Quality in Quebec Child Care Centres: What Matters and How Much?

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This paper...

- Analyzes the contribution of key inputs to the production of quality in Quebec child care centres in 2003

Outline:
- Quebec ECEC reforms
- Theory of production of quality
- Literature on 4 issues
- Data
- Results and Interpretation
- Caveats
Four issues/debates…

- Whether and how much education of caregivers/teachers matters for quality (Early et al., 2007)
- Whether and how much regulatable inputs matter for quality (Blau 1997, 2000)
- Whether and how much auspice (non-profit vs. for-profit) matters for quality
- Why quality in Quebec’s ECEC system is (apparently) inadequate
Reforms in Quebec 1997–2000

- “Educational child care” for children 0–4 years
- Full-day kindergarten in schools for 5 year-olds
- Before and after school regulated child care for children in kindergarten and elementary school
- No charge for Kindergarten, all child care $5 per day (now $7)
- Centres de la Petite Enfances (CPE’s) – nonprofit, with parent board, hub of child care services
- For-profit “garderies” temporarily provided $5 per day services too
Dramatic Changes

- For 0–4: 77,000 spaces in 1997; 210,000 in 2010
- Over 75% of children 1–4 use regulated child care, 98% of 5 year-olds use full-day kindergarten, 53% use child care in schools
- Average government subsidy: $9,000 per space (0–4)
Big increases in mothers’ employment, earnings, annual hours and weeks of employment (esp. less educated mothers)

Decrease in poverty; increase in birth rate

Big increases in child care use and hours

BUT (apparently):
  - Cognitive development effects are either positive (but small) or negative
  - Behavioural/socio–emotional effects may be negative
  - Vulnerable children less likely to get good quality care
Quality

- Child care in Quebec is very popular with parents, but...

- There are widespread concerns amongst professionals that quality is inadequate

- Current government is increasing the share of for-profit care and worried about overall costs
Chart 1
Distribution of Quality Levels by Type of Child Care in Quebec, Actual Plus Predicted

Source: Authors’ calculations based on ÉLDEQ. Chart shows distribution of quality scores (1 to 7) based on actual, but also predicted, scores. Scores for non-respondents are predicted by regression of quality on family characteristics. Results available from authors.
Reforms too fast?

- Many teachers without required training were given jobs (in 2001, 40% of centres did not meet regulations; 33% in 2006)
- Family day care grew fastest:
  - now 92,000 spaces in family day care
  - 80,000 spaces in not-for-profit centres
  - 40,000 spaces in for-profit centres
- In 2001, 45% of family day care providers had high school or less, 84% had no specific training in early childhood education
Quality

- Shonkoff and Phillips, 2000: “...the positive relation between child care quality and virtually every facet of children’s development that has been studied is one of the most consistent findings in developmental science.”

- “High quality care is associated with outcomes that all parents want to see in their children, ranging from co-operation with adults to the ability to initiate and sustain positive exchanges with peers, to early competence in math and reading.”
Theory

- Two-stage process through which early childhood education and care (ECEC) services affect children
  - first, a set of structural and other inputs produce “process quality” in the child care classroom
  - second, the process quality of ECEC services, in combination with family, neighborhood, and other factors determines the child outcomes (cognitive, behavioral, emotional, etc.)
Process quality in the child care classroom can be measured by a number of different instruments.

Production function for quality is estimation of a causal relationship; the key variables in the estimation are inputs that are presumed to determine quality.
Early et al. (2007) – across 7 data sets, no consistent effect of Bachelor’s degree or ECE-specific training on quality of preschool for 4–year-olds, nor on cognitive outcomes.

Consider: Are teachers with bachelor degrees in child care or Head Start selectively recruited to and retained in these positions?

Kelley and Camilli meta-analysis finds different results.
(2) The role of regulatable inputs in quality

- National Day Care Study (Ruopp et al., 1979)
  Iron Triangle = (1) staff–child ratio
  (2) group size (3) education (ECE–specific)
- After 1990, emphasis on teacher compensation and centre income
- NICHD – child–adult ratio, group size, child–centred beliefs, general level of education, orderly caregiving/learning environment. Ratios become less important with higher child’s age and caregiver characteristics matter more.
Blau (1997, 2000) – centre and teacher unobservables may be major determinants of quality. If centre unobservables are correlated with regulatable variables, we reach wrong conclusions.

Using centre–fixed–effects models, Blau finds most regulatable variables have no effect.

What’s wrong with Blau’s approach?
(3) The role of non-profit status in quality

- Hansmann (1980), Ben-Ner (various) suggest when quality is imperfectly observable, for-profits have incentives to cheat on expensive quality, and deliver lower quality. Nonprofits are more trusted to deliver quality.
- Cleveland and Krashinsky (2009) provide evidence of greater nonprofit ability to produce quality when this specialization occurs.
- Most empirical studies of child care find a positive impact of nonprofit status on quality, but not all – e.g., Blau and Mocan (2002)
Institut de la Statistique du Québec, March–June 2003
32% of all centres in program – 705 centres (infant and preschool, CPE’s and garderies); stratified by administrative region; results weighted
Sample excludes about 11% of children (native reservations, Magdalen Islands, remote northeast, special needs centres)
On–site observations; director and teacher questionnaires; financial data
Instrument used to measure quality

Developed specifically to measure quality relative to goals of Quebec’s educational child care program; four dimensions of quality – physical structure, structuring and variety of different activities, child–teacher interaction, teacher–parent interaction

Individual items are composed of a number of statements; score on statements is summed to get item score. Each item and total on 4–point scale.

Pretest along with ECERS–R assessment with 87 groups in May 2002. Positive correlation of .36; Grandir places more emphasis on child–teacher interactions, and on choice given to children. (ECERS–R is also a mastery–based measure, which lowers scores for some rooms).
Chart 2
Distribution of Levels of Quality in for-Profit Daycares and Nonprofit Centres de la petite enfance (CPE), Quebec, 2003

Note: In this chart, less than 33.3 percent represents inadequate quality, 33.3 to 50 percent represents minimum quality, 66.6 percent represents good quality and 83.3 percent very good quality.
## Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Average Value</th>
<th>Average if CPE</th>
<th>Average if not</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality</td>
<td>2.82/4.00</td>
<td>2.94/4.00</td>
<td>2.58/4.00</td>
</tr>
<tr>
<td>Quality (percent)</td>
<td>60.8%</td>
<td>64.6%</td>
<td>52.7%</td>
</tr>
<tr>
<td>College diploma</td>
<td>.73</td>
<td>.79</td>
<td>.59</td>
</tr>
<tr>
<td>Teacher professional development</td>
<td>.75</td>
<td>.86</td>
<td>.53</td>
</tr>
<tr>
<td>Urban</td>
<td>.79</td>
<td>.71</td>
<td>.95</td>
</tr>
<tr>
<td>Child–staff ratio</td>
<td>7.0</td>
<td>7.0</td>
<td>7.1</td>
</tr>
<tr>
<td>Salaries to qualified</td>
<td>.63</td>
<td>.70</td>
<td>.47</td>
</tr>
</tbody>
</table>
Empirical Specification

- Production function for quality: classroom quality score determined by range of classroom, teacher, centre and financial variables. Separate regressions for preschool and infant rooms, CPE’s and garderies pooled.

- No possibility of centre-fixed-effects, and probability that it delivers misleading results anyway. Include many centre-specific variables

- Hourly wages/teacher satisfaction rejected as potential determinants

- Error term: unobservable and day-specific factors
Preschool Results

- All results in percentage points – statistically significant & all else equal
- Child-staff ratio – extra child reduces quality by .61
- Teacher job experience – extra year raises quality by .41, but only for “new-ish” teachers
- College or university raises quality by 2.8 – 3.2, no signif diff, but all college are ECE
- Recent professional development for teacher and director + 3–4 percentage points each
Preschool Results

- Age of youngest child in preschool classroom matters. Moving from 2 years to 3 yrs 10 mo adds 3.5 to quality
- Number of preschool spaces in centre matters. Optimum = 68 spaces. Dropping to 34 spaces reduces quality by 1.5, doubling to 136 reduces by 6.5
- Urban location boosts quality by 3.7; most of this disappears if Montreal
- Proportion of salaries paid to qualified staff; increase by 10 p.p. raises quality by .76
Non-profit status

- All else held equal (education of teacher, director, professional development, % of salaries spent on qualified, etc.), care in a non-profit centre is 8.2 percentage points higher quality.
- No doubt that CPEs receive more government money. For example, 87% of revenue of CPE is from government and 80% of for-profit centre from government.
Results for Infant Rooms

- Education level of teacher/director does not matter
- Teacher’s recent professional development very important (5.2 p.p.)
- Older children easier to care for (+5.6 p.p.)
- Non-profit status of centre increases quality score by 10.9 percentage points
Interpretation of Results

- Education matters strongly for preschool quality: teachers’ college and university, teacher and director professional development, proportion of salaries paid to qualified staff.
- Formal education matters less, but professional development even more for infants.
- Key regulatable determinants matter: child–staff ratios, education of teachers, recent professional development.
- Years of experience matters only for recent hires (for preschool).
- Director’s formal education/experience (surprisingly) does not matter.
- Even after controls for financial/resource differences between centres, nonprofit (CPE) status has very large effect on quality.
- Family day care and for-profit centre care contribute disproportionately to poor quality in Quebec ECEC.
Caveats and Causality

- Centre-based unobservables? (director’s leadership, motivation; financial and other support for centres)
- Teacher-based unobservables? (effort, enthusiasm, soft skills, variation in quality of education)
- Selection of participant teachers by education and experience
Conclusions

- Substantial quality differences exist among regulated centres
- Education matters a lot, especially professional development
- Age of child matters in several ways
- Regulatable inputs generally matter
- Need better data on director and teacher contributions
- Non-profit status matters along with financing (intention and ability)
- Key teacher and classroom inputs have important effects on quality