• Paper / Proposal Title:
A Designerly Way of Computational Thinking towards Embodiment

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• Abstract (300 words):
For the last decade, we have been witnessing a paradigm shift in contemporary education. From K-12 to higher education, the conception of computational thinking is endorsed as one of the 21st century skills under different teaching methods and strategies; as opposed to that, we are about to experience the new realities of our coding and computing culture in different field of domains. However, as Jeanette Wing emphasizes (2017), the more we lean on computational thinking, the more we face with new challenges and opportunities in the educational background. Once the acknowledge of this approach was spread outside the computer sciences, different domains re-evaluate the meaning of computational thinking (CT) and looking for better ways to embed it in their education curricula. As John Dewey brilliantly puts it (1957) ‘The person who understands what the better ways of thinking are and why they are better can, if he will, change his own personal ways until they become more effective; until, that is to say, they do better the work that other mental operations cannot do so well.’ So, when it comes to higher education, it is important to gain a nuanced
understanding about CT and its cognitive process from a disciplinary perspective. In other words, the broad sense of this approach requires to be specified/narrated in particular ways to be adapted for different disciplines’ education curricula. However, the core components of CT -such as problem-solving thinking, abstraction, and decomposition- might recall different understandings among different disciplines. Regarding that, as a part of a doctorate research, our study offers an analytical study for a designerly way of developing computational thinking towards embodiment. It examines novice designers’ cognitive processes using their spatial skills through computational thinking. With this study, it is aimed to highlight how the core components of CT might differ from a designer’s perception and what would be the ways of empowering spatial skills through CT in design education.

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

Elif Belkis ÖKSÜZ is a teaching assistant and researcher working toward her PhD in Architectural Design at Istanbul Technical University, Faculty of Architecture. She has assisted in ITU Foundation Studios (the multidisciplinary design studio of first-year students) for three years. She graduated with a Bachelor of Architecture degree from Mimar Sinan Fine Arts University in 2011; and received her Master of Science degree in Architectural Design from ITU in 2013. In her Ph.D, she has been focusing on theories and practices of educational design technologies under the supervision of Gülen ÇAĞDAŞ. Also, she has been a researcher in PUDCAD – Practicing Universal Design Principles in Design Education through a CAD-Based Game Project funded by ERASMUS+ KA203 Programme.