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Creativity in Science: Tensions between Perception and Practice

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ABSTRACT

Many countries are reviewing science education programmes and implementing new pedagogical paradigms aimed at reversing a trend of declining enrolments. A key factor in this decline is a public perception that science is not a creative endeavour. Attempts to reframe public perception tend to focus on primary and secondary schooling, but do little to address ongoing declines in quality and originality of intellectual output beyond the highschool environment. To overcome systemic devaluation of science requires appreciation of the complex, dynamic, and often stochastic, interplay of sociocultural, psychological and cognitive factors that drive human creativity. Viewing creativity from this perspective reveals tensions between perception and practice that limit opportunities for students, science educators and scientists. Resolving the tension requires integration of developmental, psychometric and sociocultural discourses of creativity in ways that generate opportunities for individuals at all levels of education and practice to: 1) acquire a high level of domain-specific knowledge; 2) practise application of that knowledge in developing solutions to problems across a gradient of difficulty and; 3) be challenged to integrate their knowledge of science with their knowledge of other fields to pursue and solve problems with personal relevance.

KEYWORDS

Science Education, Teaching for Creativity, Contextual Science, Context-Based Learning, Inquiry-Based Learning, Creativity, Scientific Creativity

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