

# A CONTRIBUTION TO NON-EXISTENT (AS YET) PHILOSOPHY OF CREATIVITY IN MATHEMATICS EDUCATION

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The paper initiates the discussion of the subdomain of Philosophy of Creativity in Mathematics Education (PoCME). Such a subdomain doesn't exist yet; to a degree this situation is the reflection of the fact that the general philosophy of creativity is also in the *statu nascendi* (Paul & Kaufman, 2014, p. 3). Philosophy of Creativity of any scientific domain is needed whenever the domain encounters fundamental unsolved problems, implicit ambiguities in research and practice. It analyses the concepts and methods of scientific theories, engages with the interpretation of their results and heuristically helps in formulation of new ones. It starts accordingly to Ernest (2018) with the critical examination of fundamental problems, two of which we discuss shortly here: What is creativity? What is the relationship between creativity and learning? We intend to address the issue of creativity and rationality in mathematics education.

The methodology of work here engages two sources: two recent volumes of philosophy of creativity of Paul and Kaufman (2013) and Gaut and Kieran (2018) to help identifying corresponding issues in Math Ed; as well as relevant research and practice within mathematics education, which bring the critical problems to the forefront, sometimes not "covered" by the general approaches (Czarnocha & Baker, 2021).

The problem of the different definition of creativity used in mathematics education is well known; we discuss two most often met approaches of Guilford's divergent thinking and of the stage theory of Wallas / Hadamard, show their difficulties in addressing creativity of all students in the context of curriculum, offer new definition of creativity based on the creativity of Aha! Moment and suggest that different student populations might be sensitive to different definitions (different aspects) of creativity.

The discussion of creativity and learning demonstrates that while we can always identify learning within the creative act, facilitation of creativity in learning requires special creative learning environment. We signal the issue as one of the critical problems in the quest to introduce creativity systematically into curriculum.

## References

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