CultureCase

How learning visual art improves creativity and changes the brain

This research was conducted by **Alexander Schlegel and eight others** at **Dartmouth College, USA and Beijing Normal University, China.**

Summary

This study investigated the impact of visual art training on young adults' behaviour and changes in brain activity. A group of undergraduate students who were given introductory painting or drawing lessons showed improved creative thinking, better ability to draw from observation and changes in the brain's white matter compared to students who were taking introductory organic chemistry classes. No changes in ability to perceive and create realistic representations of surrounding objects were observed between the two groups of participants.

Students took either visual art or chemistry lessons

35 undergraduate students were recruited for this three-month long study, out of which 17 took painting or drawing classes and 18 attended chemistry lessons at Dartmouth College. All participants were given a set of behavioural tests at the beginning and end of the study in addition to being subjected to monthly brain scans. The behavioural tests assessed their creativity at the start and end of the study, while the scans collected data about their brain structure and function. The functional brain scans were carried out whilst the participants were performing standard tasks such as interpreting visual illusions and 30 second gesture drawings.

Art students became more creative, with correlated brain structure changes

After thorough analyses of the data the researchers concluded that students who study art showed no change in perception and accurate representation of the surrounding world compared to the control group. They did however show improved gesture drawing abilities, in correlation with a change in their brain scan pattern compared to the control students, as well as improved creative thinking via changes in the structure of the white matter in the anterior-most part of their brains. The authors speculate that this region of the brain may be responsible for the mediation of activity that leads to increased creativity via art training. The researchers suggest further in-depth analyses to elucidate the cellular mechanisms by which learning is able to change the brain.

This summary is by **Elena Popa, King's Knowledge Exchange Associate.**

Keywords

creativity **experiment** **brain** **USA**

Title	The artist emerges: Visual art learning alters neural structure and function
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