

Mindset Intervention
David Hall, Lawrence University

Resource A: Teaching Creativity

Creativity + Growth Mindset (learning to embrace failure) = Innovation?

What is the basis for creativity literature, music, visual arts, theatre, science and dance, in the liberal arts? In all of these fields, the wondrous element of creativity is key to great accomplishments and advances. Rothenberg's investigation into creativity described in the book *Flight From Wonder: An Investigation of Scientific Creativity* has involved autobiographical studies and structured interviews focused on the creative achievements of 45 Nobel laureate scientists from the United States and Europe in comparison with matched university engineer controls.

Use of aspects of the cognitive and emotional processes produces creative results in many everyday activities such as business, education, sports, cooking and a broad range of fields. Creative achievement results from complex thinking and hard work. Innovation does not spring simply from intelligence, spontaneity, special skills, offbeat or extremely unusual ideas and behavior, although all of these may in particular aspects be involved. In addition to the cognitive processes, mentorship and emotions of love for the project, courage, and intense devotion to learning are critical in creativity.

Innovation (creativity) is a valued human capacity or state and the term has been applied to a wide variety of accomplishments and products. The generally accepted definition of innovation is that it is the production of both new and valuable entities. Generally accepted in all creativity studies is that the process involves out of the ordinary or divergent types of thought such as the popular idea of "thinking outside the box." Research has identified cognitive creative processes named: 1. janusian process, 2. homospatial process, 3. sep-con articulation process. All three of these processes lead to the production of something both new and valuable.

BBC program on insight

<http://www.bbc.co.uk/programmes/b01rbynt>

Take a regular process and do it in a different way. Also explains how insight occurs on the biological level. I have students watch portions of this program.

Janusian creativity process

<https://www.psychologytoday.com/blog/creative-explorations/201506/the-janusian-process-in-creativity>

Homospatial creativity process

<https://www.psychologytoday.com/blog/creative-explorations/201507/the-homospatial-process-in-creativity>

Sep-con creativity process

<https://www.psychologytoday.com/blog/creative-explorations/201507/the-sep-con-articulation-process-in-creativity>

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Associative thinking exercises

These exercises I use to encourage students to develop communication and connection skills, feel comfortable with failure and apply creativity precepts.

<http://creativethinking.net/exercises/>

<http://practicalpersonalcreativity.blogspot.com/2012/05/associative-thinking-here-is-quick.html>

<http://farthertogo.com/tag/associative-thinking/>

Teaching Thinking Skills with Fairy Tales and Fantasy

https://books.google.com/books?id=KwTAyF3f8hYC&pg=PR5&lpg=PR5&dq=associative+thinking+exercises&source=bl&ots=MYzQnKaM_s&sig=4hJqmJbAgZ8NVEdstm-5v9FaTU&hl=en&sa=X&ved=0ahUKEwikh9KF0_rWAhWFwYMKHfT2DQgQ6AEISzAF#v=onepage&q=associative%20thinking%20exercises&f=false