

## **INTERDISCIPLINARITY AND DESIGN DISCIPLINES: A CRITICAL ASSESSMENT OF THE LITERATURE**

Design Disciplines, Interdisciplinarity, Discipline Formation,  
Interdisciplinary Research, Design Knowledge

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Interdisciplinarity has become one of the “trendiest” buzzwords in today’s academia. In a diverse range of areas, such as international migration, public health, poverty, nanotechnology, neurosciences, calls for promoting interdisciplinary research and collaboration have been made (National Academy of Sciences, 2004; Jacobs and Frickel, forthcoming). Recent efforts, which have been undertaken by various federal agencies, private foundations and universities to promote interdisciplinary scholarship and research, are also good indicator of this tendency (National Academy of Sciences, 2004; Jacobs and Frickel, forthcoming). For instance, in 2006, National Science Foundation (NSF) have created a pool of funding for training interdisciplinary graduate research fellows named Graduate Education and Research Traineeship (IGERT) (National Science Foundation, 2008). On the other hand, University of Michigan revealed an initiative to hire 100 junior faculty from a variety of backgrounds over 5 years “in areas that advance interdisciplinary teaching and research” (University of Michigan, 2008).

According to the advocates of interdisciplinarity, the greatest contribution of interdisciplinary knowledge lies in its ability to create solutions for the vast problems which cannot be handled by individual disciplines (Klein 1990; Klein 1996). In this context, interdisciplinarity is perceived as one of the most promising human endeavors that can profoundly - but positively- change the face of our planet and transform our living. The National Academy of Sciences (NAS) report on interdisciplinarity (2004:1) provides a good overall summary that supports this view point:

“Interdisciplinary research (IDR) can be one of the most productive and inspiring of human pursuits—one that provides a format for conversations and connections that lead to new knowledge. As a mode of discovery and education, it has delivered much already and promises more— a sustainable environment, healthier and more prosperous lives, new discoveries and technologies to inspire young minds, and a deeper understanding of our place in space and time.”

Although the benefits of interdisciplinarity are self-evident truths among the advocates of interdisciplinary knowledge, there are two broad skeptical counter-arguments that dispute the taken for granted superiority of interdisciplinarity:

- 1) There is not enough empirical evidence that supports the claim that interdisciplinary knowledge/ research is superior over disciplinary knowledge/research (Jacobs and Frickel, forthcoming),
- 2) There is little known about the social/intellectual processes and institutional prerequisites that facilitate a flourishing environment for interdisciplinary endeavors (National Academy of Sciences, 2004; Jacobs and Frickel, forthcoming).

What do all these arguments mean for design disciplines? Without doubt, interdisciplinarity is one of the core traits of design disciplines (Buchanan, 1992; Cross, 1982). Since the idea of disciplinarity is built around the very notion of interdisciplinarity in design, the heated arguments revolving around interdisciplinarity pose fresh questions and challenges.

Within this context, the authors' aim is to critically assess the design literature in order to achieve a more comprehensive understanding of the concept of interdisciplinarity in design scholarship. Specifically, this paper will present the findings of a content analysis on two prominent journals, namely *Design Issues* and *Design Studies*, covering last ten years. Apart from being two of the oldest academic journals in the field, these journals are not specific to any single design discipline. Thus, it is meaningful to conduct a broad analysis regarding interdisciplinarity.

The focal points of our content analysis may be summarized in the following way:

- 1) Understanding the meaning and usages of the terms interdisciplinary and interdisciplinarity in design literature,
- 2) To identify if there is any consensus over what they mean and how they are used,
- 3) To evaluate the temporal trends in their usage,
- 4) To elucidate the relationships between the design disciplines and the broad concept of interdisciplinarity,
- 5) To provide a taxonomy of the studies that are related to interdisciplinarity and interdisciplinary knowledge creation.

Being more descriptive than explanatory, the findings of this content analysis will put the very process of the formation of a disciplinary culture in design disciplines/fields under a rigorous scrutiny.

### **PARTICIPATIVE DESIGN: A CROSS-DISCIPLINARY METHODOLOGY FOR IMPROVING THIRD WORLD' URBAN DEVELOPMENT**

Urban Development, Latin America, Periphery, Participatory Design, Cross-Discipline

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Main aim of this paper is showing the possibilities of improving integration of participatory design at urban development projects, changing rationalist thinking; which has addressed the work of disciplines involved with habitat production; into a different way of thinking inspired by the results achieved until now by new methodologies, such as qualitative research, participatory action research (IAP), situational analysis and so on; whose main concern is to remark that any intervention at habitat production, regardless its scale is part of a mayor system integrated by social, economic, cultural and physic context. (Oliveras, Romero y Mesías, 2004)

The selected topic for this approach is one of the most representatives at third world' context; reasons for choosing it have to deal with the explosive changes at Latin-America's urban structure experienced during last decades and the ones about to happen during next decades.

During last 20 years Mexico's city metropolitan zone (ZMCM) has experienced a decrease on inhabitants' figures, nonetheless urban sprawl has increased, by consequence a big change on urban structure has been generated, first indications appeared in 1980 when periphery emerged along with decentralization. Since then, sudden migration and lack of housing public policies concerned on solving poor people needs have generated irregular settlements emerging at periphery, and consolidated through self-housing "popular neighborhoods" which represent an important percentage of urban growth (Perló, Zamorano, 2005).

Nowadays migratory fluxes at ZMCM keep responding to the shortage of land for urbanization and its high prices at central districts; provoking a continuous expulsion of inhabitants' to periphery. An important fact related to this issue is that 59% of Mexico City's territory is conservation land; most of it belongs to social property. However, annual estimation shows that 300 ha are urbanized illegally; in addition the city does not have territorial reserves therefore its growing for next decades must be done by urban recycling and re-densification (Perló, Zamorano, 2005).

This framework shows basic interrelated factors for setting the research context, such as: the biggest sector of population represented by poor people; therefore popular housing is important, as well as housing production alternatives and owners involvement on them; then periphery consolidation becomes a significant part of the urban spot; which has to consider shortage of territorial reserves for supporting urban sprawl and so on.

Nevertheless, the objective of this research is to expose the possibilities to generate knowledge from participatory design (PD) experiences on self-housing issues, taking into account the co-work among stakeholders, and the support through techniques taken from social sciences, which are exploring methodologies such as Participatory Action Research (IAP) extracted from critic sociology, which has enabled researchers to develop a participatory analysis, for detecting population real problems and needs, in order to provide basis for elaborating proposals and solutions.

### **EXPLORING THE NEED AND MEANS FOR GREATER COLLABORATION IN THE DESIGN STUDIO**

Design Studio, Pedagogy, Collaboration, Teamwork, Design Process

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The design and implementation of even the simplest architectural projects are almost exclusively collaborative endeavors, often requiring individuals of diverse experience and background, working together to achieve a singular goal. Each highly trained in their respective areas, yet few (if any) are formally trained authorities in the skills of collaboration. This includes architects, individuals who are often put at the lead of design projects which include people of varied backgrounds, working styles and areas of expertise.

Historically, the education of an architect has been a highly individualized pursuit, focused on the development of an individual skill set that seldom includes collaboration beyond that of student and professor. While this individualized hands on approach to education has been highly revered by many, it often falls short of its potential and fails to recognize that the greatest design accomplishments of humankind have been the undertaking of collaborative enterprise. Furthermore, architecture students are being prepared in a manner that is contrary to the highly collaborative nature of the architectural practice they will enter.

As Collaborative methods begin to see increased popularity in the design studios, the next generations of architects will have a greater capacity to work within the growing range of complexities of architectural practice. It is no longer possible for an architect to build anything substantial without the help of multiple sources, whether it is within their own team or from outside contributors. This paper begins by exploring the need for collaborative design pedagogy by looking at what goals this methodology seeks to achieve and the methods by which it has been and currently is being implemented. After making a case for the use of collaborative design pedagogy the paper concludes by examining the anatomy of a collaborative design studio recently conducted with a group of first years graduate students in architecture.

**NARRI:  
UTILIZING THE FULL POTENTIAL OF NARRATIVE DATA  
THROUGH A DESIGN GAME**

Participatory Design, Design Games, Narrative Data, Interpretation, Jewellery Design

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This paper discusses three collaborative interpretation sessions which applied the same narrative material and basic game structure, but were organized in three different contexts. The aim of the paper is two-folded. Firstly, it presents how the game-like structure of the interpretation session enabled conducting a similar session with little effort in three different contexts and therefore gave inspiration for several design cases. Secondly, we suggest that collaborative interpretation with people with various backgrounds and skills provided important insights for the material and helped the researcher to gain wider understanding of the data in a shorter time than relying only on her own analysis.