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Urban Climate Action Pedagogies

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Part of TU Delft's Climate Action program is developing climate action pedagogies at the classroom and course levels. This contribution presents our open pedagogical language that shares evidence-informed instructional design principles and teaching practices in which students not only learn about urban climate change and sustainability but, in particular, about intervening in society or industry (action!) and its effects in everyday practice. In addition to technical system knowledge, this type of education provides students with crucial ecological and social entrepreneurship skills.

The building blocks of this language are so-called pedagogical patterns, which describe a specific (set of) instructional design principle(s) of a course or classroom setting. Each pattern is presented in a comparable way via a given template that asks for [i] a title, [ii] an illustration, [iii] a hypothesis or statement on the value this pattern brings, [iv] the evidence from teaching practice and/or the educational scientific knowledge supporting the pattern, [v] a brief description of practical implications when implementing or using the pattern, [vi] the relation to other patterns. Pedagogical patterns are not prescriptive; they show what educators *could* do pedagogically.

Our first pedagogical patterns are based on the teaching practices of our Delft Climate Action educators and focus on:

*citizen science approaches focusing on the adaptation of the urban area to the weather and climate of tomorrow.

*interdisciplinarity for climate adaptivity in urbanised delta regions, where students work for and with a local government or stakeholder related to urban heat, drought, air pollution, and flooding.

* entrepreneurship in the built environment, where students develop a design and entrepreneurial plan for a sustainability challenge.

* action research focusing on socio-spatial inequality, diversity, resilience, and well-being for a climate challenge in a collaborative way with practitioners and community members.