

Empathy, Aesthetics, and Creativity in Design Thinking Education: Evidence from an Ageing-Simulation Workshop for Adolescents

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Abstract:

This study evaluated the instructional effectiveness of an innovative product design thinking workshop addressing ageing-related issues and explored the psychological predictors of individual creative performance within collaborative team contexts. Participants were 27 Taiwanese senior high school students. A pretest-posttest experimental design was conducted in accordance with research ethics guidelines for minors, with parental consent obtained prior to participation. The workshop activities included: (1) design thinking instruction; (2) empathy-based experiential learning, in which students wore ageing simulation equipment and engaged in challenge-based activities to experience the physical and psychological conditions of older adults; (3) the development of emotional posters and empathy maps to identify users' latent needs and emotional responses; and (4) the formulation of design viewpoints and innovative product concepts as the final learning outcomes. Paired-samples t-test results indicated that the instructional activities significantly enhanced students' cognitive empathy, affective empathy, and creativity-related personality traits. Hierarchical regression analyses further revealed that, after controlling for demographic variables, aesthetic appreciation emotion and affective empathy significantly predicted both intrinsic creativity traits and team creative performance. Among these variables, aesthetic appreciation emotion and affective empathy emerged as the strongest predictors of creativity and collaborative innovation outcomes. The findings suggest that integrating aesthetics and empathy into design thinking education can effectively stimulate adolescents' creative potential, strengthen user-centred insight, and enhance collaborative creative performance in innovation-oriented learning environments. This study was funded by the National Science and Technology Council, Taiwan, R.O.C., under Grant NSTC 114-2221-E-029-016.

Keywords:

Design thinking, creativity, empathy, insight, adolescent aesthetic appreciation.

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