

# Composing creativity: Children benefit from new painting materials

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New research out of the Japan Advanced Institute of Science and Technology (JAIST) uses digital image analysis technology to shed light on some of the challenges children face when representing their imaginations through the medium of paint. The research also offers concrete insight into the development of children's psyches, and importantly, offers suggestions for educators to improve children's cognitive, spatial, and artistic abilities.

Painting is a recreational and creative activity enjoyed by children across the world. However, children's paintings also serve as crucial artifacts of their perceptions, as they contain the sum of what children see as "essential." The spatial relationships between objects in paintings represent painters' experiences and technical prowess, and tend to indicate shortcomings of either. These are often perceived by viewers of paintings, but until now, detailed evaluation and analysis of children's art has been subjective, relying on the trained eye of an artist or critic.

JAIST researchers Lan Yu and Yukari Nagai have developed and tested a digital analysis process by which children's paintings can be digitized, categorized, and then thoroughly analyzed. Content, scale, patterns, details, and the relationships between objects in the paintings are objectively quantified and calculated.

Trends identified among the subjects sampled, 182 girls and 234 boys in the Republic of China, indicate that children who have not received instruction display poor abilities to recognize and emulate spatial

relationships. The younger the painter, the less likely that he or she will have developed these [cognitive abilities](#). Lack of detail and inability to imitate objects is identified as common to children's [painting](#). Statistical analysis of the boys and girls in this study indicated that they have different attitudes toward painting; girls preferred participating in painting more than boys did. It was also apparent that girls were more able to accurately imitate real objects when representing them in their paintings.

This research has implications in art education, suggesting that art teachers focus on several key elements which are useful to the cognitive development of young painters. Guiding children to paint objects outside could enhance their awareness of their natural environments. Focusing instruction on object size, and the ability to recognize and control it, could remedy this crucial deficit in children's paintings. Specifically training students to imitate objects could show significant results in the overall quality of children's paintings. And finally, instruction in composition and creative methods is correlated to increasing the enjoyment and reducing children's perception of difficulty toward painting as a creative process.

**More information:** Lan Yu et al. An Analysis of Characteristics of Children's Growth through Practical Art, *Healthcare* (2020). [DOI: 10.3390/healthcare8020109](https://doi.org/10.3390/healthcare8020109)

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