The impact of labour market and policy changes on university transfer: the case study of Early Childhood Education.

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April 20-21, 2015
About Early Childhood Education

• Early Childhood Education is the largest college program in Ontario, with almost 4000 graduates in 2013, and it continues to grow.

“Early childhood educators plan, organize and implement programs for children between the ages of infancy and 12 years”. They “are employed in child-care centres, daycare centres, kindergartens, agencies for exceptional children and other settings ....” (Statistics Canada occupation description)

• Traditionally ECE graduates experience strong employment rates, but comparatively low wages.

• It has the highest numbers of graduates continuing on to university, but this has dropped sharply in recent years.
Research Questions

Why has transfer to university decreased so sharply for ECE?

1. Provincial analysis
   • What are significant changes in the profession and programs?
   • How has the labour market responded?

2. Institutional level (Seneca case study)
   • What are the academic and socio-demographic backgrounds of ECE graduates who transfer to university?
   • What is the role of aspirations for university?
   • Is the decrease in transfer to university a result of a changing student profile, or are there other external factors?

Project funded by ONCAT
Labour market and policy changes may have resulted in a reduction in transfer to university

• In **2007**, the Ontario government passed the *Early Childhood Educators Act, 2007*, establishing the College of Early Childhood Educators (the College) in 2008.

• **2010-2011**, Ontario introduced full-day kindergarten, increasing the demand the registered Early Childhood Educators (*The Full-Day Early Learning – Kindergarten Program*).

• Reduced demand for certified teachers in K-12. In 2001, 70% of Ontario’s teaching graduates obtained a regular teaching jobs, dropping to 19% by 2014 (OCT, 2015). This likely reduces the demand for ECE graduates to use the university transfer pathway to ultimately attend Teacher’s College.

• **2008 to present**: The introduction of related college degrees in Child Development, Early Childhood Leadership, and Early Learning Program Development across several Ontario colleges.
Provincial Analysis

Labour market and transfer trends based on the MTCU KPI Graduate Satisfaction Survey
Provincial analysis: KPI Graduate Satisfaction Survey

• Telephone survey administered to all Ontario college graduates six months after graduation since 1999.
• Response rates are high, typically 70%
• Consists of detailed labour market, satisfaction, and further education questions.
• Contains a case number that can be linked back to a Seneca student ID so that the survey can be attached to Seneca records within the college (following ethical and privacy guidelines) (cannot be done provincially).
University transfer rate for Ontario’s ECE graduates is decreasing

Percentage of ECE graduates who attend university, 6 months after graduation

Source: MTCU KPI Graduate Satisfaction Survey
Employment strong for Ontario Early Childhood Graduates

Unemployment Rate for Ontario Graduates, %

Year | ECE | non ECE
--- | --- | ---
2007 | 5.8 | 9.9
2008 | 5.5 | 11.2
2009 | 7.5 | 15.9
2010 | 10.0 | 17.8
2011 | 9.8 | 17.8
2012 | 9.4 | 17.4
2013 | 8.0 | 17.5

Source: MTCU KPI Graduate Satisfaction Survey
Salary Gap Is Narrowing For Ontario Early Childhood Graduates

Hourly Salary for Ontario Graduates, $

Source: MTCU KPI Graduate Satisfaction Survey
ECE Graduates are getting older

Age distribution of Ontario ECE graduates, %

Source: MTCU KPI Graduate Satisfaction Survey
Ontario Colleges have introduced ECE related degree programs

<table>
<thead>
<tr>
<th>MTCU Title</th>
<th>Colleges offering it</th>
<th>College Title</th>
<th>Initiation date</th>
<th>Total # graduates by 2013-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor of Applied Arts (Child Development)</td>
<td>SENE</td>
<td>Bachelor of Child Development</td>
<td>2008</td>
<td>126</td>
</tr>
<tr>
<td></td>
<td>HUMB</td>
<td>Bachelor of Child and Youth Care</td>
<td>2011</td>
<td></td>
</tr>
<tr>
<td>Bachelor of Early Childhood Leadership</td>
<td>FANS</td>
<td>Bachelor of Early Childhood Leadership</td>
<td>2010</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>GRBR</td>
<td>Bachelor of Early Childhood Leadership</td>
<td>2010</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>SHER</td>
<td>Bachelor of Early Childhood Leadership</td>
<td>2010</td>
<td>35</td>
</tr>
<tr>
<td>Bachelor of Early Learning Program Development</td>
<td>CONS</td>
<td>Bachelor of Early Learning Program Development</td>
<td>2014</td>
<td></td>
</tr>
<tr>
<td><strong>Total # graduates</strong></td>
<td></td>
<td><strong>Total # graduates</strong></td>
<td></td>
<td><strong>184</strong></td>
</tr>
</tbody>
</table>
Entering ECE Students at Seneca

A detailed analysis of ECE students and graduates using Seneca as a case study
Seneca’s ECE students increasingly have previous university experience

% of Seneca entering students who previously attended university

Source: Seneca College Entering Student Survey (BDAT)
Plans for attending university after graduation declining

Post-graduate plans for entering ECE students at Seneca, %

Source: Seneca College Entering Student Survey (BDAT)
From aspirations for university to reality: following Seneca’s ECE students

Linking survey and administrative data for 2007-2013 ECE graduates
Ethics and privacy

• Ethics approval from Seneca was granted in January, 2015, for the purpose of creating a multi-year, panel dataset, from five separate data sources. Seneca’s privacy office also was notified.

• Three types of safeguards to prevent unauthorized access:
  • Technical
  • Administrative
  • Physical

• Once data linking has been completed, the personal identifiers will be removed, and a “working” dataset will be created.

• The personal identifiers will be kept in a secure location, and encrypted. If new or updated data is required, the identifiers will be de-encrypted and used for additional linking.
Creation of the linked dataset

**LINKED STUDENT LEVEL SENECA DATASET**
(Student ID as unique identifier)

- **HIGH SCHOOL TRANSCRIPTS (OCAS via Seneca SIS)**
- **ENTERING STUDENT SURVEY & PLACEMENT TESTING**
  Intentions after graduation, previous education, language skill level and demographics
- **SENECA STUDENT INFORMATION SYSTEM**
  Demographics, grades, and enrollment status
- **2006 CENSUS**
  Neighbourhood characteristics such as average income and education, linked using permanent postal code
- **KPI GRADUATE SATISFACTION SURVEY**
  Administered annually to graduates 6 months after graduation. Employment and transfer status
## Sample Selection Criteria

Total number of Seneca graduates from the MTCU Early Childhood Education program, 2006-07 to 2012-13 (MTCU code 51211)  
2,883

*less:*

- **Graduate Survey non-respondents**: 474
- **Graduates of Early Childhood Education (Fast Track) (ECEE)**: 4
- **Graduates of Child Development Practitioner (ECEF) (OTAB apprenticeship)**: 632
- **Entering student survey not completed**: 463

**Sample used for Analysis**: 1,310
Who transfers to university?

The characteristics and trends of Seneca’s ECE graduates who continue to university
Transfer rate by plans for university

% Seneca ECE graduates who transfer to university

- Indicated university aspirations upon entry
- Did not indicate university aspirations upon entry
- Total

Year | Indicated | Did not indicate | Total
--- | --- | --- | ---
2007 | 42 | 8 | 50
2008 | 37 | 9 | 46
2009 | 33 | 6 | 39
2010 | 31 | 6 | 37
2011 | 25 | 4 | 29
2012 | 19 | 7 | 26
2013 | 10 | 3 | 13
### Transfer rate by socio-demographic characteristics

#### % Seneca ECE graduates who transfer to university

<table>
<thead>
<tr>
<th>Funding</th>
<th>Neighbourhood income</th>
<th>Age</th>
<th>First Language</th>
<th>Parental Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry</td>
<td></td>
<td>29%</td>
<td>21%</td>
<td>15%</td>
</tr>
<tr>
<td>International</td>
<td></td>
<td></td>
<td>17%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>16%</td>
<td>5%</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td>0%</td>
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<td></td>
</tr>
<tr>
<td>Middle</td>
<td>21%</td>
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<tr>
<td>High</td>
<td>22%</td>
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<td></td>
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<tr>
<td>&lt;22</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>22-25</td>
<td>17%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26+</td>
<td>5%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-ESL</td>
<td>21%</td>
<td></td>
<td></td>
<td>18%</td>
</tr>
<tr>
<td>ESL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Degree</td>
<td>15%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No degree</td>
<td>20%</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Ministry, International, Other, Low, Middle, High, <22, 22-25, 26+, Non-ESL, ESL, Degree, No degree.
Transfer rate by academic background

% Seneca ECE graduates who transfer to university

<table>
<thead>
<tr>
<th>Last school attended was university</th>
<th>&lt;70%</th>
<th>70% - 80%</th>
<th>&gt;80%</th>
<th>Yes</th>
<th>No</th>
<th>&lt;3.0</th>
<th>3.0 to 3.5</th>
<th>&gt;3.5</th>
<th>Yes</th>
<th>No</th>
<th>Plans for university at entry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>6%</td>
<td>21%</td>
<td>22%</td>
<td>22%</td>
<td>21%</td>
<td>22%</td>
<td>23%</td>
<td>23%</td>
<td>24%</td>
<td>28%</td>
<td>6%</td>
</tr>
<tr>
<td>No</td>
<td>5%</td>
<td>10%</td>
<td>15%</td>
<td>20%</td>
<td>25%</td>
<td>30%</td>
<td>35%</td>
<td>40%</td>
<td>45%</td>
<td>50%</td>
<td>55%</td>
</tr>
</tbody>
</table>
From aspirations to reality

Percent of students who ultimately transfer to university by initial aspirations

- **Aspired - Went**
- **Aspired - Did not go**
- **Did not aspire - Went**
- **Did not aspire - Did not go**

<table>
<thead>
<tr>
<th>Year</th>
<th>Aspired - Went</th>
<th>Aspired - Did not go</th>
<th>Did not aspire - Went</th>
<th>Did not aspire - Did not go</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>28</td>
<td>39</td>
<td>1</td>
<td>6</td>
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<tr>
<td>2008</td>
<td>25</td>
<td>42</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>2009</td>
<td>21</td>
<td>42</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>2010</td>
<td>19</td>
<td>44</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>2011</td>
<td>16</td>
<td>47</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>2012</td>
<td>11</td>
<td>45</td>
<td>11</td>
<td>0</td>
</tr>
<tr>
<td>2013</td>
<td>5</td>
<td>49</td>
<td>11</td>
<td>0</td>
</tr>
</tbody>
</table>
Seneca’s ECE graduates are increasingly continuing degree studies at Seneca

% of ECE graduates continuing on to a degree at university or college

- Other university
- Other college
- York
- Ryerson
- Seneca

2007: 30%
2008: 25%
2009: 20%
2010: 15%
2011: 10%
2012: 5%
2013: 0%
Regression Analysis

What do our results tell us?
# Regression summary: multiple models

<table>
<thead>
<tr>
<th>Reference Group</th>
<th>Variables</th>
<th>1. Full population + Seneca Grades</th>
<th>2. Domestic graduates + Census + Seneca Grades</th>
<th>3. Domestic graduates + Census + HS Grades</th>
</tr>
</thead>
<tbody>
<tr>
<td>International (y/n)</td>
<td>-5.9%</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
<tr>
<td>Age (Ref: Under 22 yrs)</td>
<td>22-25: -7.0%</td>
<td>-7.4%</td>
<td>-10.7%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>26+: -13.6%</td>
<td>-15.0%</td>
<td>-17.0%</td>
<td></td>
</tr>
<tr>
<td>English as first language (y/n)</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>Census neighbourhood income (Ref: Low income)</td>
<td>Middle: ---</td>
<td>7.0%</td>
<td>8.0%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High: ---</td>
<td>8.2%</td>
<td>8.2%</td>
<td></td>
</tr>
<tr>
<td>Census neighbourhood unemployment rate</td>
<td>---</td>
<td>ns</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>Plans for university at entry (y/n)</td>
<td>17.9%</td>
<td>17.8%</td>
<td>16.8%</td>
<td></td>
</tr>
<tr>
<td>Remedial English required (y/n)</td>
<td>ns</td>
<td>ns</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>Last school attended university (y/n)</td>
<td>-8.2%</td>
<td>-8.6%</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>Majority HS were U/M/OAC (y/n)</td>
<td>---</td>
<td>---</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>High School ave (Gr 11/12) (Ref: &lt; 70%)</td>
<td>70-80%</td>
<td>---</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td></td>
<td>&gt;80%</td>
<td>---</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>University &quot;eligible&quot;, 6 U/M/OAC &amp; &gt;70%</td>
<td>---</td>
<td>---</td>
<td>ns</td>
<td></td>
</tr>
<tr>
<td>Seneca GPA (Ref: &lt;3.0)</td>
<td>3.0 to 3.5</td>
<td>8.4%</td>
<td>8.3%</td>
<td>---</td>
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<tr>
<td></td>
<td>&gt;3.5</td>
<td>12.9%</td>
<td>13.4%</td>
<td>---</td>
</tr>
<tr>
<td>Graduated after 2009 (y/n)</td>
<td>-9.1%</td>
<td>-9.3%</td>
<td>-11.0%</td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>1,293</td>
<td>1,221</td>
<td>1,047</td>
<td></td>
</tr>
<tr>
<td>R-squared</td>
<td>0.132</td>
<td>0.131</td>
<td>0.102</td>
<td></td>
</tr>
</tbody>
</table>

*All results reported significant at p<0.05
Regression summary: Model 2, estimated differences in transfer propensity

<table>
<thead>
<tr>
<th>Age (Ref: Under 22 yrs)</th>
<th>22-25</th>
<th>26+</th>
<th>Middle Census neighbourhood income (Ref: Low income)</th>
<th>High</th>
<th>Yes Plans for university at entry (y/n)</th>
<th>Yes Last school attended university (y/n)</th>
<th>3.0 to 3.5 Seneca GPA (Ref: &lt;3.0)</th>
<th>&gt;3.5</th>
<th>Yes Graduated after 2009 (y/n)</th>
</tr>
</thead>
<tbody>
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<tr>
<td></td>
<td>-7.4%</td>
<td>-15.0%</td>
<td>7.0%</td>
<td>8.2%</td>
<td>17.8%</td>
<td>-8.6%</td>
<td>8.3%</td>
<td>13.4%</td>
<td>-9.3%</td>
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</tbody>
</table>

-20% -15% -10% -5% 0% 5% 10% 15% 20%
Regression conclusions

Factors **increasing** likelihood of transferring:
• Plans for university when they started their studies, younger age group, higher grades at college

Factors **decreasing** likelihood of transfer:
• Previous university experience, being an international student, or coming from a low income neighbourhood.
• Graduating after 2009.

Factors **not** significantly related to transferring:
• high school academic background, or placement in remedial English
Potential impact of external policy and labour market

• Even when controlling for socio-demographic and academic factors (and composition changes over time) the amount of transfer has dropped significantly for Seneca’s ECE graduates since 2009, relative to 2007-2009 graduates.
  • This remains significant when transfer to college degrees are incorporated into the transfer measure. However the introduction of colleges degrees do partially explain the decrease in transfer to university.

• The timing of decrease in transfer aligns with the changes the ECE profession has undergone in the late 2000’s.
  • Job prospects have improved, the profession has attracted older students with previous education, and interest in transfer to university has decreased.

➤ Overall, when observing student mobility trends need take into account both the labour market and surrounding policy considerations.
Next Steps

**Early Childhood Education analysis:**
- Look more closely at labour market program/ regional unemployment trends
- Add 2013-14 graduates (data available shortly)
- Obtain feedback and discuss findings with ECE professionals and education providers

**Overall:**
- Conduct a similar analysis on a non-occupation based program, Liberal Arts Transfer
- Look more closely at mature, first generation and international students in the Seneca-wide dataset
- Research province wide trends in mobility
- Potentially partner with other institutions to share data and research capacity
Thank you!

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