MEASURING WHAT MATTERS

A PEOPLE FOR EDUCATION PROJECT

MEASURING WHAT MATTERS: CREATIVITY IN SCHOOLS

Creativity is an essential aspect of schooling and one of the key competencies that young people need for success in the modern world of ever-increasing change.[1] Despite its importance, it is usually overlooked in measures of school quality and student outcomes.

WHAT IS CREATIVITY?

It is widely agreed that creativity involves the generation of novel and valuable ideas or products.[2] Some researchers have identified creativity as a process with different stages, including: preparation, where the dimensions of the problem are explored; incubation, where the problem is internalized but there are no external signs that the problem is being addressed; intimation, where there is a sense that a solution is forthcoming; illumination, where the idea becomes evident; and verification, where the idea is elaborated, tested, and applied.[3]

There are many different forms and degrees of creativity. There is the creative genius (sometimes referred to as Big-C) involved in discoveries like Penicillin, and there is the everyday creativity (sometimes referred to as little-c) required to solve commonplace problems and adapt to ordinary changes.[4] While creativity is obviously present in the fine and performing arts, it also exists in engineering, in business and entrepreneurship, and even in the outdoor and domestic arts, including hiking, cooking, gardening, and carpentry. Less obvious but equally compelling, creativity is a way to approach disciplines such as mathematics and science. Mathematicians and scientists who have made great breakthroughs in their fields often describe their thinking in creative terms, speaking about mental imaging and seeing entire solutions to problems at once.[5]

Creativity also requires the capacity for critical thinking. Creativity and critical thinking can be seen to complement one another: being creative without the skills to assess the process and products of creativity is an incomplete creative act.

WHY IS CREATIVITY IMPORTANT?

Fostering creativity in students helps them to develop resilience, resourcefulness, and confidence—preparing them to address life's challenges.[6] Creativity also carries its own intrinsic value. Developing creative sensibilities and habits enhances quality of life for teachers and students.

Creativity carries indirect benefits. Creative explorations give students experiences with situations in which there is no known answer, where there are multiple solutions, where the tension of ambiguity is appreciated as fertile ground, and where imagination is honoured over rote knowledge.[7] Research suggests that creative pursuits also help students to learn more effectively in other domains. Studies have documented the relationship between rich in-school arts programs and the creative, cognitive, and personal competencies needed for academic success.

HOW DO SCHOOLS FOSTER CREATIVITY?

Creativity is a constant feature of the school experience. When students gain new insights about solving a math problem or when they produce genuinely interesting projects, they are manifesting their creativity. Creativity in schooling can be seen as an approach that is brought to learning activities—a mindful, open, flexible, critical, and experimental way of being.

Creativity thrives in classrooms that support personal interests and engage students in challenging tasks.

Schools help students develop their dispositions for creativity in a number of different ways: through everyday teaching strategies that foster creativity; by teaching creativity directly; and through programs that provide rich opportunities for creativity.

Everyday aspects of the classroom that foster creativity include: encouraging students to pose questions and share their insights and ideas; helping students to identify problems and issues; providing opportunities for discussion and debate; and encouraging students to be active participants in their own learning.[8] Creativity thrives in classrooms that support personal interests and engage students in challenging tasks.[9]

Teachers also teach creativity directly. For example, there are techniques to improve creative thinking skills such as approaching tasks with fluency, flexibility, and openness.[10] Teachers also help students develop creative metacognition, that is, the ability to evaluate one's own creative strengths and limitations as well as when and where to be creative.[11]

Another approach to setting conditions that foster creativity is the integrated program, where the learning requirements for several different courses are combined into a single project. The merging of ideas and the cross-subject connections that students make often stimulate larger leaps of creativity than typically occur within individual courses.[12] Examples include new house construction, environmental leadership, renewable energy technology, and musical digital media.

School-community partnerships also provide opportunities for creativity. Programs such as *Learning through the Arts* foster creativity by bringing local artists into the classroom to plan and teach curricula with classroom teachers and by developing creative school-based and community-based projects.

HOW CAN CREATIVITY BE MEASURED IN SCHOOLS?

Although rarely done, it is both possible and desirable to measure creativity in schools.

Measuring creativity inspires the development of better curricula and teaching practices[13] and provides formative feedback so that students can continue to develop their creative strengths over the lifespan.[14] **By measuring creativity, the fundamental importance of creativity as a key part of schooling is underscored.** Creativity encompasses a number of different competencies that students acquire and/or develop over the course of their educations. Creative competencies include:

- Fluency, flexibility, originality, and the ability to elaborate;[15]
- Metaphorical thinking;[16]
- Skilled observation, visualization, pattern detection, empathy, and play;[17]
- Tolerance for uncertainty, open-mindedness, risk taking, patience, deferral of judgment, and resilience;[18]
- The ability to pose problems, gather information through all the senses, find humour, think interdependently, communicate with precision, strive for accuracy, think flexibly, and respond with wonderment and awe;[19]
- Reframing, detecting, and decentering.[20]

Critical thinking has also been identified as an essential component of creativity[21]: the process of creativity is incomplete if the individual lacks the capacities necessary for assessing the process and products of creativity.

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A comprehensive model that incorporates the competencies of both creativity and critical thinking has been developed and adapted as a tool for creativity measurement suitable for the school context. The model describes five creative habits of mind and 15 sub-habits.[22] This tool provides a formative assessment of creative thinking that can be used by teachers and by students to assess their own creative habits. Below are both the five habits (in bold) and the three sub-habits associated with each habit:

- INQUISITIVE (wondering and questioning, exploring and investigating, challenging assumptions)
- PERSISTENT (sticking with difficulty, daring to be different, tolerating uncertainty)
- IMAGINATIVE (playing with possibilities, making connections, using intuition)
- COLLABORATIVE (sharing the product, giving and sharing feedback, cooperating appropriately)
- DISCIPLINED (developing techniques, reflecting critically, crafting and improving)

Another approach is to measure the conditions for creativity within school. The emphasis is not on the "outputs"—that is, the creative products created by individual students, but rather, on the "inputs"—namely, the situations in which students might be called upon to think and act creatively. Examples of creative inputs would include fine and performing arts classes, scientific investigations, theatre and dance performances, debating clubs, independent research opportunities, entrepreneurial projects, school-community partnerships, and integrated curricula.

One of the main advantages of evaluating creativity in schools is that it underscores the importance of creativity to the school experience. Measuring creativity also provides critical feedback, guiding students in their creative development and guiding schools toward optimal conditions for fostering creativity. For all of these reasons, creativity must be included in measures of student and school success.

ENDNOTES

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People for Education – working with experts from across Canada – is leading a multi-year project to broaden the Canadian definition of school success by expanding the indicators we use to measure schools' progress in a number of vital areas.

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J.C. Couture, Associate Coordinator, Research, Alberta Teachers' Association

Fiona Deller, Executive Director, Policy and Partnerships, Higher Education Quality Council of Ontario

Kadriye Ercikan, Professor, Measurement, Evaluation and Research Methodology, University of British Columbia

Bruce Ferguson, Professor of Psychiatry, Psychology, Dalla Lana School of Public Health, University of Toronto; Community Health Systems Research Group, SickKids

Joseph Flessa, Associate Professor, Leadership, Higher and Adult Education, Ontario Institute for Studies in Education, University of Toronto

Joan M. Green, O.Ont., Founding Chief Executive Officer of EQAO, International Education Consultant

Andy Hargreaves, Thomas More Brennan Chair, Lynch School of Education, Boston College

Eunice Eunhee Jang, Associate Professor, Department of Applied Psychology & Human Development, Ontario Institute for Studies in Education, University of Toronto

Christopher Kotz, Senior Policy Advisor, Ontario Ministry of Education

Ann Lieberman, Stanford Centre for Opportunity Policy in Education, Professor Emeritus, Teachers College, Columbia University

John Malloy, Director of Education, Hamilton-Wentworth District School Board

Roger Martin, Premier's Chair on Competitiveness and Productivity, Director of the Martin Prosperity Institute, Rotman School of Management, University of Toronto

Ayasha Mayr Handel, Ontario Ministry of Children and Youth Services

Catherine McCullough, former Director of Education, Sudbury Catholic District School Board

Robert Ock, Healthy Active Living Unit, Health Promotion Implementation Branch, Health Promotion Division, Ontario Ministry of Health

Charles Pascal, Professor, Ontario Institute for Studies in Education, University of Toronto, **Jennifer Riel**, Associate Director, Desautels Centre for Integrative Thinking, Rotman School of Management, University of Toronto

Joanne Robinson, Director of Professional Learning, Education Leadership Canada, Ontario Principals' Council

Bruce Rodrigues, Chief Executive Officer, Ontario Education Quality and Accountability Office

Pasi Sahlberg, Director General, Centre for International Mobility and Cooperation, Finland

Alan Sears, Professor of social studies and citizenship education, University of New Brunswick

Stuart Shanker, Research Professor, Philosophy and Psychology, York University; Director, Milton and Ethel Harris Research Initiative, York University; Canadian Self-Regulation Initiative

Michel St. Germain, University of Ottawa, Advisors in French-language education

Kate Tilleczek, Professor and Canada Research Chair, Director, Young Lives Research, University of Prince Edward Island

Rena Upitis, Professor of Education, Queen's University

Sue Winton, Assistant Professor, Faculty of Education, York University and former Early Learning Advisor to the Premier Deputy Minister of Education

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641 Bloor St. West, Toronto, ON M6G 1L1
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641 Bloor Street West, Toronto, ON M6G 1L1
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