Laura Castagno | Politecnico di Torino | Promoting working on dynamic and virtual environments | Systematicity |
| 1961, 1963-1979 | Bruno Zevi | Istituto Universitario di Architettura di Venezia IUAV and Universita di Roma | Re-interpreting of historical examples | Systematicity |
| 1969 | Utopia e/o Rivoluzione | Politecnico di Torino | Questioning the role of architectural education for a revolution | Complexity |
| 1967-1970 | Guido Canella | Politecnico di Milano | Making macroeconomic and macro urban analyses in the field | Systematicity |
| 1959-1961 | Carlo Cocchia | Politecnico di Milano | Making in-depth analysis of existing buildings | Systematicity |
| 1949-1956 | CIAM Summer School | Venice, Italy | Increasing foreign exchange programs and participation of practitioner architects | Participation |
| 1976 | The Open University | 37th Biennale di Venezia | Promoting remote teaching methods | Linearity |
| 1963-1971 | Aldo Rossi | Istituto Universitario di Architettura di Venezia IUAV and the Politecnico di Milano | Transforming design studio as a research device | Linearity |

Figure 1.

Fifth, the complex role of architectural education and organisation of studies were emphasised. For instance, at the exhibition entitled *Utopia e/p Rivoluzione*, there were two main opinions about the role of architecture: revolution and intensive use of technology. Moreover, *La Tendenza* aimed to enhance the discipline's functional role within the contemporary technological and socioeconomic condition (Scott, p.49) with the belief that architecture had a political role to improve and shape the society (Bottazzi, 2012, p.104).

4. Findings

Listed pedagogical experiments are then graphically represented on a timeline according to five categories (Fig. 2). This diagram shows that participation is the most popular theme since the late 1940s. It is followed by systematicity which is mostly emphasised between the 1950s and the 1990s. Linearity is the earliest theme based on the traces from the 1930s. Complexity is a rarely employed between the 1940s and the mid-1980s. Simultaneity is the least preferred theme that is emphasised between the 1960s and the 1980s.

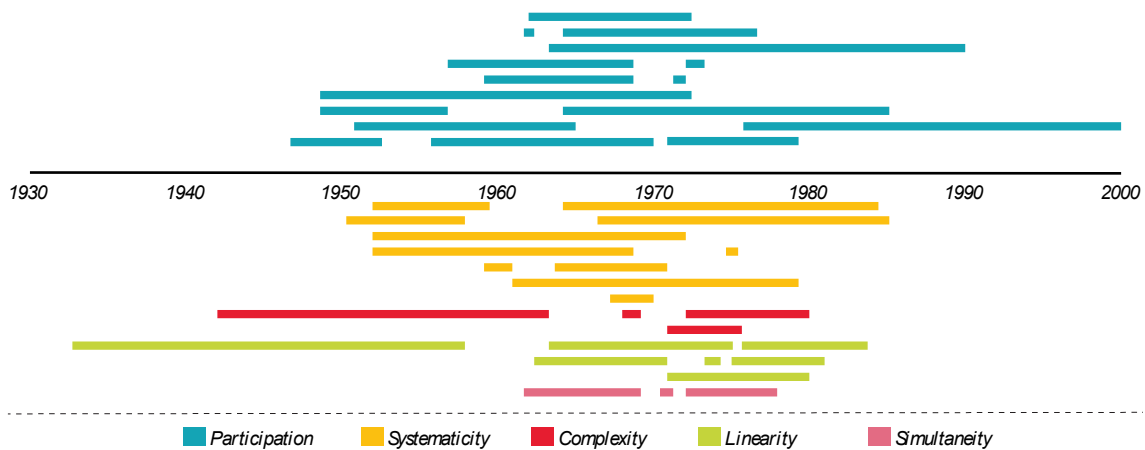


Figure 2.

It is important to acknowledge that the majority of pedagogical experiments were employed between the 1960s and the 1970s including primarily participation and systematicity by

- confronting with real life situations,
- learning by building,
- providing collaboration of visual arts and science,
- including public institutions and local companies,
- using new media, innovating interfaces,
- developing new methodologies,
- supporting the independent and personal voice of the students,
- organising workshops,
- using spatial investigations and live projects,
- forming international multidisciplinary groups,
- promoting to work on dynamic and virtual environments, and
- encouraging foreign exchange programs.

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Biography

Ayşe Zeynep Aydemir. Architect and studio tutor with a research practice on architectural design learning. She received BArch (2008) and MSc in Architectural Design (2011) degrees from Istanbul Technical University. She taught architectural design studios at ITU School of Architecture between 2010-2017. She's been a visiting PhD candidate as a TUBITAK scholar at KU Leuven Faculty of Architecture in Ghent and Brussels between 2014-2016 and worked as a studio tutor in International Master of Architecture at the same faculty during Fall 2015. She completed her jointly supervised Ph.D. entitled 'Experiments, Practices and Positions in Architectural Design Studio' at KU Leuven and ITU in 2017, supported by ITU Scientific Research Projects Coordination Unit.

Currently, she teaches at MEF University Faculty of Arts, Design and Architecture, where she coordinates the Architectural Design Graduate Programme. Her research and teaching interests include new pedagogies and new production techniques, living laboratories, design-build studios, bottom-up approaches, co-create, discovery and experimenting in architectural design studios