Biocards and Level of Abstraction

Biocards are formal descriptions of biological phenomena and their underlying functional principles. They are used in bioinspired design to document search results and to communicate the findings for use in the further design process. The present study explored the effect of abstraction level used in biocards. This was done in two workshops conducted with design students in Denmark and India. Students were given a design assignment and instructions for how to perform the BID ideation work. Half of the students were given biocards with abstract descriptions while the other half got biocards with concrete descriptions. The novelty of found solutions was evaluated by the students by rating novelty of each solution on a scale from 1 to 5. Mean values for abstract descriptions were 0.3 higher than for concrete descriptions indicating that more innovative solutions were found when students used biocards with abstract descriptions compared to concrete descriptions. The difference in mean value is significant with a confidence level better than 1%. It seems likely that more abstract descriptions in biocards helps avoiding design fixation in biomimetic design work.

General information
Publication status: Published
Organisations: Department of Mechanical Engineering, Engineering Design and Product Development, Department of Management Engineering, Technology and Innovation Management, Indian Institute of Science
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Number of pages: 10
Publication date: 2015

Host publication information
Title of host publication: Proceedings of the 20th International Conference on Engineering Design (ICED15)
Publisher: Design Society (ICED; No. 15).
Keywords: Bio-inspired design and biomimetics, Biocards, Abstraction level, Analogical reasoning
Electronic versions:
ICED15_471.pdf
Research output: Chapter in Book/Report/Conference proceeding › Article in proceedings – Annual report year: 2015 › Research › peer-review