Creativity and the Environment:
Looking at differences between Canadian, Norwegian and Finnish Students on the TTCT

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Project Overview

- Background
- Purpose
- Theoretical Orientation
- Results
- Discussion
Background

- Creativity is an essential component of innovation.

- Previous research has shown that specific environments contribute to the development of creative tendencies, and adults consistently reflect on the role of the environment in supporting or constricting the development of creativity (Hansen, 2008; Runco 2010).

- Drawing on earlier retrospective research, this study was designed to provide a more detailed picture of the development of creativity in children, using a wider cultural lens.
The purpose of this research study was to develop a stronger understanding of the manner in which culture, which encompasses the home, one’s nationality, and the structure of a community, influences creativity.

This investigation allows us to better understand the ways in which cultural environments influence the development of creativity.
Theoretical Orientation

- Human Capital Theory

- Human capital refers to the specific skills and knowledge which enter into the productive process, including all of the competencies and commitment of individuals within an organization (Schultz, 1961)

- Creativity includes the skills and knowledge an individual needs to find and solve problems, think critically, and develop novel and useful ideas
Rationale

- Creativity and innovation are often cited as two of the most important “21st Century Skills” individuals need to thrive in modern society.

- Due to rapid changes in technology, global communications, and the changing nature of social networks, we need to be prepared for change and continue to understand individual behavioural differences.
Cross-Cultural Research

- Cross-cultural research studies are important in adding to our understanding of differences and similarities in different cultures, and especially different sub-cultures.

- Within every country exists sub-cultures and communities influencing the behaviour and cognition of members.
- 1,343,303 students
- Provincially-run
- 194 school days/year
- 4000 schools (Ontario)
- Classes must have fewer than 23 students per teacher

- 423,374 students
- Federally-run
- 190 school days/year
- 3000 schools
- No class size limits

- 600,000 students
- Federally-run
- 190 school days/year
- 3500 schools
- Under 20
Project Overview

- Investigation of creativity/ divergent thinking in 8-year old children
  - Torrance Test of Creative Thinking
  - Interviews with parents of those children

- Stage 2: Interviews with parents were conducted to better understand the nature of the child’s home and school environment
Instrument

The Torrance Test of Creative Thinking (TTCT)

- Widely-used instrument used for the assessment of divergent thinking skills
- Culture-fair
- Can be given in verbal and figural modalities
- 3 sub-tests, takes 30 minutes to administer
- For use between Kindergarten-adult
- Scales: fluency, elaboration, abstractness of titles, and resistance to closure
Method

- In the spring of 2011, 256 eight-year old children (167 Canadian, 89 Norwegian) were given the TTCT by the research team.

- In the fall of 2013 108 Finnish children were tested.

- Schools were located in three communities representative of small, medium and large population sizes (Urban, Town, Rural).
## Demographic Breakdown
Participants were 8 years old

<table>
<thead>
<tr>
<th>Country</th>
<th>Urban (M/F) Pop: &gt;90,000</th>
<th>Town (M/F) Pop: 12-40,000</th>
<th>Rural (M/F) Pop: &lt;3000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Norway</td>
<td>30 (12/18)</td>
<td>29 (15/14)</td>
<td>30 (15/15)</td>
</tr>
<tr>
<td>Canada</td>
<td>68 (30/38)</td>
<td>40 (26/14)</td>
<td>59 (25/34)</td>
</tr>
<tr>
<td>Finland</td>
<td>35 (6/29)</td>
<td>31 (14/17)</td>
<td>42 (14/28)</td>
</tr>
</tbody>
</table>
Results
Average Standard Score

Canada
Norway
Finland

Rural
Town
Urban
Results

- Between countries, significant differences were found on the **Fluency, Originality** and **Elaboration** subscales ($p=.000$).

- Overall average standard score was significantly different $F(5, 250) = 5.93$, $p= .000$.

- Significant differences were also found between urban and rural community size groups.
The results show that community size is related to scores obtained by our sample of the TTCT.

Without further study it will be difficult to say for certain why this pattern has occurred.
Discussion

- Creative actions and ideas are generated reciprocally through the needs and press of the environment
- Childhood is when tolerance or support for creativity is born
- It is important to better understand the complex ways key aspects of the environment influence the development of creativity
Future Directions

- Conduct further qualitative work on this topic to better understand the environments inhabited by these children.
- Complete additional TTCT work with a broader sample of participants.
Additional Investigations

Canada

- Teacher’s perceptions, strategies and experiences related to children’s creativity (Completed spring 2013)

- Reflections on the development of innovative tendencies in inventors (Completed 2010)


