Patterns constituing a complete pattern language.

Design patterns and a pattern language

The ideas of design patterns and pattern languages were originally introduced by architect Christopher Alexander and colleagues, in two books, A Pattern Language and The Timeless Way of Building. Even though it comes from from the domains within architecture Alexander's theory of design patterns has been use and adapted recently in domain such as object-oriented software system engineering, user interface design, and pedagogical educational design. As a concept is is seen to be useful in others domains as well.

What is a pattern ?

Accordig to Alexander a *"pattern describes a problem which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice (Alexander et al., 1977).*

Further patterns are meant to:

- Help us tell a relevant example of a learning activity with a formalism Capture expert experience
- Communicate expertise to others
- Present strategies regarding common recurring instructional decisions
- Collaborate with others in designing learning activities

Alexander and his colleagues recorded 253 design patterns into a **patterns language**. A pattern language is envisaged to guide a designer by providing workable solutions to all of the problems known to arise in the course of design.

The key elements of Alexander's patterns are:

- Name: A name to identify the pattern.
- Context: The situation(s) where the pattern is relevant.
- Forces: The forces present which may constrain or suggest alternative solutions. When these forces are in tension with one another, the problem is harder to solve and a compromise may be necessary.
- Solution: A solution which resolves, as far as possible, the various forces.