

The 11th International Conference on:

Excellence in Education

The Creativity – Innovation Challenge

Paris - France (July 7-10, 2014)

PROGRAMME

Todd Lubart (Conference Chair) Sandra K. Linke (Co-Chair)

Linda Jarvin (Co-Chair)



Excellence & Innovation in Education 2014:
The Creativity – Innovation Challenge
(Paris – France, July 7-10, 2014)

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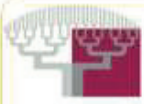
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Digital World

B.1 Aharon Gero; Wishah Zoabi. *Animation as a Tool to Improve Students' Achievements in Electronics.* (B.1) A central topic taught in electrical engineering is the structure and principle of operation of electronic devices. Two-year college students often face great difficulty when studying this subject due to its complexity. A previous study indicated a significant gap between the academic achievements of students studying the topic of the bipolar junction transistor – a fundamental electronic device – through computer animation and those of their peers who studied it using static diagrams drawn on the board. The gap, in favor of the first group, was accompanied by a large effect size. The current study examined whether animation based learning has an effect on students' achievements in the case of a different important electronic device – the field effect transistor. The research population comprised of 40 electronics students in a leading two-year college in Israel. The study used quantitative tools alongside qualitative ones. For the quantitative part, the pretest-posttest control group design was chosen. At the qualitative part, data were collected through semi-structured interviews. According to the findings, the academic achievements of students studying the topic of the field effect transistor through computer animation were significantly higher than those of their peers who studied the same subject using static diagrams, and the effect size was large. This gap can be attributed to findings obtained from the interviews, according to which animation enhances understanding and creates interest. These findings are explained in light of the cognitive theory of multimedia learning and the cognitive load theory.