

Nurturing Students' Creativity through Engagement in Problem Posing and Self-Assessment of Its Development

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Abstract : In a rapidly changing technological society, creativity is considered as an engine of economic and social progress. No doubt the education system has a central role in nurturing all students' creativity, however, it is normally not encouraged at school. The causes of this reality are related to a variety of circumstances, among them: external pressures to cover the curriculum and succeed in standardized tests that mostly require algorithmic thinking and implementation of rules; teachers' tendency to teach similarly to the way they themselves were taught as school students; relating creativity to giftedness, and therefore avoid nurturing all students' creativity; lack of adequate learning materials and accessible tools for following and evaluating the development of students' creativity; and more. Since success in academic studies requires, among other things, creativity, lecturers in higher education institutions should consider appropriate ways to nurture students' creative thinking and assess its development. Obviously, creativity has a multifaceted nature, numerous definitions, various perspectives for studying its essence (e.g., process, personality, environment, and product), and several approaches aimed at evaluating and assessing creative expressions (e.g., cognitive, social-personal, and psychometric). In this framework, we suggest nurturing students' creativity through engaging them in problem posing activities that are part of inquiry assignments. In order to assess the development of their creativity, we propose to employ a model that was designed for this purpose, based on the psychometric approach, viewing the posed problems as the "creative product". The model considers four measurable aspects- fluency, flexibility, originality, and organization, as well as a total score of creativity that reflects the relative weights of each aspect. The scores given to learners are of two types: (1) Total scores- the absolute number of posed problems with respect to each of the four aspects, and a final score of creativity; (2) Relative scores- each absolute number is transformed into a number that relates to the relative infrequency of the posed problems in student's reference group. Through converting the scores received over time into a graphical display, students can assess their progress both with respect to themselves and relative to their reference group. Course lecturers can get a picture of the strengths and weaknesses of each student as well as the class as a whole, and to track changes that occur over time in response to the learning environment they had generated. Such tracking may assist lecturers in making pedagogical decisions about emphases that should be put on one or more aspects of creativity, and about the students that should be given a special attention. Our experience indicates that schoolteachers and lecturers in higher education institutes find the combination of engaging learners in problem posing along with self-assessment of their progress through utilizing the graphical display of accumulating total and relative scores has the potential to realize most learners' creative potential.

Keywords : creativity, problem posing, psychometric model, self-assessment

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