Pedagogical Innovation in the Discovery-Enriched Curriculum: Gains in University Students’ Objective Creativity, Creative Self-Efficacy, & Deep Learning Strategies

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Acknowledgements

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• Thanks also go to Dr. Elaine Au for sharing the findings of H.O.P.E.
Discovery-Enriched Curriculum (DEC) and Discovery Learning

Discovery-Enriched Curriculum (DEC)
- A new pedagogical paradigm of City U; providing students with a variety of local (e.g., hands-on learning, student projects) or overseas learning experiences (e.g. internship, academic exchange, summer immersion programs) for discovery both within the curriculum and in the extra-curriculum

Discovery Learning
- Students’ learning potentials and learning motivation could be enhanced through developing approaches to deep learning (Biggs, 2003; Laird, Shoup, & Kuh, 2005)

- 5 basic pedagogical features (Bicknell-Holmes, & Hoffman, 2000):
  - Case-based learning
  - Incidental learning
  - Learning by exploring
  - Learning by reflection
  - Simulation-based learning
The Learning Pyramid
National Training Laboratories, Bethel, Maine

Average Retention Rates

- Lecture: 5%
- Reading: 10%
- Audio-Visual: 20%
- Demonstration: 30%
- Discussion Group: 50%
- Practice By Doing: 75%
- Teach Others or Immediate Use of Learning: 90%
**Discovery-enriched Curriculum**
Giving all students the chance to make an original discovery

**BLACKBOARD: ENGAGING STUDENT MEMBERS AT THE CITYU APPS LAB**

<table>
<thead>
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<th>My Courses</th>
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<tr>
<td><strong>Semester B 2013/14 Courses</strong></td>
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</tr>
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<td>EE2311 (B) Object-Oriented Prog &amp; Design</td>
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<td>GE1314 Ironman: ASR in our Society</td>
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<th>Other Courses</th>
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<table>
<thead>
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<th>My Organizations</th>
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<td><strong>My 'Learning' Organizations</strong></td>
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<tr>
<td>CityU Apps Lab Activity</td>
</tr>
<tr>
<td>EEProg-wiki</td>
</tr>
<tr>
<td>Reflective Essay on Major Selection – Dr. CHEUNG Chak Chung Ray</td>
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</table>

**Credits:**
CIO Office,
CSC,
e-learning at CityU
Community-based learning

Learn from Peers
Broadcast Innovation
Entrepreneurial spirit
TEACHING & LEARNING OUTCOMES

- Community-based learning paradigm
- To cultivate our students
  - Creative
  - Logical thinking
  - Communication skills
  - Self-learning
- To connect the local industry
  - provide a strong base for well-trained up programmers.
CityU Faculty Members won UGC TA for 3 consecutive years from 2012-2014

Innovate CityU Educators Honoured with UGC Teaching Award
City-Youth Empowerment Project

Established in 2005, a non-credit bearing service-learning project open to all students at the City University of Hong Kong

- Average annual enrollment of 1,600
- To mobilize students to serve the underprivileged
- Each service is embedded with specific learning goals
- To learn civic and global social commitment
- To integrate community practice-oriented knowledge to the academic field

With over 30 community organization partnerships

- New arrivals, children, and youth
- Children and youth from low-income households
- Children and youth from single-parent families
- New arrivals, single mothers
- Children and youth with disabilities
- Children and youth from ethnic-minority background
- Women in emotional crises
- Men with family problems
- Adults with mental illness
- Hidden elderly
- Community engagement with the homeless
- Disability rights advocacy
- Annual international service to Cambodia to work with orphans, with disabilities, and HIV/AIDS

-
Homeless Outreach Population Estimation

Homelessness in Hong Kong

- A recent report from the Social Welfare Department indicates that the most recent number of registered street sleepers is 745, compared to the report in 2007, the number has increased by over 50%.
- However, community organizations serving the homeless are estimating up to 1,200 people who are homeless.
- No real way to know as the highly-nomadic and difficult-to-engage nature of the homeless population perpetuates the inaccuracy of homeless statistics.
- SWD has stopped conducting city-wide street count since 1999.
Borrowing the idea from the New York City Homeless Street Count (HOPE New York), City-Youth Empowerment Project, together with community partners Society for Community Organization (SoCO), Salvation Army, and St. James’ Settlement – conducted an overnight city-wide homeless street count – the Homeless Outreach Population Estimation (HOPE Hong Kong 2013) on August 21, 2013.

It was the first time in Hong Kong for community organizations that serve the homeless join forces with a university service-learning platform to conduct a city-wide homeless street count.
Structural and Long-term Impact

- Outreach visits, donating meals or other everyday living items can help on an individual and temporary level, although these actions show the concerns we have for the homeless - it does not amass any collective, systemic, structural and long-term impact.
- So what can we do to bring out such impacts?
On 8.21.2013....

- Months of preparation allowed more than 300 volunteers (divided into 50 teams) to participate in the street count.
- Our partner-organizations to identify all locations (including night heat shelters and temporary/emergency shelters) where they regularly engage and serve the homeless with a city-wide coverage (HK Island, Kowloon, and New Territories).
- Close to 180 locations were covered on the night of the street count, with close supervision by organization and project staff.
The Preparation Process

• Trainings and Meetings
Outreach and Site Visits with Partner Organizations
Team Building Workshops & Movie Night
Engaging through Soccer with SoCO Dawn Homeless Soccer Team
Creativity

- a generic skill or cognitive ability to be developed in the curriculum across all levels and all countries (Craft, 2005), in particular Asian Chinese societies (Hui & Lau, 2010)

- Four C Model of Creativity (Kaufman & Beghetto, 2009):
  1. Little-c creativity
     - creative activities in which layperson participate each day (Richards, 2007)
  2. Mini-c creativity
     - “the dynamic, interpretive process of constructing personal knowledge and understanding within a particular sociocultural context” (p. 3)
  3. Pro-c creativity
     - the developmental and effortful progression to attain professional-level expertise in any creative area (Kaufman, & Kaufman, 2007)
  4. Big-C creativity
     - eminent creative productivity (Simonton, 1991)
Creativity (Cont’d)

Creative Self-efficacy

• The belief in one’s ability to creative productivity
  – Predisposing creative performance (Choi, 2004; Redmond, Mumford & Teach, 1993; Tierney & Farmer, 2002)
  – Plays a pivotal role in predicting Pro-c creativity of individuals in different professions (Beeftink, Van Eerde, Rutte, & Bertrand, 2012; Chong, & Ma, 2010; Tierney, & Farmer, 2002; Hung, Huang, & Lin, 2008)

Creative Axiom

• Positive attitude / Expectancy towards creativity as a socially rewarding characteristic
  – Adapted from the concept of “social axiom” (Leung & Bond, 2008)
    • useful in understanding normative beliefs in cultures, including organizational culture or school ethos
About the Study

Objectives

– examining how DEC can help undergraduate students develop and enhance
  • Creativity
  • Creative self-efficacy
  • Creative axioms
  • Students’ learning strategies

Longitudinal research design

– Duration of study: 2 years

– Pre- and post-test questionnaires (35-40 minutes)
  • Academic experience with DEC
  • Deep learning approaches
  • Creative dispositions and verbal and figural creativity
Procedure

All questionnaires

- Administered by research and student assistants and were completed in classrooms at the university
  - **Pre-test:** at the first month of each regular semester/school term
  - **Post-test:** at the first or second week after the semester/school term

- Small incentive (cash voucher of $100) has been used for participant recruitment
  - Was given upon completion of both pre- and post-test questionnaire
## Participants

**Table 1**

**Demographic Details of Participants**

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<tr>
<th></th>
<th>Frequency</th>
<th>Percent</th>
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<td>Female</td>
<td>453</td>
<td>71.3</td>
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<td>20 years old or below</td>
<td>447</td>
<td>70.8</td>
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<td>21 years old or above</td>
<td>184</td>
<td>29.2</td>
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<td>295</td>
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<td>Year 2</td>
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<td>Year 3</td>
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<td>12.2</td>
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<td>College of Liberal Arts and Social Science</td>
<td>206</td>
<td>32.6</td>
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<tr>
<td>College of Science and Engineering</td>
<td>190</td>
<td>30</td>
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<td>School of Creative Media</td>
<td>18</td>
<td>2.8</td>
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<tr>
<td>School of Energy and Environment</td>
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<td>0.9</td>
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<td>School of Law</td>
<td>1</td>
<td>0.2</td>
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*N = 635*
Instruments

- **Test for Creative Thinking - Drawing Production (TCT-DP)** (Urban & Jellen, 1996)
- **Abbreviated Torrance Test for Adults (ATTA)** (Goff & Torrance, 2002)
- **Creative Axiom** (Leung & Bond, 2009)
- **Creative Self-Efficacy** (Yang & Cheng, 2009)
- **Approaches to Deep Learning Scale (ADLS)** (Laird, Shoup, & Kuh, 2005)
- **Learning Experience in DEC** (Bicknell-Holmes & Hoffman, 2000)
Methods (Cont’d)

• TCT-DP
  – Designed to mirror a more holistic concept of creativity
  – Aimed at assessing participants’ creativity in terms of

**Quantity**
  Fluency of Ideas

**Quality**
  Content, Gestalt, Composition, & Elaboration

**Other components**
  Risk Taking, Breaking of Boundaries,
  Unconventionality,
  Affection, Humour
Methods (Cont’d)

- TCT-DP (Cont’d)
- 13 assessing criteria

<table>
<thead>
<tr>
<th>Continuation (Cn)</th>
<th>Completion (Cm)</th>
<th>New Elements (Ne)</th>
<th>Connections made with a line (Cl)</th>
<th>Connections made to produce a theme (Cth)</th>
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<tbody>
<tr>
<td>Boundary breaking that is fragment dependent (Bfd)</td>
<td>Boundary breaking that is fragment independent (Bfi)</td>
<td>Perspective (Pe)</td>
<td>Humour and affectivity (Hu)</td>
<td>Unconventionality A, B, C, and D (Uca/b/c/d)</td>
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</tbody>
</table>

![Diagram 1](image1)

![Diagram 2](image2)

![Diagram 3](image3)
Results

Significant time differences ($F(9, 550) = 8.88, p = .000, \eta_p^2 = 0.13$) were observed in

- Creative Axiom ($M_{pre} = 3.65, SD_{pre} = 0.49; M_{post} = 3.71, SD_{pre} = 0.49$)
- Creative Self-efficacy ($M_{pre} = 3.48, SD_{pre} = 0.53; M_{post} = 3.56, SD_{pre} = 0.57$)
- Creativity Index ($M_{pre} = 65.73, SD_{pre} = 5.80; M_{post} = 67.04, SD_{pre} = 5.73$)
- Deep Learning Approaches ($M_{pre} = 2.52, SD_{pre} = 0.49; M_{post} = 2.59, SD_{pre} = 0.48$)
  - Higher-Order Learning ($M_{pre} = 2.59, SD_{pre} = 0.61; M_{post} = 2.75, SD_{pre} = 0.57$)
  - Integrative Learning ($M_{pre} = 2.40, SD_{pre} = 0.59; M_{post} = 2.46, SD_{pre} = 0.59$)
- Learning Experience in DEC ($M_{pre} = 2.89, SD_{pre} = 0.58; M_{post} = 2.95, SD_{pre} = 0.61$)
## Creative Axiom (By College and Year Comparison)

Table 2
*One-way repeated measures statistics on creative axiom by college and year*

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
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<th>Post-test</th>
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<th></th>
<th></th>
<th></th>
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<tr>
<td></td>
<td></td>
<td><em>M</em></td>
<td><em>SD</em></td>
<td><em>M</em></td>
<td><em>SD</em></td>
<td><em>F</em></td>
<td><em>Sig</em></td>
<td><em>ηp²</em></td>
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<td>3.76</td>
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<td>College of Liberal Arts and Social Sciences (CLASS)</td>
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<td>0.52</td>
<td>3.74</td>
<td>0.49</td>
<td>3.48</td>
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<td>3.58</td>
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<td>3.63</td>
<td>0.48</td>
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*Note.* CB (*N* = 185); CLASS (*N* = 188); CSE (*N* = 165); Year 1 (*N* = 240), Year 2 (*N* = 242), Year 3 (*N* = 73).
### Creative Self-efficacy (By College and Year Comparison)

**Table 3**
One-way repeated measures statistics on creative self-efficacy by college and year

<table>
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<tr>
<th></th>
<th>Pre-test</th>
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<th>Sig</th>
<th>( \eta_p^2 )</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td>M</td>
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# Approaches to Deep Learning  
(By College and Year Comparison)

Table 4  
One-way repeated measures statistics on approaches to deep learning by college and year

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Higher Order Learning (By College and Year Comparison)

Table 5
One-way repeated measures statistics on higher order learning by college and year

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<tbody>
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<td>SD</td>
<td>M</td>
<td>SD</td>
<td>F</td>
</tr>
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# Creativity Index  (By College and Year Comparison)

Table 6

One-way repeated measures statistics on creativity index (ATTA) by college and year

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<th>F</th>
<th>Sig</th>
<th>( \eta_p^2 )</th>
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</thead>
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<tr>
<td></td>
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<td>( SD )</td>
<td>( M )</td>
<td>( SD )</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Year 1</td>
<td>65.86</td>
<td>6.03</td>
<td>67.20</td>
<td>6.02</td>
<td>14.72</td>
<td>.000</td>
<td>0.06</td>
</tr>
<tr>
<td>Year 2</td>
<td>65.70</td>
<td>5.58</td>
<td>67.14</td>
<td>5.35</td>
<td>17.20</td>
<td>.000</td>
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</tr>
<tr>
<td>Year 3</td>
<td>65.38</td>
<td>5.78</td>
<td>66.27</td>
<td>5.98</td>
<td>0.15</td>
<td>.145</td>
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</tbody>
</table>
## Results (Comparison by Sex Groups)

Table 7  
*One-way repeated measures statistics on variables by sex*

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
<th>Male (N = 151)</th>
<th>F</th>
<th>Sig</th>
<th>( \eta_p^2 )</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>F</th>
<th>Sig</th>
<th>( \eta_p^2 )</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Creative Axiom</strong></td>
<td>3.65</td>
<td>3.76</td>
<td>10.75</td>
<td>.001</td>
<td>0.07</td>
<td></td>
<td>3.65</td>
<td>3.69</td>
<td>4.74</td>
<td>.030</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>(0.48)</td>
<td>(0.47)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.49)</td>
<td>(0.49)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Creative Self-Efficacy</strong></td>
<td>3.76</td>
<td>3.66</td>
<td>2.86</td>
<td>.093</td>
<td>0.02</td>
<td></td>
<td>3.44</td>
<td>3.52</td>
<td>13.50</td>
<td>.000</td>
<td>0.03</td>
</tr>
<tr>
<td></td>
<td>(0.50)</td>
<td>(0.54)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.53)</td>
<td>(0.53)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Approaches to Deep Learning</strong></td>
<td>2.50</td>
<td>2.61</td>
<td>8.19</td>
<td>.005</td>
<td>0.05</td>
<td></td>
<td>2.52</td>
<td>2.59</td>
<td>8.35</td>
<td>.004</td>
<td>0.02</td>
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<td></td>
<td>(0.50)</td>
<td>(0.47)</td>
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<td></td>
<td></td>
<td></td>
<td>(0.48)</td>
<td>(0.48)</td>
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<tr>
<td><strong>Higher Order Learning</strong></td>
<td>2.62</td>
<td>2.80</td>
<td>11.86</td>
<td>.001</td>
<td>0.07</td>
<td></td>
<td>2.58</td>
<td>2.74</td>
<td>20.14</td>
<td>.000</td>
<td>0.05</td>
</tr>
<tr>
<td></td>
<td>(0.61)</td>
<td>(0.55)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.61)</td>
<td>(0.57)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Integrative Learning</strong></td>
<td>2.34</td>
<td>2.41</td>
<td>2.07</td>
<td>.152</td>
<td>0.01</td>
<td></td>
<td>2.42</td>
<td>2.48</td>
<td>3.73</td>
<td>.054</td>
<td>0.01</td>
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<tr>
<td></td>
<td>(0.62)</td>
<td>(0.59)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.57)</td>
<td>(0.58)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Reflective Learning</strong></td>
<td>2.57</td>
<td>2.65</td>
<td>2.97</td>
<td>.087</td>
<td>0.02</td>
<td></td>
<td>2.56</td>
<td>2.58</td>
<td>0.40</td>
<td>.525</td>
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<tr>
<td></td>
<td>(0.60)</td>
<td>(0.53)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.56)</td>
<td>(0.55)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Learning Experience in DEC</strong></td>
<td>2.83</td>
<td>2.89</td>
<td>1.55</td>
<td>.216</td>
<td>0.01</td>
<td></td>
<td>2.91</td>
<td>2.97</td>
<td>3.67</td>
<td>.056</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>(0.58)</td>
<td>(0.62)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(0.57)</td>
<td>(0.60)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Figural Creativity (TCT-DP)</strong></td>
<td>23.70</td>
<td>23.96</td>
<td>0.13</td>
<td>.717</td>
<td>0.00</td>
<td></td>
<td>24.74</td>
<td>24.63</td>
<td>0.07</td>
<td>.796</td>
<td>0.00</td>
</tr>
<tr>
<td></td>
<td>(9.14)</td>
<td>(8.93)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(9.14)</td>
<td>(8.42)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Creativity Index (ATTA)</strong></td>
<td>64.79</td>
<td>65.74</td>
<td>4.30</td>
<td>.040</td>
<td>0.03</td>
<td></td>
<td>66.09</td>
<td>67.52</td>
<td>29.97</td>
<td>.000</td>
<td>0.07</td>
</tr>
<tr>
<td></td>
<td>(6.20)</td>
<td>(5.87)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(5.62)</td>
<td>(5.61)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## Results (Comparison by GPA Groups)

Table 8

*One-way repeated measures statistics on variables by GPA*

<table>
<thead>
<tr>
<th></th>
<th>Pre-test</th>
<th>Post-test</th>
<th>F</th>
<th>Sig</th>
<th>$\eta_p^2$</th>
<th>Pre-test</th>
<th>Post-test</th>
<th>F</th>
<th>Sig</th>
<th>$\eta_p^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creative Axiom</td>
<td>3.64 (0.48)</td>
<td>3.72 (0.48)</td>
<td>8.84</td>
<td>.003</td>
<td>0.05</td>
<td>3.66 (0.46)</td>
<td>3.70 (0.49)</td>
<td>1.65</td>
<td>.200</td>
<td>0.01</td>
</tr>
<tr>
<td>Creative Self-Efficacy</td>
<td>3.49 (0.52)</td>
<td>3.54 (0.56)</td>
<td>1.81</td>
<td>.180</td>
<td>0.01</td>
<td>3.46 (0.55)</td>
<td>3.56 (0.59)</td>
<td>9.89</td>
<td>.002</td>
<td>0.05</td>
</tr>
<tr>
<td>Approaches to Deep Learning</td>
<td>2.45 (0.49)</td>
<td>2.54 (0.46)</td>
<td>7.62</td>
<td>.006</td>
<td>0.04</td>
<td>2.57 (0.48)</td>
<td>2.67 (0.46)</td>
<td>9.95</td>
<td>.002</td>
<td>0.05</td>
</tr>
<tr>
<td>Higher Order Learning</td>
<td>2.50 (0.63)</td>
<td>2.69 (0.56)</td>
<td>16.01</td>
<td>.000</td>
<td>0.08</td>
<td>2.66 (0.58)</td>
<td>2.85 (0.54)</td>
<td>14.06</td>
<td>.000</td>
<td>0.07</td>
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<tr>
<td>Integrative Learning</td>
<td>2.32 (0.59)</td>
<td>2.38 (0.57)</td>
<td>2.57</td>
<td>.111</td>
<td>0.01</td>
<td>2.43 (0.59)</td>
<td>2.55 (0.58)</td>
<td>6.33</td>
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<td>0.03</td>
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<td>Reflective Learning</td>
<td>2.52 (0.57)</td>
<td>2.56 (0.51)</td>
<td>1.00</td>
<td>.318</td>
<td>0.01</td>
<td>2.62 (0.57)</td>
<td>2.66 (0.55)</td>
<td>1.40</td>
<td>.238</td>
<td>0.01</td>
</tr>
<tr>
<td>Learning Experience in DEC</td>
<td>2.91 (0.60)</td>
<td>3.01 (0.61)</td>
<td>5.32</td>
<td>.022</td>
<td>0.03</td>
<td>2.89 (0.56)</td>
<td>2.94 (0.59)</td>
<td>1.33</td>
<td>.250</td>
<td>0.01</td>
</tr>
<tr>
<td>Figural Creativity (TCT-DP)</td>
<td>22.84 (8.50)</td>
<td>22.89 (8.43)</td>
<td>0.01</td>
<td>.939</td>
<td>0.00</td>
<td>25.11 (9.40)</td>
<td>25.60 (8.69)</td>
<td>0.60</td>
<td>.438</td>
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<tr>
<td>Creativity Index (ATTA)</td>
<td>65.42 (5.92)</td>
<td>66.53 (5.35)</td>
<td>7.19</td>
<td>.008</td>
<td>0.04</td>
<td>65.90 (5.82)</td>
<td>67.35 (6.04)</td>
<td>16.84</td>
<td>.000</td>
<td>0.08</td>
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</table>
## Results (Correlations)

Table 9  
*Correlation among variables in pre-test*

<table>
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<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
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</thead>
<tbody>
<tr>
<td>1. Creative Axiom</td>
<td>-</td>
<td>.32**</td>
<td>.26**</td>
<td>.05</td>
<td>.02</td>
<td>.16**</td>
</tr>
<tr>
<td>2. Creative Self-efficacy</td>
<td>.44***</td>
<td>-</td>
<td>.34**</td>
<td>.06</td>
<td>.05</td>
<td>.26**</td>
</tr>
<tr>
<td>3. NSSE-Total</td>
<td>.30***</td>
<td>.40***</td>
<td>-</td>
<td>.09*</td>
<td>.04</td>
<td>.49**</td>
</tr>
<tr>
<td>4. Figural Creativity (TCT-DP)</td>
<td>.07</td>
<td>.14***</td>
<td>.14***</td>
<td>-</td>
<td>.35***</td>
<td>.03</td>
</tr>
<tr>
<td>5. Creativity Index (ATTA)</td>
<td>.03</td>
<td>.08</td>
<td>.08</td>
<td>.30***</td>
<td>-</td>
<td>-.02</td>
</tr>
<tr>
<td>6. Learning Experience in DEC</td>
<td>.16***</td>
<td>.25***</td>
<td>.54***</td>
<td>.05</td>
<td>.02</td>
<td>-</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Pretest inter-correlation above the diagonal and post test below the diagonal.
Gains in Creativity

Pre-test                                    Post-test
Gains in Creativity

Pre-test

Post-test
Gains in Creativity

Pre-test

Post-test
Gains in Creativity

Pre-test

Post-test
Gains in Creativity

Pre-test

Post-test
Gains in Creativity

Pre-test

Post-test
Gains in Creativity

Pre-test

Post-test

Watching TV at home

Dreaming at the window

Looking at the window
Discussion

DEC allowed more creativity-stimulating opportunities with a generous provision of gateway education courses

• ↑ Little-c and mini-c creativity
  – ↑ Creative dispositions and expressions of undergraduate students
  – Facilitative relationship: DEC vs. Development of creative thinking

• ↑ Students’ creative self-efficacy and perception towards appreciating creativity via
  – Exploratory, reflective, simulation, example-oriented and interactive learning experiences
Evidence of DEC

RESEARCH ARTICLE

Self-perception of aging and acute medical events in chronically institutionalized middle-aged and older persons with schizophrenia†

Sheung-Tak Cheng¹, Leona C. Y. Yip², Olivia T. T. Jim² and Anna N. N. Hui²

¹Department of Psychological Studies, Hong Kong Institute of Education, Hong Kong
²Department of Applied Social Studies, City University of Hong Kong, Hong Kong

Correspondence to: S.-T. Cheng. E-mail: takcheng@ied.edu.hk

†The data reported herein are original and have not been published elsewhere.
Our Apps

- CampusVR - 2011
- EventBook
- Gems Crush
- CityU Mobility, CityU Walk
- CAL Messenger
- CityU Orientation App
- Rotary Organ Donation
Event book

- Both IOS & Android version
- Feature:
  - News Feed
  - Helps to collecting photo
  - QR – Attendance
  - Agenda of the Event
  - Instant Ask & Reply
CityU projects:
CityU Walk

- Working closely with CityU colleagues
- Department of information systems
- Applying mobile technologies
- Department of public policy
- University library, ...
CityU Projects: CityU mobility
Rotary Organ Donation
Mobile App
CityU O-Camp App – July 2014
Industrial advisory board

- CEO from over 10 leading mobile app companies
- cover over 90% of the apps we are using daily in HK
- provide student mentoring support, project advice
- donate up-to-date equipment & service support
New incentive – DBS x CAL Talk

- Students take to lead to share
- Topics are up-to-date, hot, attractive
- Generate – FastPrintConnect App, similar to the Apple AirPrint service
- TED talk
- Google developer group GDG talk
Special Interest Group (SiG)

Create a platform at CityU that generates innovation

Bridge our students, industry, community
Long Term Goals

- A major student hub in Hong Kong - Generate creative ideas & products
- Everyone can program
- Digital 21, HK Government – “Programming will be part of curriculum for all students”
We Can Code

H.O.P.E. Findings

- More than 300 students affiliated to CityU participated in the street count on the night of 21 August 2013, covering close to 180 locations, such as night heat shelters and temporary/emergency shelters. Questionnaires and a supplementary observational count at around 70 24-hour chain restaurants in the following week were also conducted.

<table>
<thead>
<tr>
<th>Homeless Locations</th>
<th>SWD</th>
<th>HOPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Street Locations (including 24 hour restaurants)</td>
<td>674</td>
<td>720</td>
</tr>
<tr>
<td>Shelters</td>
<td>-</td>
<td>415</td>
</tr>
<tr>
<td>Empty Bed Spaces</td>
<td>-</td>
<td>279</td>
</tr>
<tr>
<td>Total Number Documented</td>
<td>674</td>
<td>1,414</td>
</tr>
</tbody>
</table>
H.O.P.E. Findings

• The findings further revealed that, contrary to the public image of the homeless, over 40% of street sleepers are self-supporting through low-paying jobs, and almost half do not rely on social welfare.

• Unlike previous studies, the street count included the age of the respondents. About two-thirds of the homeless were 51 or older, indicating an ageing homeless population with challenging prospects for work. One-third of the respondents had serious or chronic health problems, and about one-third were suspected of having substance or alcohol abuse problems.
Discussion (Cont’d)

• **More frequent** application of **deep learning strategies** across the semester
  – Moderately strong correlation (DEC vs. approaches to deep learning)
  – When more opportunities of different DEC learning experiences have been offered
  – DEC – a stimulating role in facilitating spontaneous and quality learning in undergraduate students
Limitations

• Uneven demographic distribution
  – 3 of 6 different colleges / schools
  – Females > Males

• Lack of control group comparison
  – DEC as university-wide practice, have to control for academic performances in further studies

• Only within-semester changes were considered
  – Relatively short for observing more profound improvements in students’ creative expression and learning → a longitudinal study
For further contact:
annahui@cityu.edu.hk
References


