

# Architectural education in the context of social sciences

Peter Mazalán<sup>1\*</sup>

Jana Vinárčiková<sup>2</sup>

Michal C. Hronský<sup>3</sup>

<sup>1,2,3</sup> Slovak University of Technology, Faculty of Architecture and Design, Institute of Interior and Exhibition Design, Bratislava, Slovakia

\*Corresponding author

E-mail: peter.mazalan@stuba.sk

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**Abstract:** Architecture is an interdisciplinary subject that utilises knowledge and experience from numerous scientific fields. Social sciences in particular have a special relationship with architecture, transforming it into a living and reflective discipline. Architectural design is basically a hypothesis that explores how society would react to its substance and the conditions it creates. However, social sciences subjects are often limited to theoretical knowledge over the course of architectural education. This research discusses social and psychological sciences and their architecture-specific theories as powerful tools for student engagement in architectural education. Focusing on educational concepts which lead to a greater understanding of dynamic societal changes, the research also indirectly analyses the traditional process of creating a universal design, outside of this understanding. This approach enables students to understand the limitations of their education and to think analytically about design options and the improved interactions not only with their surroundings but, more importantly, with a specific person or group of people. Activities that develop this kind of understanding are different forms of interactive art (site-specific installations) and social activities (focus groups) with different demographics (persons with health impairments – for example barrier-lessness and social inclusion). The base research analyses social and psychological sciences in relation to the process of architectural design education with a focus on European context. In social sciences, social and spatial connection and their often implied or ignored relationships are investigated in increasingly more interesting ways. The aim of this study is to provide a complex outline of the educational methods which, on top of technological change, also actively monitor social change.

**Keywords:** social sciences, education, engagement, design process

## INTRODUCTION

Interdisciplinary thinking is an unavoidable part of the design process for a creative architect. At a time of increased socio-ecological requirements, we cannot simply consider permanent spaces and architectural objects to be the result of a creative process, but rather to be the products binding together a myriad of contextual relationships and responding to socio-psychological, ecological, economic and other challenges. The user becomes the subject in the forefront of permanent architecture and eventually defines and rates the "user friendliness" and the "value" of a building, thus becoming its primary critic. The future of architectural and design-led education therefore lies in the interdisciplinarity of education. "Architects, being operators of one of the largest industries in the world, i.e., building developments in cities, are responsible for the natural and cultural environment. Issues in architecture are related to the philosophical problems of modern civilisation and architectural education must prepare putative architects to solve these problems. Architectural education related to these issues is becoming an increasingly important part of the humanities education of future architects." (Czyz, 2020) User engagement at different levels is also related to architectural education. Many theoretical studies analyse

"critical pedagogy" as an educational philosophy stream of architectural education. "Critical pedagogy provides insights into how the existing framework of architectural education might be challenged, permitting the development of a more democratic learning environment informed by competing interpretations, alternative histories, and a new range of situated political issues." (Crysler, 1995)

Other studies related to architectural education analyse the "new education paradigm based on the recent development of complexity theory." This would amount to a pedagogical and socio-cultural complexification – to borrow a phrase from Alain Findeli – of the theory and practice of designing: "Such changes would include rethinking the epistemology of design, becoming more aware of the systematic processes of design, and incorporating multidisciplinary approaches to design projects and activities." (Wang, 2010) Studio-based education is an active space, where students engage one another intellectually and socially. It is also the space between analytical, synthetic, and evaluative type of thinking. According to Thomas Dutton, architect and educator: "utilizing an educational concept known as the hidden curriculum to analyse the design studio, the author argues that there is a rough correspondence between schooling and larger

*societal practices, where the selection of knowledge and the ways in which school social relations are structured to distribute such knowledge, are influenced by forms and practices of power in society.*" (Dutton, 1987)

## SOCIAL SCIENCES

Despite the multidisciplinary character of the architectural profession, a monodisciplinary model is often implemented at university level. Complementary subjects, particularly social sciences, are often missing from the curriculum. Linking academic research to social sciences is a lesser part of the research practice. Social sciences in the context of architectural research thoroughly analyse the needs and preferences of users. It is envisaged that architecture students working in conjunction with a practitioner in the field of social sciences and using sociological research methods will be capable of creating proposals which optimally respond to an assignment blending with the architectural and sociological research. *"The different disciplines – in particular sociology, anthropology, environmental and behavioural psychology – can contribute in many ways to the architectural research and design process. Not only can different and important subjects be researched, beyond the standard in architectural research, but the overlapping subjects can also be studied in a multi- or interdisciplinary mode, resulting in surprising outcomes. This collaboration has to be well organised and would be served best with a common goal and specific research question."* (Bosch, 2020)

## PARTICIPATION AS AN EDUCATIONAL METHOD

The architecture studio is integral to architectural pedagogy. Studios engage students in different activities of making and conversation, shifting between analytic, synthetic, and evaluative modes of thinking (Dutton, 1987). As the scope of architectural problems grows in complexity, new teaching models for architecture studio have emerged. The new models replicate industry practices by introducing new methods and perspectives of information to enrich students' ability to make effective and integrated decisions. The discussion about user involvement in the design process is ongoing. The requirement for their proactivity in a space they are to use results in a participatory design. In architectural education, the drive to satisfy the user is important, but remains theoretical. Students are marked on the creation of a product, instead of user satisfaction. *"Actually, it is seen as a natural and inevitable result that the mass of students who are a part of a community gives on to the community also after the end of the educational process, does not drift apart, relays information that is obtained to them in various ways and is useful."* (Bulut, Polatoglu, 2017) A field in which participation is applied encourages collaborative work abilities, empathic thinking and creative compromises.

New approaches towards studio work are focused on methods and tools guiding the evolution and evaluation of design from the point of view of material innovation, longevity and analysis of expenditure. The participatory approach to the methodology of teaching studio work is an important method aimed at the process of integrated design in architecture, offering students a cultural background on user needs and more realistic limitations which contribute to a more complex proposal. Design research has taken many forms across the design disciplines. Some have utilized user-centred methods such as contextual inquiry, applied ethnography, evaluative, and usability testing. Others have embraced the participatory design approach to engage future users as co-designers in the design process (Van der Velden, Mörtberg, 2021). Sanders summarizes the landscape of design research methods that shows evolution of user-centred and participation-centred design methods.

An example of the effort to establish a complex approach to architecture is the use of participatory design based on the cooperation of several parties, usually investors, designers and users. The term first appeared in the 1960s and its understanding has gradually evolved ever since. Whether architects, designers or engineers are designing a new space or revitalising an existing one, current and future users ideally be involved in the process. Past users are best placed to interpret priority needs, social interactions and routines due to a greater level of familiarity and can therefore be instrumental in establishing the elements that are likely to improve the quality of future usage. Spaces created by a participatory process offer not only the required coexistence, but also the creation of a multicultural and across-the-board harmony and desirable interactions. Well-planned interaction spaces depend on the design and the design is based on needs and preferences of the user, who should therefore participate in the design process to the maximum, in order to help tailor it to meet their requirements. (Sanders, 2008)

At present, morphologies are being sought that would contribute to potentially achieving relevant results or conclusions at numerous levels. A possible supporting tool is the application of so-called intersubjective multidimensional decision schema/frameworks and assessment methods. Logically constructed and well interpreted guidance has the potential to simplify the decision process and thus enable the relevant decision-making of each participant. As long as the "synthesising decision schema" determines the optimal order of the steps undertaken, the assessment method defines the criteria and mechanism of evaluation. It is crucial to understand that each participatory process has its specifics, derived from the need to adapt the methodologies to a specific piece. Their optimal use can be helpful for example to people with lower levels of education, or older and disadvantaged groups in asserting their interests. These people are often disadvantaged, when compared to academics wielding better communication, rhetoric and managerial skills or even mastering the rules of psychological manipulation, used in the sense of targeted purpose and influences. The integration of supporting user-friendly methodologies also contributes to the elimination of psychological barriers formed as a result of circumstances and manifestations, whether intentional or not, and of communication methods, etc. (Rabinowitz, Glinn, 2021)

## NEW METHODOLOGIES IN THE PROCESS OF ARCHITECTURAL AND DESIGN EDUCATION

While case studies of co-creation methods being used in an architectural context are increasing, the use of these methods lies primarily in the front-end of the design process. Participatory co-creation methods are being utilized by architectural schools to understand students' views on space configuration and possibilities of designing. The application of various co-creation methods is accompanied by a number of related occurrences drifting into the field of sociology, psychology and other scientific disciplines. The participatory approach is closely related to the understanding of the mutual relationships between professional design proposals and real user requirements. The process therefore underlines "assertiveness in designing", enables the ability to communicate assertively and the tolerance to different opinions or differences in general. Michal Šoltés, the author of numerous articles on assertiveness, highlights that this attitude cannot be simply defined as "a collection of assertive techniques and communication strategies" but as a global qualitative characteristic of an individual, based on the internal scale of equality and a positive attitude to others. The co-creation process supports these qualitative characteristics inadvertently.

It is also important to realise that direct open communication with future users is directly influenced by the mental state of all participants over the different stages of the process. The evaluation of the conclusions is therefore partially influenced by the ability to “mentalise” (this ability being a reflective function of the participants’ capability to tune into the mental state of others as well as themselves). (Šoltés, 2021) The recognition and use of participatory design and other methodologies discussed above is a significant future challenge for architectural and design education. It leads to a better quality of teaching and strengthening of the curriculum. The application of synthesising intersubjective multidimensional decision schemas and assessment methods in the creation of a piece of work is not currently a common occurrence and only observed occasionally in selected doctoral projects. The recognition and understanding as well as a proactive involvement of the student with the participatory design mechanism involving various types of evaluation methods, schemes and methodologies has the potential to bring many positive contributions, several of which are worth listing:

- Understanding the significance of plurality or specificity of opinion brought on by the diversity of participants, their personal preferences and real-life experiences, etc.;
- Testing various techniques and methods in collaboration with a wider field of experts and users;
- Strengthening of the ability to make collective decisions when formulating strategic objectives, confrontation and evaluation of varied concepts and drawing optimal conclusions;
- Familiarisation, testing and understanding the need and process of phasing of works to reach optimal results;
- Supporting the thinking abilities of individuals within contextual relationships, while considering the numerous briefs and conditions, investors’ and users’ requirements and the interdisciplinary character of the design process;
- Strengthening the ability to objectively consider similar and different opinions resulting from the inherently diverse imagination of the participants;
- Strengthening the ability to evaluate the arguments for and against proposals;
- Strengthening the ability to select attributes, which is related to the ease of navigation of a caste pool of possibilities;
- Strengthening the ability to think critically during the creative process;
- Testing one’s own ability to make objective decisions and assert own opinions; and
- Testing the reflective feedback abilities, i.e. feedback form of education.

## CASE STUDIES

There are several means of running co-creation training opportunities in education. If circumstances allow it, real-life participation – investor’s representatives, users, local authorities,

social institutions, local community groups, etc all participate in the process. The initial stage consists of a site visit and different presentations and assessments; the following steps are selective and usually consist of defining user priorities and establishing design strategies. Lectures by invited experts from other scientific disciplines, briefing and workshops could be complementary components to the process. Prototypes developed by students are then subject to peer review, transparent discussions with the represented parties, in a single or two-phase approach. The recommended supporting tool to aid the discussion is the archiving of any collected data in a way that is easily accessed at any point in the future if necessary. Over the course of data collection and selection of priorities, students work these into their design proposals. If it is intended that the proposals be constructed, timeframe and budget priorities are also part of the considerations. When this methodology is applied, students familiarise themselves with a wider spectrum of requirements from different areas and become active protagonists in the implementation of the priority selection, and discussion based on various opinions and levels of expertise. Depending on each student’s individuality and personality, they tend to prioritise their own preferences or reinterpret the requirements of other participants through the use of the proposed piece.

As it is not always possible for clients or users to take part in the process, a viable alternative is performing the participatory design exercise at a hypothetical level. Based on pedagogical experiences to date, it is possible to ascertain that even a method based on a fictitious scenario can be very useful. As part of the educational method, the student individually defines a target group and, with the assistance of accessible sources (literature, social networks, blog, etc.) seeks out information which would inform their final proposal. Designing spaces with the potential of being used by the students themselves is of a similar character. The approach is systematically challenged by the teachers, as well as students working on the same theme with other interested parties. The student is thus forced to consider and respect other assignments and outcomes, besides their own preferences and, at least at a hypothetical level, “communicate” with future clients.

Students worked on various typological types in studio work within FAD STU. With ongoing research, they have developed several office interior designs over the last three years. In the case of interior design, we try to work with students at the Department of Interior and Exhibition Design at the complex level of architectural creation. Before starting to design the project (Fig. 1.1 – 2.4), we offered students lectures by experts in the field of psychology who presented methods of cooperation with architects. Students also gained an overview and information about the client’s communication with the architect. Formal compositional elements such as colour, materiality in connection with the human psyche were analysed. Students also learned about various methods of certification of administrative buildings (for example BREEAM or WELL), which also deal with psychological and sociological facts in interior design.

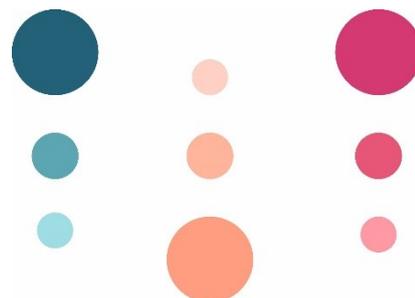


Figure 1.1. Corporate colour identity



Figure 1.2. Corporate hierarchy



Figure 1.5. Hot-desk space – axonometry



Figure 1.3. Facade view



Figure 1.6. Chill-out zone – axonometry



Figure 1.7. Working area – axonometry



Figure 1.4. Material concept

Figure 1.1. – 1.7. PONY HOUSE Marketing Agency, building “Sklad č. 7” (Warehouse no. 7), Danube riverbank, Bratislava, Slovakia. Conversion of industrial building - former storage premises into office spaces. Student: Monika Rešetková, supervisor: Jana Vinárčiková, Interior Studio VI, FAD STU Bratislava, 2020 - 21. Hypothetical scenario based on participatory education scheme - potential investor with specific requirements; spatially structured spaces for agency’s employees. (Source: Institute of Interior and Exhibition Design, Faculty of Architecture and Design STU, Bratislava, Slovakia)

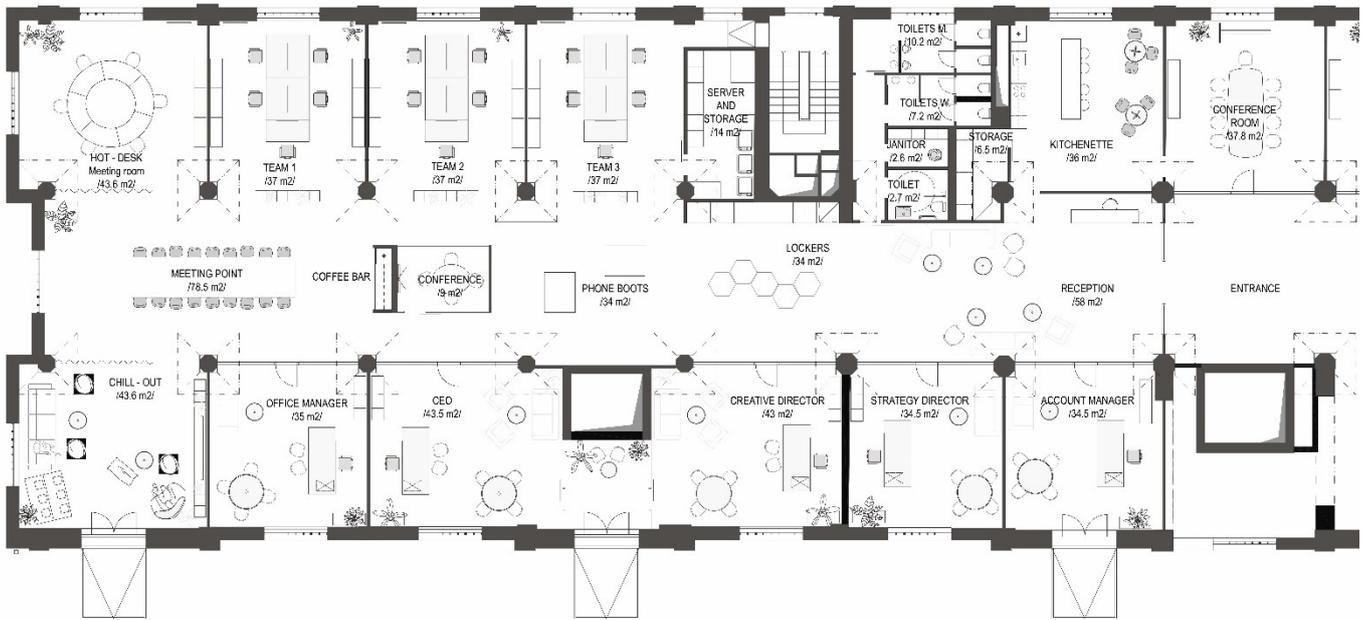


Figure 1.8. Plan view – selected part



Figure 1.9. Chill-out zone – visualisation

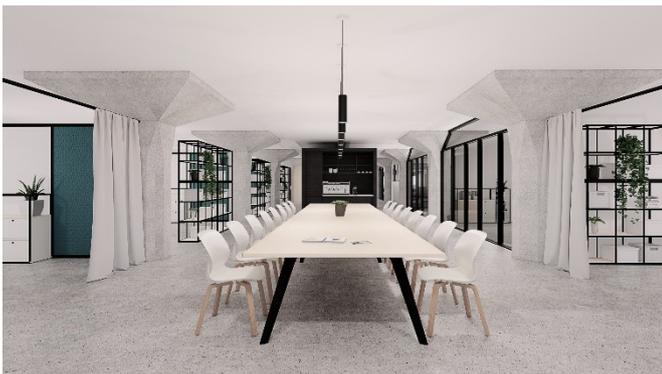


Figure 1.10. Central meeting area – visualisation

Figure 1.8 – 1.10. PONY HOUSE Marketing Agency, building “Sklad č. 7” (Warehouse no. 7), Danube riverbank, Bratislava, Slovakia. Conversion of industrial building - former storage premises into office spaces. Student: Monika Rešetková, supervisor: Jana Vináříčková, Interior Studio VI, FAD STU Bratislava, 2020 - 21. Hypothetical scenario based on participatory education scheme - potential investor with specific requirements; spatially structured spaces for agency’s employees. (Source: Institute of Interior and Exhibition Design, Faculty of Architecture and Design STU, Bratislava, Slovakia)

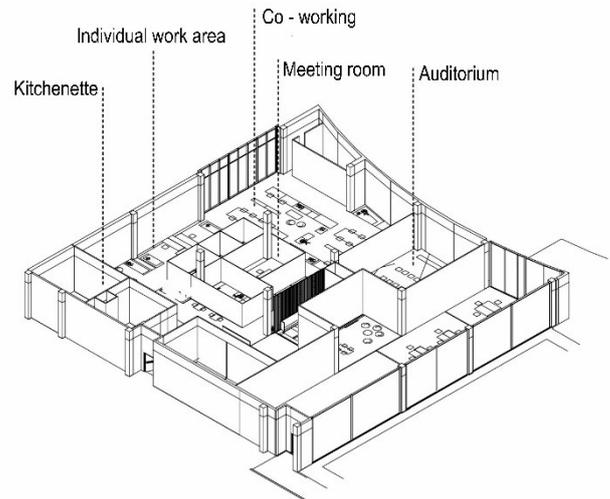


Figure 2.1 Spatial concept



Figure 2.2 Development sketch

Figure 2.1. – 2.2. STYLA Shopping Center, Bratislava, Slovakia. Conversion of selected retail premises into co-working spaces. Student: Barbora Vaňová, supervisor: Peter Mazalán, Studio VII - Interior, FAD STU Bratislava, 2019. A real-life scenario based on participatory education scheme - real investor with own specific requirements; spatially structured spaces for freelancers, architects and designers. (Source: Institute of Interior and Exhibition Design, Faculty of Architecture and Design STU, Bratislava, Slovakia)



Figure 2.3 Development sketch



Figure 2.4 Development sketch

**Figure 2.3. – 2.4.** STYLA Shopping Center, Bratislava, Slovakia. Conversion of selected retail premises into co-working spaces. Student: Barbora Vaňová, supervisor: Peter Mazalán, Studio VII - Interior, FAD STU Bratislava, 2019. A real-life scenario based on participatory education scheme - real investor with own specific requirements; spatially structured spaces for freelancers, architects and designers. (Source: Institute of Interior and Exhibition Design, Faculty of Architecture and Design STU, Bratislava, Slovakia)

## CONCLUSION

According to the study “A theory for integrating knowledge in architectural design education”, it is crucial to initiate and inspire educational institutions and future designers towards a more complex approach to the design process. Considering the proposal as a purely functional and aesthetic spatial object or a product of one’s own creative ambition is not sufficient. An outlook on the creation process, reduced to this mode of thinking, leads to a diminished quality of the final product as well as the quality of education, which loses touch with a broad range of relevant requirements. (Fonagy, Gergely, Jurist, Taget, 2005) The participatory design team become a community of people who communicate and share common and diverse opinions, thus creating a form of social interaction, the experiencing of which is crucial for the development of healthy individuals and well-rounded experts. The lack of sufficient social interaction often results in the inability to accept the most natural difference of opinion, a lowered threshold or outright refusal to accept diversity in all shapes and forms. This can be observed in the creative process through the absence of user-focused and need-focused proposals in the first instance.

The training methods mentioned above teach students to reflect upon and select user requirements as a natural part of the process, accept and embrace the plurality of opinions, and social and individual diversity. Through the creative process, students are taught to contribute, in a meaningful way, towards common

goals and also become a part of social community, while bridging social capital as a sum of advantages gained from the network of relationships with similar and diverse individuals. The participatory approach in education helps interpret, stimulate and generate social interactions that are so crucial to a successful architectural career. Students learn, through the application of the intersubjective decision scheme, how to maintain the step-by-step design flow and through the described assessment method they practice drawing conclusions. Each of the methods therefore deserves to be considered on its own merits.

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