THE IBV TRIAD AS A BACKBONE FOR TEACHING THE INNOVATIVE DEVELOPMENT OF CITIES

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Cities today face a new generation of problems that are not limited to infrastructure or spatial design but stem from the ways people connect, create, and contribute within rapidly changing technological and social systems. Artificial intelligence, automation, and data-driven governance reshape urban processes and introduce unprecedented efficiency, yet they simultaneously transform the human dimension of the city. As technology accelerates, citizens and students increasingly experience disconnection from their communities and a declining sense of authorship in collective innovation (Baumeister & Leary, 1995). This paradox—technical progress accompanied by social detachment—reveals that the core challenge for urban development is not only technological but also educational. If universities —the institutions that prepare future urban professionals — continue to rely on static, product-oriented teaching models, the gap between modern problems and innovative solutions will widen. Artificial intelligence will recombine past data rather than generate genuinely new perspectives, while human systems of meaning, identity, and collaboration remain stagnant (UNESCO, 2023). What is required is a pedagogical transformation that helps learners reconnect with themselves, with others, and with the identity of the city they serve. This paper proposes the Identity–Belonging–Values (IBV) triad as the conceptual backbone for such transformation, linking human experience in education to innovative urban development.

The IBV framework assumes that innovation is a social act grounded in contribution—what individuals add that is uniquely theirs and socially meaningful. Identity represents the learner's understanding of their perspective and potential role; Belonging reflects the recognition of participation in a shared community; and Values form the ethical compass that guides choices and trade-offs. When these three dimensions interact, they generate contribution, which in turn reinforces all three. Contribution is therefore the hinge that transforms individual learning into collective progress. Research on student involvement demonstrates that engagement is the single most potent predictor of learning outcomes (Astin, 1984). Students invest energy and creativity when they perceive their work as personally significant and socially valued (Strayhorn, 2018; Tinto, 2019). Similarly, organizational studies of psychological safety show that individuals learn and innovate more when they feel safe to contribute ideas

without fear of exclusion (Edmondson, 1999). The IBV model operationalizes these insights within design and planning education, offering a measurable framework for fostering participation and innovation. Urban theory supports this human-centered approach. Kevin Lynch (1960) and Jan Gehl (2010) both emphasize that cities possess identities shaped by collective memory and everyday experience. When people perceive this identity and see themselves reflected in it, they develop a sense of civic belonging that motivates contribution. Conversely, when citizens feel detached from their environment, innovation becomes superficial and externally imposed. Teaching that integrates IBV, therefore, prepares students to read and interpret the identity of place and to align personal and civic values within their work. The IBV Contribution Loop links both scales:

Personal → Identity → Belonging → Values → Contribution City → City Identity → Civic Belonging → Shared Values → Contribution → (Reinforces City Identity).

When contribution weakens, belonging collapses and identity loses meaning; when it strengthens, both person and city evolve together. Within this framework, artificial intelligence becomes a context rather than a solution. When treated as an author, AI undermines human participation; when treated as a reflective tool, it enhances learning and creativity. UNESCO's Guidance for Generative AI in Education and Research (2023) warns that uncritical adoption risks eroding agency and inclusion, urging educators to maintain human authorship and ethical oversight. This principle can be summarised as follows: if the author's name can be removed without loss of meaning, belonging did not occur. AI should therefore serve as a catalyst for reflection and exploration, not a substitute for contribution.

Embedding the IBV triad across university curricula transforms assessment from performance to participation. Rather than asking whether students meet technical standards, educators can evaluate how they contribute: what they add that is uniquely theirs (Identity), how they enable others (Belonging), and how their work reflects shared principles (Values). This model converts abstract ideals into concrete pedagogical practices. For example, in an urban-design studio, each team might define its interpretive lens, engage a real community partner, articulate one guiding value, and deliver a prototype accompanied by a reflective statement on how the process changed their perception of both self and place. Such exercises not only produce innovative outcomes but also cultivate the empathy, ethical reasoning, and collaboration that underpin sustainable city development (Wenger, 1998; UNESCO, 2021).

Innovation, then, is reframed as the renewal of relationships rather than the pursuit of novelty. When learners internalize the questions "Who am I?", "Where do I belong?", and "Why does this matter?", they develop the same cognitive and ethical capacities that cities require to navigate complexity and uncertainty. The IBV triad aligns educational psychology, urban theory, and ethical AI practice into a single human-centred narrative. It treats innovation as a shared authorship process in which contribution—both personal and collective—becomes the measure of progress. By teaching for contribution first, universities can cultivate the reflective practitioners capable of designing cities that are not only technologically advanced but socially coherent and alive.

References:

Ahmad, K. et al. (2022). Developing future human-centered smart cities: Critical analysis of smart city security, data management, and ethical challenges. Computer Science Review, 43, 100452.

Bayat, A. (2023). Digitization and urban governance: The house model for data governance. Urban Studies, 60(5), 899–915. Butler, L., Yigitcanlar, T., & Paz, A. (2020). Smart urban mobility innovations: A comprehensive review and evaluation. IEEE Access, 8, 196034–196049.

Desi Report. (2024). Digital Economy and Society Index, Germany profile. European Commission.

Erdmann, M. et al. (2023). Resilience governance in German critical infrastructures. Journal of Contingencies and Crisis Management, 31(2),