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## Education, Design and Practice – Understanding skills in a Complex World

- **Paper / Proposal Title:**

An innovative approach to introducing effective interdisciplinary education in Architecture.

- **Author(s) Name:**

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- **University or Company Affiliation:**

Oxford Brookes University, School of the Built Environment

- **Presentation Method.** I would like to:

- submit a written paper only (and not attend/present)

- **Abstract (300 words):**

Insert 300 word description here – Century Gothic Font only / Justified both sides

In the last 30 years, the environmental and energy issues concerning urban qualities have deeply modified architectural and urban design practices. In this scenario, the concept of interdisciplinary design approach has emerged as a fundamental practice to connect the economic, environmental and societal spheres of the sustainability. Nowadays, all relevant architectural and urban projects are based on integration among a multitude of domains of knowledge.

As a consequence, Universities have updated their curricula, introducing the holistic approach into the traditional curricula to prepare future professionals to deal with

sustainable development. Nevertheless, the architectural education continues to remain a fundamental disciplinary training, where the need for integration is substantially related to theoretical discourses. This because of the lack of appropriate interdisciplinary learning environments, and the lack of dedicated interdisciplinary learning tool.

This study proposes a ground-breaking approach to fill this gap, offering a rigorous methodological apparatus to produce a cognitive tool dedicated to the interdisciplinary learning environment. This approach is based on the combined use of Constructive Grounded Theory Method, Cognitive Mapping technique and Meaningful Learning Activities. Constructive Grounded Theory was used to collect and organise interdisciplinary information into a well-defined conceptual framework. It is a qualitative approach where the perspective of the researcher (i.e. user) is emphasised. Cognitive Mapping technique was applied to support the adaptation and manipulation of this conceptual framework promoted by users with different backgrounds. Meaningful Learning Activities was practised to activate collaborative work among disciplines..

This approach was tested in interdisciplinary workshops dedicated to senior researchers, undergraduate and postgraduate students. The method was proved to investigate the energy issues in planning and architectural design. Several disciplines were involved (Architecture, Conservation, Civil Engineering, Energy Engineering, Economics, Planning). This paper proposes a review of these experimental experiences, pointing out the lesson learned.

Results indicate that it does not exist one type of interdisciplinary education that we can introduce into the traditional curricula. This factors may be considered one of the most important barriers towards a holistic approach training. In contrast, the results show how the cognitive approach adopted herein, may be useful to elaborate tools for a specific interdisciplinary design education developing absorptive capacities of future professionals. The opportunity to use this approach to introduce transformative pedagogies in the traditional curricula is also presented as a further step of this study.

• **Author(s) Biography (200 words each):**

Insert 200 biography here – Century Gothic Font only / Justified both sides

Dr Maurizio Sibilla is a Marie-Sklodowska Curie Fellow at the School of the Built Environment, Oxford Brookes University, UK. From 2012 to 2017 he was a postdoctoral researcher at Sapienza University of Rome. His work experience over the past years has focused on the construction of a bridge between technology and the design culture, focusing his interest in the area of environmental technologies where he has carried out relevant academic and professional activities. Since 2014 he has been developing innovative learning approaches based on combined use of Cognitive mapping Technique and Meaningful Learning Activities in the field of Architecture and Built

Environment Disciplines. He conducted international workshops as parts of several European Programmes (CmapER, EH-cmap, RESplan, ENplan, NET-learning).

Dr Esra Kurul is a Reader at the School of the Built Environment, Oxford Brookes University, UK. Esra's research is inter-disciplinary and wherever appropriate it is undertaken in collaboration with the industry. Her current research interests include inter-disciplinary collaboration to achieve sustainability in the built environment, adaptation of businesses to Climate Change, and the relationship between social capital and the effective management of knowledge.

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