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# Facilitating academic text-based discussions in initial teacher education: Evaluating specialized knowledge

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## HIGHLIGHTS

- Decomposition of text-based discussion into tasks to assess specialized knowledge.
- Differences were observed in pre-service teachers within courses on decision-making.
- Performance on decision-making and noticing a discussion varied across courses.
- Curriculum design is crucial to support the learning of text-based discussions.

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## 1. Introduction

Ensuring that students comprehend complex texts that explain abstract themes with academic language is one of the goals that schools must achieve if they want their students to be able to access crucial information in today's world (Levy & Murnane, 2013). Text-based discussions have been proposed as an effective reading activity to facilitate comprehension of academic texts since productive dialogue serves as a mechanism to engage students in reasoning and encourage participation. Likewise, this activity offers students the scaffolding they need to construct coherent representations of the texts they read (Kucan & Palincsar, 2013; Kucan, Palincsar et al., 2011; McKeown, Beck, & Blake, 2009; Murphy, Wilkinson, Soter, Hennessey, & Alexander, 2009; Nystrand, Gamoran, Kachur, & Prendergast, 1997). Although research has been conducted regarding the effectiveness of interventions in school contexts, less has been done to understand the expertise that in-service teachers require in order to put this dialogue-based approach into action (Kucan, Hapgood, & Palincsar, 2011; Kucan, Palincsar et al., 2011).

Furthermore, teacher education has shifted towards practice-based teacher preparation (Ball & Forzani, 2009, 2010; Darling-Hammond & Hammerness, 2005; Grossman & McDonald, 2008; Grossman, Compton, Igra, Ronfeldt, Shahan, & Williamson, 2009; Grossman, Hammerness, & McDonald, 2009). Two principal changes are behind this pivot from theory to practice. First, a repertoire of core practices has been defined, including among others, developing explanations using models, facilitating productive discussions. These core practices are defined as activities essential to fostering ambitious teaching (Ball & Forzani, 2009, 2010; Grossman, Compton et al., 2009; Grossman, Hammerness et al., 2009). Second, core practices are learned through the pedagogies of practice. Accordingly, teachers are more likely to acquire practices relevant to their careers if they do so through modeling, rehearsing, and enacting (McDonald, Kazemi, & Kavanagh, 2013). And, although the core practices are described free of context, learning them requires making them specific to a subject matter (Ball & Forzani, 2010; Kucan, Hapgood et al., 2011).

Within subject-specific core practices, the activity of facilitating text-based discussions of academic texts has already been decomposed to determine the specialized knowledge necessary to effectively enact the practice, especially for in-service teachers (Kucan & Palincsar, 2013; Kucan, Hapgood et al., 2011; Kucan, Palincsar et al., 2011). However, the specialized knowledge needed to enact this subject-specific practice in a teacher education program has been decomposed but not evaluated, much less in the context of teacher preparation in Latin America, a region characterized by severe educational inequalities. Thus, the purposes of this study are: (1) to decompose the subject-specific practice of facilitating text-based discussions of academic texts into the key

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types of knowledge and skills needed to enact this core practice; (2) to propose four tasks to evaluate the specialized knowledge that pre-service teachers learn in teacher education; and (3) to compare the performance of pre-service teachers in courses at different levels.

## 2. Text-based discussions to comprehend academic texts

Currently a consensus exists that reading comprehension, alongside other skills such as writing, is one of the key goals for school learning. However, not all students will learn this expected skill (Biancarosa & Snow, 2006; RAND, 2002). Although more research has focused on understanding the challenges related to decoding skills across languages (Ziegler & Goswami, 2005; Ziegler et al., 2010), recent years have seen the emergence of studies exploring predictors of reading comprehension beyond decoding and vocabulary (LaRusso et al., 2016; Language and Reading Research Consortium, 2015; Meneses et al., 2017; Uccelli, Barr et al., 2015; Uccelli, Phillips Galloway, Barr, Meneses, & Dobbs, 2015). This research illuminates the point that not all texts pose the same reading comprehension challenges to students. For example, expository texts turn out to be more difficult than narrative texts (Graesser, McNamara, & Louwerse, 2003; McNamara, Ozuru, & Floyd, 2011), which are moreover, the predominant genre from which students learn across content areas.

As such, the texts and their characteristics—in particular, those that students read in various subject areas—have become a relevant focus of study in recent decades (Shanahan & Shanahan, 2008). Academic texts are very different from everyday conversations (Schleppegrell, 2001, 2004; Snow & Uccelli, 2009; Meneses et al., 2017; Uccelli, Barr et al., 2015; Uccelli, Phillips Galloway et al., 2015). They are frequently described as complex and abstract, because their language often contains a lot of conjunctions, discourse markers, extended noun groups with modifiers, nominalizations, extended and embedded clauses, high lexical density, cross-discipline, and discipline-specific vocabulary. Academic texts display complex discourse organization, as the majority use expository or argumentative structures (Schleppegrell, 2004; Snow & Uccelli, 2009) that place a higher cognitive demand on readers and require extensive background knowledge.

The complexity of academic texts is not the only reason students earn low scores. Texts used for learning at school are often poorly written, offer inadequate explanations, fail to display causal connections between different events, or are not well-structured (Beck, McKeown, Hamilton, & Kucan, 1997; Snow & Sweet, 2003).

At the same time, in many countries, text complexity is back in debate thanks to curricular reforms, as is the case in the United States. The Common Core State Standards (CCSS) note that, "all students must be able to comprehend texts of steadily increasing complexity as they progress through school" (NGA & CCSSO, 2010, p. 2). The definition of text complexity suggested in the CCSS has undergone many revisions. It has thus become clear that it is necessary to continue studying the different aspects involved in text complexity, including both qualitative and quantitative features, as well as those concerning the reader (Fang, 2016; Gamson, Lu, & Eckert, 2013; Hiebert & Mesmer, 2013; Moore, Zancanella, & Ávila, 2014; Newhouse, 2016; Pearson & Hiebert, 2014; Williamson, Fitzgerald, & Stenner, 2014). However, in Latin America, a region facing a relevant educational gap in reading comprehension, the debate about text complexity and reading comprehension performance by genre, topic, and type of lexical-grammatical resource is still emerging.

Perhaps even more nascent than the matter of text complexity is the question of how to support students comprehend complex academic texts. In the Latin American region, comprehension is frequently addressed from a standpoint emphasizing reading strategies, rather than with discussion-based instruction centered on the content itself of the texts. A study in the United States comparing these two approaches (McKeown et al., 2009) found that the discussion-based approach had a greater effect than the reading strategy-based approach. This research reveals the importance of discussions in providing the scaffolding necessary for readers to confront the surface-level challenges of the texts, internalize the information and, therefore, comprehend it.

Consequently, in recent decades, proposals centered on interaction, dialogue, and discussion for learning in these various subject-matters have proliferated (Applebee, Langer, Nystrand, & Gamoran, 2003; Beck, McKeown, Sandora, Kucan, & Worthy, 1996; Chinn & Anderson, 1998; Nystrand et al., 1997; Wilkinson, Soter, & Murphy, 2010; Wolf, Crosson, & Resnick, 2005). The meta-analyses conducted by Soter et al. (2008), and Murphy et al. (2009) delved into new proposals for small group discussions to comprehend texts and concluded that quality discussions foster authentic questions with high-level reasoning and comprehension, spur students to come up with explanations that contain a high density of words to signal reasoning, and have follow-up cycles to develop critical thinking. In these proposals, we find a sociocultural (Vygotsky, 1979; Wertsch, 1993) and dialogue-based (Alexander, 2003; Bajtin, 1982; Cazden, 2001; Mercer, 2000) vision of learning and language development relying on interaction and the joint construction of meanings among subjects.

Such discussion-based approaches have proved effective in supporting students not only in reading comprehension but also in boosting students' verbal participation and helping them formulate questions to monitor comprehension (Beck et al., 1996; McKeown et al., 2009). Indeed, text-based discussion methods to buttress reading comprehension demonstrate the relevance of using questions designed to direct students' attention towards key ideas in the text. Similarly, they indicate that it is important for teachers to use specific talk moves to extend student reasoning and redirect their attention to the central ideas in the text to engage students in building a coherent representation of what they have read (Kucan, Hapgood et al., 2011; Kucan, Palincsar et al., 2011).

Kucan and Palincsar (2013) posit that text-based discussion as an activity to promote reading comprehension is underpinned by two theoretical models of text comprehension: The Construction-Integration Model (Kintsch, 1998) and the Landscape Model of Reading (van den Broek, Young, Tzeng, & Linderhold, 1998). Kintsch (1998) explains the processes involved in reading comprehension (*construction* and *integration*), as well as the multiple levels of text representation (surface representation, text-base, and situation model) constructed during the meaning-building process. Van den Broek et al. (1998) set forth a computational model to highlight that the construction of coherent mental representations during reading involved online and offline processes in which memory is a key element of the uptake cycle. The Landscape Model of Reading (van den Broek et al., 1998), which is widely accepted, postulates that comprehension is achieved when the reader manages to construct a coherent mental representation of the text. The reader constructs this representation by drawing significant connections between different elements of the text itself, and between the text and the reader's own prior knowledge. Based on this model, not only are the readers' skills important, the text itself is fundamental to reading comprehension.

The text-based discussions structure and explicitly scaffold students in the reading process through dialogue. The active engagement of readers in constructing understanding from the text with their own background knowledge is an even more complex task for academic texts about which students possess less background knowledge and whose textual surface contains more