CALL FOR PAPERS for the CEPS Journal*
1/2018

(ISSN 2232-2647 [online edition] ISSN 1855-9719 [printed edition])
[http://www.cepsj.si/doku.php?id=en:cepsj]

Experiments in physics teaching and learning

(Focus editor: *Jerneja Pavlin*)

Significant changes have appeared in the field of physics education in recent decades, with emphasis being placed on the importance of teaching and learning physics by carrying out experiments. The experiment plays an important role in the classroom, in terms of both education and motivation. Although teachers are often interested in introducing and designing school experiments, they frequently fail to give adequate consideration to the practical introduction of experiments in physics teaching and learning. Similarly, the simple hands-on experiments as well as the complex experiments one can find in textbooks require adaptation for specific use in the classroom. In teaching physics, one must also consider how to include modern content that students encounter every day, in order to reduce the gap between daily life and school physics. Research shows the positive effects of experiments on learners, demonstrating that experiments are a powerful tool for relating phenomena in a way that is not possible in lectures. Furthermore, experiments provide a starting point in the construction of knowledge, so it is important to use them in the classroom. It has, however, been observed that experiments are mostly based on demonstrations and are not performed often enough by students themselves, even though it is known that carrying out experiments accustoms students to accurate observation, measuring, recording measurements, comparing, ordering, posing hypotheses, testing, discussing, interpreting, etc., competences that are also transferable to other fields. As early as in 1973 in their *Second Handbook of Research on Teaching*, Shulman and Tamir identified five groups of objectives that can be met by students while carrying out experiments: skills, concept development, cognitive skills, understanding of the nature of science, and attitudes.

This CEPS Journal special issue aims to bring together a set of contributions that examine the role of experiments in physics teaching and learning. The following content areas present some of the themes of the articles: the role of experiments in physics education, experiments and illustrating a phenomenon or science concept, experiments and physics concept development, experiments and the application of science in everyday life, the development of competencies through experimental work, the impact of hands-on experiments on achievement, the evaluation of laboratory activities on different levels of education, experiments and the role of the teacher, etc. At the same time, CEPS Journal welcomes papers dealing with the analysis of experiments in physics textbooks and the evaluation of real situations in physics teaching.

---

* The CEPS journal is indexed and abstracted by Scopus, EBSCO – Education Source Publications, ProQuest, Directory for Open Access Journals, Academic Journals Database, The Directory of Research Journal Indexing, Open Access Journals Search Engine, Scirus.

Article submission timeline

15 May 2017: submission of paper title and abstract [300 words max.]

30 November 2017: paper submission [6500 words max.]

March 2018: publication of the focus issue in the CEPS Journal