Visual abstraction as a key competence for critical thinking through art practice

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Abstract

Abstraction is an intellectual competence that enables the mind to analyse and comprehend concepts to develop new solutions. The ability to translate abstract spatial concepts into abstract sculptural artifacts, common in architectural design, needs to be practiced throughout life and can be transferred to contexts outside of architectural practice. This way, intellectual hypotheses from the humanities can be represented visually without abandoning science. By abstraction, the critical thinking of science can be transferred to artistic artifacts. This will be presented through visualizations developed closely with the German Archaeological Institute (DAI), Cologne Cathedral, or Bern Minster. The scientific hypothesis is translated through skills from architecture: modelling and photography. Firstly, genuine forms are designed. These are then projected as if they were built. This second step can be termed virtual photography. In conclusion, artistic creativity promotes competences and skills to cope with the uncertainties of the 21st century by practicing imagination and critical thinking through art, as taught in our architectural courses.
The methods are recording of the geometry, assignment of hypotheses, concepts of idealizations and abstractions, abstract modelling, identification of historical viewpoints,
Projection and iterative exchange between disciplines. The tools are hand sketches, CAD, projection, and image editing. Applicable to any age: In pre-school, it makes more sense to work with physical models; from school age, we have good experiences with CAD; from high school, almost the same can be achieved at universities because the core competencies are fundamental. Antiproportional is the acceptance of abstraction, therefore starting early is particularly fruitful.

Key words

archaeology; architecture; cultural heritage; photography; science

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