

Achieving Growth through Innovation: The Role of Arts Education in Supporting Economic Sustainability

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May 2014
Commissioned by the Saskatchewan Arts Alliance

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Overview

This position paper is going to address the following 5 points:

- i.) The role of innovation to support sustainability and growth in a mature market economy such as we have in Saskatchewan.
- ii.) The relationship and impact that creativity has on innovation.
- iii.) The role that education, and particularly arts education, plays in the systemic development of creativity and the creative potential of people.
- iv.) The importance of innovation and its relationship to competitiveness.
- v.) Moving an innovative agenda forward in the education system.

Developed economies around the world are in the midst of intense and rapid change. Canada currently has the 14th largest economy in the world. However, this is predicted to drop to 18th

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or lower over the next 20 to 30 years. Part of the issue is that Canada, including Saskatchewan, has mature economies that experience between two to three percent growth annually. The only way to eclipse this growth is through creating new value, and creation of new value is only possible through innovation. This is particularly important in a province like Saskatchewan given that we are primarily commodity-oriented and service-based. As a result, it is difficult to achieve growth beyond the organic rate of 2.5% per year (GDP). To grow beyond this, organizations in Saskatchewan will need to create differential value through innovation.

The leading innovation economies in the world which include Sweden, Finland, Germany, Switzerland, and Japan are anchored by a strong and systemic focus on primary, secondary and post-secondary education. Well-educated economies always lead in innovation, and one of the primary drivers of innovation is creativity of people. It is therefore essential that education systems support the development of creative potential amongst students, so that they can continue to be creative in the workplace, and be active contributors to economic growth.

Everyone wants the best possible education for our children, but it's difficult to find agreement on the most appropriate mix of programs, curriculum, tests and approaches to achieve this goal. In schools all across this Province, teachers, parents and administrators are continually making decisions about the skills students will need, and about the best way to use scarce resources to deliver curriculum and meet competing demands. Given the correlation of arts education to

creativity, where does it fit in the restructuring of education? Are arts education programs vulnerable?

In fact, arts education has always been implemented inconsistently across the Province. Some schools have extremely strong arts programs, while others give arts education little or no attention in the formal timetable, and offer education in the arts only through extracurricular activities. The fear is that if we continue to downsize and ignore the central role of arts education in developing an innovative population, the creative potential of pre-k to 12 students will be compromised. It is important to note that public support for arts education in Canada is strong – 72% of Canadians agree that it's important to expose children to the arts (Ontario Arts Council, *Making the Case for Arts Education*), and a growing body of research is proving that arts education helps children develop and learn.

Innovative and high quality arts education programs have a direct impact on students' ability to learn, and to be creative. Individuals who are successful innovators have higher than normal exposure to the arts.

The Importance of Innovation

Innovation is the creation of new value. It involves generating ideas around products, services and processes, and having a system that manages the implementation of value-creating ideas on a consistent and reliable basis. Every organization – ranging from not-for-profit to public sector to publically traded companies – can benefit from a systematic approach to innovation management that creates new value for stakeholders.

The Conference Board of Canada has defined innovation as “the process through which economic and social value is extracted from knowledge through the generation, development, and implementation of ideas to produce new or improved strategies, capabilities, products, services, or processes.” This definition is consistent with the enterprise view of innovation required to sustain new value creation in an economy.

Innovation, therefore, is on the top of mind for many organizations. A *Boston Consulting Group* survey revealed that 64% of senior managers agreed that innovation is a top strategic focus for their organizations. They believe that innovation provides strategic value and is a key differentiator because it can:

- unleash creativity amongst employees which can lead to enhanced value creation;
- decrease costs through increased efficiencies;
- reduce competitive and financial risk;
- create better positioning and performance outcomes;
- lead to higher levels of customer satisfaction and employee satisfaction/retention; and
- elevate employee behaviors and actions beyond that of competitors, which are not capable of being imitated by competitors.

Innovation is tangible, and so are the outcomes for those organizations that successfully adopt innovation. Organizations that possess strong innovation cultures lead their respective industries. For example, the top 25% of companies (as measured by top line financial performance) have innovation orientation scores that range up to 22% higher than bottom quartile performers (Strategian F1000 Survey, 2013ⁱ). As well, organizations that focus on innovation capabilities report higher profit margins by up to 22% (Jaruzelski and Dehoff, 2010),

and an increase in earnings before interest and taxes of 4% and more than 10 times higher returns from their innovation investments (Arthur D. Little, 2005).

There is a good deal of evidence to support both the financial returns of innovation, as well the non-financial outcomes. Some of the non-financial outcomes include such things as lower employee turnover, less absenteeism, higher productivity, higher levels of optimism, and a better engaged collective spirit.

Characteristics of Innovative Organizations

Successful organizations recognize the need to continually reinvent themselves in efforts to remain competitive. For these organizations, innovation is a priority. They rely on it to identify opportunities and execute new growth strategies. Organizations that are innovative possess cultures that support value creation through their employees, who are more creative, empowered and engaged.

Innovative organizations are constantly thinking about new and better ways to approach current opportunities and challenges. First and foremost, they continue to break through to the next level because they are constantly defining it. Second, they understand that it is not the organization itself that is innovative; rather it is the sum of the people who, through the way they think and act, allow the organization to be innovative. Third, innovative organizations possess a culture that is proactive and market-driven. The culture is palpable and employees all know why they are at the top of their game. In fact, innovation *is* a culture, which can be described as the collective thoughts and actions of the employees, including their creative capacity and their ability to implement new ideas.

There are a number of drivers of innovation depending on which model one subscribes to. Most models support four key dimensions. These are:

- Innovation Leadership (Context and structure created by management)
- Innovation Resources (Resources provided by the organization for innovation)
- Knowledge Management and Market Orientation (Data and analytics, creativity)
- Innovation Implementation (Execution, implementation, intra-preneurial orientation, alignment, and governance).

It is the role of leaders to create an environment for innovation and ensure that employees are properly trained and resourced in efforts to reinforce necessary innovative behaviors. Thus, leaders need to be as, or more, creative than their employees.

The extent to which these are in place will determine the level of success organizations will have with innovation agendas.

Individual Creativity in an Innovative Organizational Culture

The context created by an organization will determine an employee's ability to innovate. As indicated, innovation is a culture, and culture is best described as how individuals (employees) think and act in relation to supporting the organization's strategy.

Innovation in organizations resides in the ability to define, instill and reinforce an innovation orientation (or culture) amongst employees. Innovation will only flourish under the right circumstances, and often management has to markedly change the context and send the necessary signals to facilitate a change in the way employees think and act. In turn, employees have to respond to these changes and take up the challenges and possibilities under the new management orthodoxies. The ability to successfully do this will ultimately depend on creative leadership, creativity of employees, and the ability of employees to act on value-added ideas.

Creativity is a fundamental requirement in the pursuit of new value, that is, innovation. The types of abilities associated with creativity are foundational in supporting employee-related behaviors necessary to embed innovation in organizations. There is evidence that creative employees are a key driver of innovation in organizations. Individual creativity and entrepreneurial skills drive knowledge generation and subsequent action on that knowledge to create value. Normative data from over 2,000 organizations surveyed suggests that employees want to express creativity, and are motivated to do things differently if given the chance. However, they feel that they do not have enough time or space to develop/express their creative potential. Some of the measures of employee ability to be creative at work include:

- Self-consideration of creativity (i.e. I consider myself to be a creative/innovative person).
- Amount of time/effort by an employee's superior to take the time to get to know the creativity/creative potential of employees.
- The organization's use of an employee's creativity.
- Time/opportunity to develop an employee's creative potential.
- Performance management (monetary and non-monetary rewards) for being creative.
- A determination of whether employees are prepared to do things differently if given the chance to do so.

(Dobni, InnovationOne constructs to measure and support creativity)

The key thing to remember is that innovation is driven by the creativity of employees in an organization. Therefore, it is the primary responsibility of the organization's leadership to create an environment that allows employees to excel at innovation. For many organizations, this involves a major change in mindset and involves fundamentally different ways of doing things. Management has to markedly change the context and send the necessary signals to facilitate a change in the way employees think and act. In turn, employees have to respond to these changes and take up the challenges. The ability to successfully do this (achieve an innovation state) will ultimately depend on the propensity of management, the strategic architecture in place to support innovation, and the constituency of employees on whom these efforts are focused.

The Importance of Developing Creativity

Creative individuals generate ideas, stimulate curiosity, concentrate, make connections, think divergently, problem-solve, deal with ambiguity and complexity, integrate multiple skill sets, and collaborate with others. They possess self-confidence, persistence, focused attention, and the ability to be intellectual risk takers. These align with the outcomes of contemporary, inquiry-based arts education programs.

A study of Michigan State University Honors College science and technology graduates yielded four striking results: (a) graduates majoring in science, technology, engineering, and mathematics (STEM) subjects are far more likely to have extensive arts and crafts skills than the average American; (b) arts and crafts experiences are significantly correlated with producing patentable inventions and founding new companies; (c) the majority believe that their innovative ability is stimulated by their arts and crafts knowledge; and (d) lifelong participation and exposure in the arts and crafts yields the most significant impacts for innovators and entrepreneurs. (LaMore et. al. 2013)

Creative problem-solving and critical-thinking skills are essential to success in an information and innovation-based economy. For example, in 2010 students with 4 years of arts or music classes in high school and AP/Honors courses scored higher on the Standardized Aptitude Test (SAT). These students scored an average of about 68 additional points on reading and 57 points on math. Not only do SAT scores improve, but all academic outcomes improve as a result of engagement in arts programs, especially in at-risk students.

Arts avocations and related skills also correlate with high degrees of scientific innovation, whether measured by paper citations or by awards such as the Nobel Prize. Scientific success (as measured by various forms of impact, Nobel Prizes, or election to the U.S. National Academy of Science or the British Royal Society) is correlated with the practice of fine arts and crafts into adulthood. In one large study comparing 510 Nobel Prize winners with 4,406 members of the Sigma Xi Scientific Research Society, Nobel laureates were at least 15 (and as much as 35) times more likely to have arts or crafts avocation as an adult (LaMore et. al. 2013).

According to Lamore et. al., a very strong case can be made that arts and crafts education correlates significantly with future success as a scientist or an engineer and that this success can be measured in economically valuable products such as patentable inventions and the founding of new companies.

In the study entitled “The identification and measurement of innovative characteristics of young people,” authors Elizabeth Chell and Rosemary Athayde identify five generic skills that underpin innovative behavior and form a set of attributes clearly linked to the innovation process in youth. These attributes include:

- Creativity (imagination, connecting ideas, tackling and solving problems, curiosity);
- Self-efficacy (self-belief, self-assurance, self-awareness, feelings of empowerment, social confidence);
- Energy (drive, enthusiasm, motivation, hard work, persistence and commitment);
- Risk-propensity (a combination of risk tolerance and the ability to take calculated risks);
- and

- Leadership (vision and the ability to mobilize commitment).

The skills were identified through a literature review and through testing the concepts with separate focus groups of young people and teachers from different disciplines in schools and colleges in Greater London and Hampshire. The skills assessed were deemed important for young people's employability and ability to make a wider social contribution.

The five skills tested – including those associated with creativity – match closely those which employers say they most need in their new recruits, but which they too often find missing. Our current economic climate, where enterprises have to adapt to survive, further emphasizes the value of these skills in responding to the major social and economic challenges of today. The development of these skills start with the schools and colleges who are in the best position to develop young people's ability to innovate, and we must consider comprehensive, inquiry-based arts education as fundamental to learning to think creatively (Chell and Athayde, 2009).

The Next Steps

A recent study of innovation in Saskatchewan (*Innovation Saskatchewan*, 2013) identified a number of barriers to innovation, including:

- Lack of an Innovation Strategy in Organizations: The survey illustrated that leaders of Saskatchewan organizations are only beginning to discuss innovation as a key strategy. Leaders are even less successful at entrenching innovation into their strategic plans and developing innovation goals and objectives that can be used to communicate to their employees in a meaningful way.
- Misaligned Performance Management Systems: Organizations also struggle with creating a performance management system that rewards employee innovation. This barrier is even more pronounced because of the lack of innovation strategy, goals and objectives within the organization. The end result is that performance management systems end up rewarding the status quo instead of innovation.

In respect to the education system in Saskatchewan, we need to ask two fundamental questions: i.) how do we support innovation in the education system so that it has long term sustainable benefits for the Province, so that we can contribute to a much larger imperative? and ii.) how can arts education in particular help our schools and society achieve broader education, economic and social goals?

Consideration should be given to a Minister's Advisory Committee – or a government cross-sector committee – on innovation. Such a committee could bring together knowledgeable people from all relevant Ministries to create an integrated and systemic "agenda" for innovation in Saskatchewan in general, and within the education system specifically. As highlighted, the impact of system-wide arts education as a foundation to developing creativity and an innovation orientation is well defined.

It is important that this committee be at a level to affect change through its ability to further the discussion in 2 primary areas of focus, i.) innovation promotion, awareness, and training in the education sector, and ii.) knowledge and advancement of innovation. The objectives of this approach include:

- To enhance the innovation orientation within the educational system in Saskatchewan. This will increase the overall innovation orientation of the Province over time.
- To work directly with organizations and the Province in the areas that will have maximal impact in respect to developing and advancing innovation agendas.
- To further examine and consider the evidence that arts education is an essential means of developing creativity in young people.
- To make sure that all Saskatchewan schools or educational organization that are interested in advancing their own innovation culture are supported.
- To advance innovation knowledge, and continually integrate that knowledge into the Saskatchewan perspective with the goal for our Province to assume an innovation leadership position in Canada.
- Provide counsel to assist in the development and promotion of a provincial innovation strategy that focuses on innovation and value creation Province-wide.

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ⁱ Qtd. in Dobni, Brooke, "Why Innovation."