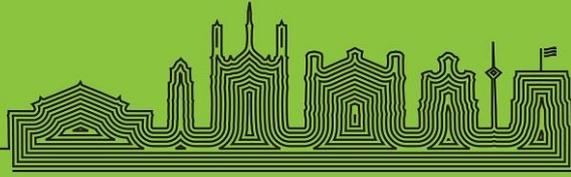




Constructionism 2018

Constructionism, computational thinking
and educational innovation

Vilnius, Lithuania, August 21 to 25



Working group

Constructionism in the classroom: creative learning arrangements on computational thinking

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An essential assumption of Constructionism is the idea that students learn best when they construct artefacts that they consider to be relevant (Papert). Additionally, the process of creating has educational value in itself, since creativity – the ability to generate new ideas – is an educational goal of high importance in a modern society (Resnick).

Computational thinking (Wing) made up of thought processes, such as abstraction, decomposition, algorithmic thinking, evaluation and generalization. This contribution discusses learning arrangements related to computational thinking, which challenge creativity (creative learnings arrangements). In more detail, these arrangements should have these common properties:

- Creativity. The students create a product that can be shown around later. This may be a physical artefact or a performance, which is documented (photo, video). The concrete outcome is very individual and may be surprising in contrast to analytical tasks with just one correct solution.
- Activity. The activity is experience-based. It (ideally) demands all the senses and challenges the whole person. It is more than for example just writing or programming something in silence.
- Communication. The activity is collaborative. The students work in teams in some way and communicate during the process.
- Time. The activity can be performed without preparation at hoc in one lesson in 5 to 40 minutes, in contrast to for example software development projects that are carefully planned and require weeks of work. The focus is on design ideas.

The research includes collecting existing arrangements, developing a classification scheme and identifying prototypes. This is the basis for an empirical study using a questionnaire. Since this is an international group we have connections to experts, which we could interview.

References

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