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# Teacher effectiveness and reading comprehension at first grade

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## Objectives and purposes

This paper aims at determining teacher effects on student reading comprehension at first grade.

## Theoretical framework and background

Reading comprehension is a major skill for school achievement because many subjects require text comprehension (including math, science, etc.). However, many students are at risk because they do not understand well what they read. In France, at the end of elementary school, 15 to 20% of the students are poor readers, most of which have difficulties in reading comprehension.

Text comprehension is a high level activity that depends on both code skills (phonological awareness, knowledge of print...) and language comprehension skills (semantics, syntax, vocabulary...). Many of these skills are highly differentiated among children even before their entry to elementary school and much of these differences stem from the family background. Yet, there is also evidence that instructional practices can impact, not only code skills acquisition but also comprehension skills acquisition (Bianco et al, 2010, 2012; Connor, Morisson, & Petrella, 2004). There is evidence that explicit teaching of cognitive strategies – that help the students build the situation model – improve reading comprehension acquisition.

Besides these specific reading instructional practices, integrative models of educational effectiveness have emerged in the last decade which concur with the identification of broad dimensions of the quality of instruction predictive of greater student learning gains (e.g. Dynamic Model by Creemers and Kyriakides, 2012; CLASS by Pianta, La Paro & Hamre, 2008; Model of Instructional Quality by Klieme, Pauli & Reusser, 2009). For Pianta and Hamre (2009), it is possible to assess directly the quality of the instruction delivered to students via their CLASS observation instrument. This instrument is assumed to apply across content areas (and therefore it should apply to reading comprehension): it is made of indicators that form ten dimensions which are organized in three domains: emotional support, instructional support and classroom organization.

## Research questions and/or hypotheses

Controlling for both code skills and language comprehension skills – and even non-verbal skills – at the beginning of first grade, the first aim of the study was to estimate whether or not there are differences between classes in text comprehension acquisition at the end of first grade. The second aim was to assess whether there was evidence of differential effectiveness according to students' initial skills. The third aim was to assess whether dimensions of the instructional quality as assessed by the CLASS were related to reading comprehension acquisition.

## Data, methods, and modeling approaches

The participants are 550 students in 35 first-grade classes and their 35 respective teachers.

At the beginning of the school year, students were assessed on phonological awareness (syllabic suppression...), vocabulary (EVIP), syntactic skills (ECOSSE test), alphabetical knowledge, rapid naming (letters, numbers, pictures, colours), word and pseudo-word reading (One-Minute test)

and oral comprehension. Other control variables are non-verbal skills (WPPSI matrices) were assessed and information on parent SES were collected.

At the end of the school year, students were assessed on the same skills (except for non-verbal skills, rapid naming and alphabetical knowledge); other assessed skills are reading fluency and reading comprehension.

In each class, the quality of instruction was assessed by two trained observers using the K-3 CLASS instrument (Pianta, La Paro, & Hamre, 2008) during a reading lesson in the middle of the school year.

Since students are nested within classes, multilevel models have been utilized to explain reading comprehension at the end of first grade.

## Results and discussion

After controlling for initial skills, there remains a significant 10% between-class variance. This result is congruent with the hypothesis of a teacher effect. There was no evidence for differential teacher effectiveness. We then introduced the CLASS variables in the model, alternatively all three and one by one (emotional support, instructional support and classroom organization). In any case, emotional support is the only variable that significantly explains reading comprehension. Contrary to our expectations, the relation is negative meaning the higher the emotional support, the lower reading comprehension acquisition.

In order to try to understand this negative effect, we noticed emotional support is negatively related to class size ( $r = -.21$ ) and the effect of emotional support disappears once class size is introduced in the models. However, there is no mediating effect since class size is not related to reading comprehension.

The relatively small number of classes may however affect the result robustness and our capacity to detect significant relations at the class level.

Analyses are still in progress to understand the negative effect of emotional support. In particular, we will investigate whether the effect of emotional support on text comprehension is mediated by lower level skills acquisition such as reading fluency.

## Significance of the study

The major interest of the study is twofold: first, it addresses the question of teacher effects on a specific skill, namely reading comprehension (rather than a broad competence such as science, math or language). Second, reading comprehension is a high level skill to which several lower level skills contribute, and our study should help us better understand how broad dimensions of instructional quality come into play in a model of reading comprehension acquisition that captures its major identified predictors.

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