

# Parents: substitutes or complements to the school environment?



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## 1. Research Topic

- Few researchers have addressed how parents interact with school inputs
- This study investigates **whether parents are substitutes for or complements to the school environment**
- More specifically, **how parents respond to teacher and peer quality**
- Measures of parent participation are: **participation at the home** (private) and **at the school level** (public)
- Data: Prova São Paulo (municipal schools of São Paulo 2009 & 2010)

## 2. Literature

While much is known about the relationship between family background and student performance, surprisingly little is known about parent response to school environment. Three studies investigated parent effort and school expenditure, while three others examined parent response to variation in class size.

Paper	Variable of Interest	Substitutes or complements?
<b>Bonesronning (2004)</b>	Class Size	<b>Complements.</b> Parents tend to reduce their efforts as class size increases.
<b>Datar &amp; Mason (2007)</b>	Class Size	<b>Mixed.</b> As class size increases: 1) Decrease in parent-child interaction 2) Increase in parent-financed activities.
<b>Fredriksson (2014)</b>	Class Size	<b>Substitutes.</b> As class size increases: 1) High-income parents help their child with homework more 2) Parents are more likely to move their child to another school
<b>Das, Jishnu et al (2011)</b>	School Expenditure	<b>Substitutes.</b> 1) School grants anticipated by households: crowd-out private educational spending and have no impact on test scores 2) Unanticipated grants: no household responses and do have positive impacts on learning
<b>Houtenville &amp; Conway (2008)</b>	Per-pupil expenditures	<b>Substitutes.</b> Higher per-pupil expenditures: parents tend to reduce their efforts
<b>Kim (2001)</b>	School Expenditure	<b>Substitutes.</b> Increase in school expenditure: lower-educated mothers decrease their child care time.

## 3. Results

The table below shows whether parents act as substitutes or complements in response to each input investigated in the study. For example, parents in Cycle I act as substitutes to more educated teachers (they reduce their participation), at home and at school.

	Participation at Home	Participation at School
<b>Cycle I (1<sup>st</sup> to 4<sup>th</sup> grade)</b>		
<b>Substitutes</b>	<ul style="list-style-type: none"> <li>• More educated teachers</li> <li>• More experienced teachers</li> <li>• Higher peer achievement (Portuguese)</li> <li>• Higher standard deviation on Portuguese score</li> <li>• Peers whose parents have more education</li> <li>• Peers whose parents have more income</li> </ul>	<ul style="list-style-type: none"> <li>• More educated teachers</li> <li>• Higher peer achievement (Math)</li> <li>• Higher standard deviation on Math score</li> <li>• Peers whose parents have more income</li> </ul>
<b>Complements</b>	<ul style="list-style-type: none"> <li>• Higher peer achievement (Math)</li> </ul>	<ul style="list-style-type: none"> <li>• Higher standard deviation on Portuguese score</li> <li>• Peers whose parents have more education</li> </ul>
<b>Cycle II (5<sup>th</sup> to 8<sup>th</sup> grade)</b>		
<b>Substitutes</b>	<ul style="list-style-type: none"> <li>• More educated teachers</li> <li>• More experienced teachers</li> <li>• Higher peer achievement (Portuguese)</li> </ul>	<ul style="list-style-type: none"> <li>• Higher standard deviation on Math score</li> </ul>
<b>Complements</b>	<ul style="list-style-type: none"> <li>• Higher standard deviation on Math score</li> <li>• Peers whose parents have more education</li> </ul>	<ul style="list-style-type: none"> <li>• Peers whose parents have more education</li> </ul>

## 4. Takeaways

- 1) Parents do in fact respond to school inputs
- 2) Parent participation can either increase or decrease depending on the input being analyzed
- 3) The magnitude of the effect varies according to the input
- 4) Parent behavior may also differ according to the early (Cycle I) or later grades (Cycle II) of elementary school
- 5) Finally, parent involvement at home or at school may vary even within the same school input

## 5. Policy & Research Implications

- Important implications for policy and further research
- Studies that fail to account for parent participation as a time-variant variable in the education production function are likely to be biased
- Policy makers should account for parents' substitutability and complementarity when planning, implementing and assessing the effect of educational policies