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Educational landscapes of the digital age: Challenging the frontiers of digital landscape education — a discussion on future-oriented computational design thinking

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In the era of the 4th Industrial Revolution, oversaturated with the diversity and arbitrariness of digital and social media and rapidly evolving technological possibilities, it is time for serious reflection on the future of digital tools and methods in the area of landscape architecture.

Already in 2016, Klaus Schwab¹ described our current time as being at the beginning of a revolution that is fundamentally changing the way we live, work and relate to one another. A time characterized by new technologies fusing the physical, digital and biological worlds (Schwab, 2016). What significance and what kinds of possibilities are open to this much discussed area for curriculum design at the university level?

This debate, which has already taken off in the area of architectural education since the 1990s and anchored through the establishment of a number of innovative Chairs and Institutes in the curriculum, has only just begun in the field of landscape architecture. Fostered by pressure from professional practice, but mostly demanded for by students, we are currently standing at the threshold of developing entirely new concepts for teaching in the area of computational design thinking that go well-beyond mainstream applicationoriented topics such as GIS, CAD, BIM/LIM and the mere teaching of tools and software. It requires a fundamental rethinking and openness for a new area of knowledge, in order to recognize the potentials for teaching and research without losing the direct reference to landscape architecture (Girot, 2012).

The main focus of the paper is to introduce and reflect on an integrative computational design thinking approach, which requires the melding of computation, design and theory as an answer to the complex challenges facing the profession of landscape architecture. At this juncture, exemplary concepts will be highlighted, which have been developed and implemented at ETH Zurich and Aalto University. An essential part of the new approach lies in the fact that systems thinking provides the theoretical basis connecting the individual components.

Furthermore, focus is placed on the passing on of interdisciplinary knowledge and skill building. How can we teach students to be capable of quickly and flexibly navigating their way among digital media, as well as have access to key expertise in the area of machine learning in order to be able to link data with relevant information and broader concepts? The goal must be to inspire students for professional practice with a positive attitude towards Artificial Intelligence and emerging technologies, in order to strengthen them to use the technological possibilities at our disposal in innovative and creative ways and ultimately develop critical, bold, future-oriented approaches that will stand the test of time.

Note:

1. Founder and Executive Chairman of the World Economic Forum

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