

Curriculum Materials for Deliberative Teaching: A Systematic Qualitative Review of Key Features of Teachers' Learning

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Abstract

Empirical evidence suggests that deliberative argumentation promotes conceptual learning, argumentation skills, and political competencies. However, it is scarcely seen in classrooms. Different scholars have argued to decide what type of curriculum materials can promote teachers' pedagogical innovations, but there is no agreement on the main educative features these materials should have. This paper aims to describe these characteristics and discuss the theoretical stance from which to understand their role in teachers' learning. A systematic qualitative review following PRISMA was conducted. The results show that most studies consider disciplinary content, implementation guides, and justification for pedagogical recommendations to be key educative features. A significant number of studies agree on suggesting explicit language moves, although some papers discuss the risk of prescription involved in this feature. Regarding theoretical assumptions about teachers' learning, most studies hold a socio-cognitive view of teachers' learning. The theoretical gaps and their practical implications for design are also discussed.

Keywords: curriculum materials, teacher learning, sociocultural theory, scaffold materials, language practices



Materiales Curriculares para una Enseñanza Deliberativa: Una revisión Cualitativa-Sistemática de las Características Clave que Fomentan el Aprendizaje de los Profesores

Resumen

La evidencia empírica sugiere que la argumentación deliberativa promueve el aprendizaje conceptual, las habilidades argumentativas y de debate. Sin embargo, rara vez se ve en las aulas. Diferentes académicos han argumentado sobre qué tipo de materiales curriculares pueden promover la creación de materiales pedagógicos innovadores, pero no se ha llegado a un acuerdo sobre las principales características educativas que estos materiales deberían tener. Este documento tiene como objetivo describir estas características y discutir la postura teórica desde la cual entender el papel que desempeñan en el aprendizaje de los profesores. Se realizó una revisión cualitativa sistemática siguiendo la metodología PRISMA. Los resultados muestran que la mayoría de los estudios consideran que el contenido disciplinario, las guías de implementación y la justificación de las recomendaciones pedagógicas son características clave. Un número significativo de estudios también promueve el uso de un lenguaje explícito, sin embargo, algunos documentos advierten sobre el riesgo de ser demasiado prescriptivos al hacer uso de esta herramienta en el aula. En cuanto a las suposiciones teóricas sobre el proceso de aprendizaje de los profesores, la mayoría de los estudios sostienen una visión sociocognitiva en torno a este tema. También se discuten las lagunas teóricas y sus implicaciones prácticas para el diseño pedagógico.

Palabras clave: materiales curriculares, aprendizaje del profesor, teoría sociocultural, materiales de andamiaje, prácticas de lenguaje.

Materiais Curriculares para Ensino Deliberativo: Uma Revisão Qualitativa e Sistemática das Principais Características que Promovem a Aprendizagem dos Professores

Resumo

Evidências empíricas indicam que a argumentação deliberativa promove a aprendizagem conceitual, bem como habilidades argumentativas e de debate. No entanto, essa prática é raramente observada nas salas de aula. Diferentes acadêmicos têm debatido sobre que tipo de materiais curriculares podem fomentar a criação de recursos pedagógicos inovadores, mas ainda não há consenso sobre as principais características educacionais que esses materiais devem possuir. Este estudo busca descrever essas características e discutir o arcabouço teórico a partir do qual se pode entender seu papel na aprendizagem dos professores. Foi conduzida uma revisão qualitativa sistemática seguindo a metodologia PRISMA. Os resultados revelam que a maioria dos estudos destaca o conteúdo disciplinar, as diretrizes de implementação e a justificativa das recomendações pedagógicas como características essenciais. Um número significativo de estudos também recomenda o uso de linguagem explícita, embora alguns alertem para o risco de ser excessivamente prescritivo ao utilizar essa ferramenta em sala de aula. Quanto aos pressupostos teóricos sobre o processo de aprendizagem dos professores, a maioria dos estudos adota uma perspectiva sociocognitiva. As lacunas teóricas e suas implicações práticas para o design pedagógico também são discutidas.

Palavras-chave: materiais curriculares, aprendizagem docente, teoria sociocultural, materiais para

andaines, prácticas lingüísticas.

Introduction

At the beginning of the last century, Dewey (1916) argued for deliberative practices as the core of democracy, attributing to education the responsibility to offer generative experiences of authentic deliberation and collaborative reasoning, to achieve common solutions and understandings. This remains an educational challenge that has been insufficiently addressed and which has become increasingly urgent. In a gradually more polarized and diverse world, deliberation and debate are fundamental tools for generating knowledge and solving complex problems. Multiculturalism, migratory crises, sexual diversity, climate challenges, economic and cultural inequality are all phenomena involving social conflict that require citizens to enact specific competencies to be able to deal with these conflicts in a peaceful way (Larrain et al., 2021).

The notion of *deliberative teaching* has recently been proposed as an educational approach that seeks to foster civic and political competencies. As proposed by Englund (2016), deliberative teaching is aimed at promoting the emergence of diverse and opposing perspectives generated by a problem or curricular dilemma organized under a deliberative objective, arguing to reach a consensus. Although much of this research comes from social studies and civic education (Hess & McAvoy, 2014), there is a whole field of empirical research that studies peers' deliberative argumentation in different disciplinary areas (Asterhan & Schwarz, 2007; Reznitskaya et al., 2009), conceiving of this practice as an educational experience that is critical to citizenship (Larrain et al., 2021).

Both lines of research converge on the idea that the practice of deliberative argumentation among peers is a fundamental articulating core of teaching. Argumentation here is understood as a type of practice in which students engage collaboratively and cooperatively, but critically, with others' ideas, with the intention of achieving an understanding around a dilemmatic issue and not just to convince or acquire a point of view (Asterhan & Schwarz, 2016). This process of reaching a consensus through discussion allows people's positions to be reformulated, deepened, and, in turn, better understood (Felton et al., 2015). Many of these studies highlight that the practice of the collaborative use of language plays a fundamental role in forming thought and understanding concepts. Empirical evidence also shows that this type of pedagogical practice, which we conceive of here – following Andersson (2015) and Larrain et al. (2021) – as deliberative teaching, promotes a better understanding of complex scientific concepts (Larrain et al., 2020) and the development of argumentative skills (Felton et al., 2015).

However, the problem is that deliberative practices are scarce in classrooms (Howe & Abedin 2013) and transforming these spaces into deliberative teaching and learning experiences remains a challenge: after decades of promoting pedagogical practices leading to thinking (Resnick, 1987), classrooms are still mostly transmissive and monological spaces (Resnick et al., 2018).

Several hypotheses have been proposed to explain the difficulty of classroom practice transformation. However, a possible hypothesis that has not been sufficiently addressed is the

theoretical role of language in teacher learning. We will first explain how and why teachers learn a new pedagogy, considering Bakhtin's theory of language (1981) and Vygotsky's theory of concept formation (1934/1987).

How and why do teachers learn a new language-based pedagogy?

Bakhtin (1981) does not conceive of language as an abstract system of forms but as a living social-ideological reality, crossed by multiple contradictory intentions, evaluations, and concrete judgments about the world. For the author, words are dialogical, to the extent that they are always oriented towards a response and anticipate a distant horizon. Thus, each word is found on the border between one's own and an alien space (every word is semi-alien). It becomes one's own when the person populates it with their accent. So, each person appropriates a word, not from an abstract system (or encrypted languages) but from words spoken by other people's mouths, loaded with other people's intentions (natural or living languages). For this reason, Bakhtin argues, appropriating new words is never easy because it implies a process of struggle and resistance between languages.

Furthermore, Bakhtin (1986) argues that all diverse and inexhaustible areas of human activity involve the use of language. Consequently, the different forms of language are just as diverse as these areas of human life. "Each separate utterance is individual, of course, but each sphere in which language is used develops its own relatively stable types of these utterances. These we may call speech genres" (Bakhtin, 1986, p. 60). Moreover, speech genres are typical utterances of a living social practice and differ from others by their thematic content and style, but above all by their specific material conditions, social means, forms of talking and goals of each human activity (compositional structure).

With these ideas in mind, when teachers begin to create a deliberative sphere in the classroom, the interlocutors get involved, not monologically, but collaboratively and critically (Asterhan & Schwarz, 2016). From a certain reading of Bakhtin, it is possible to say that deliberative teaching could be conceived of as a new speech genre, to the extent that it modifies the performative language activity: the forms of speaking interaction and the purposes of communication (deliberative argumentative talk). Thus, learning to teach through deliberative practices could be conceived of as learning a new speech genre, a new social language practice. The question is: How does one learn to speak a new language?

For Vygotsky (1934/1987), people learn words because they co-participate in social practice using a specific form of language with others. However, the process of learning the meaning of a word does not happen at once through the verbal transmission of ideas; it depends on how language is used in each social practice. For Vygotsky, language is conceived not as a channel for the transmission of ideas, but as a medium of formation and transformation of ideas. People learn when they participate actively using the functional language of each social activity. Therefore, the starting point of a word's meaning is external: it occurs by participating initially in a collaborative activity. "Each higher form of behavior enters the scene twice in its development – first as a collective form of behavior, as an inter-psychological function, then as

an intra-psychological function, as a certain way of behaving [. . .] into the practice of personal behavior” (Vygotsky 1997, p. 95). In other words, the uses of language occur initially in social practice – collaborating psychologically –through others, and only then, when these functional uses are achieved without the other, is it possible to function psychologically autonomously (without others’ language organization).

From the notion of the inter-psychological origin of learning, Bruner (1978) develops the importance of the other that acts as scaffolding capable of helping learners to put into practice something that they could not do on their own. Consequently, if we assume the external origin of learning and the importance that the other has through language’s functional use to internalize a specific social practice, it is possible to say that, for teachers to learn new teaching, they initially need *others* that scaffold them to participate actively in this practice. The other should be capable of helping teachers to use and perform these new languages as they practice in the classroom with their students.

In brief, if we conceive of deliberative teaching as a new speech genre, we say that it is a human activity with a specific communication structure and ways of speaking. For this appropriation to begin, teachers should at least participate through these forms of language in a living format. However, the appropriation will not be easy but rather marked by resistance and struggle between languages charged with social history. Moreover, deliberative teaching involves starting to speak a new language, implying the mastery of new rules and social practice, and the opportunity (given by other scaffolding) to speak this new language has been thought of as the starting point of teachers’ learning paths (see Larrain, 2021).

The role of curriculum materials

The problem is that the classroom activity is a strictly private space, leaving one to wonder: Who can be that *other* that functions as a language scaffold for teachers once they are in service? This is even more relevant in the context of high-stakes accountability policies, in which the orientation of test scores results in the impoverishment of curriculum and collaborative practices (Hinnant-Crawford, 2019; Falabella, 2014) and in the sacrifice of the emphasis on deliberative practices and skills (McNeill et al., 2016), especially in low SES contexts (Katsh-Singer et al., 2016). How can in-service teachers perform deliberative teaching in classrooms?

One answer is curriculum materials, which can be conceived of as any resource focused on the curriculum and instruction, and which can take various forms, such as textbooks, frameworks, or curriculum programs (Grossman & Thomson, 2008). Designing deliberative curriculum materials, that is, resources in which the curricular learning goals and activities are organized in such a way that they can foster classroom deliberative teaching, could have a twofold value. On one hand, designing deliberative curriculum materials framed in local and national curriculums could support teachers to feel that they are at the same time aligned with the curriculum, responding to accountability policies in a creative and critical way, going beyond transmissivity. On the other hand, using deliberative curriculum materials may act as a scaffold for deliberative teaching learning because they can offer a new and initially alien language to perform, respond to, and appropriate.

However, these two affordances of curriculum materials depend strictly on their design and the design of their features. In particular, the learning potential of deliberative curriculum materials, as we have argued, depends on how language is scaffolded or supported, which should be done in a careful and detailed way. However, this also can be felt by teachers as de-professionalization, as far as they can feel that they are being told exactly what to say, and how. There is a paradox here because something that is supposed to be a path to professionalization can also be viewed as a path of teaching technification. As Wong (2006) showed, both paths are potential realities for teachers.

The answer, we think, relies on a careful design that can scaffold deliberative language without being felt as deskilling. We know that there is a whole field of empirical and theoretical research that suggests that curriculum materials, as tools situated in practice, can promote teacher learning through their *educative features* (Davis et al., 2014). However, so far, there has been no consensus on what these educative features are. We are especially interested in exploring how language suggestions and scaffolds are considered in this field; because we assume that *what* teachers learn is a new speech genre and *the other* could help to perform the specific languages involved in this genre (deliberative teaching activity).

This paper aims to analyze the educational characteristics of curriculum materials that are widely regarded within the community as crucial for enhancing the teaching efficacy of curriculum instructors, with a specific focus on language. With this purpose in mind, our research questions are: (1) What are the *educative features* that the literature agrees are important for promoting teacher learning in general, and deliberative teaching in particular? (2) Is language scaffolding considered a relevant characteristic for teacher learning? (3) How is language embodied in educative features? (4) From what theoretical perspective of teachers' learning are educative characteristics supported?

Method

We conducted a qualitative systematic review between March and July 2021, following the methodological approach of Preferred Reporting Items for Systematic Reviews (PRISMA) (Liberati et al., 2009), which recommended providing a solid evidence base for a full screening process and selection criteria.

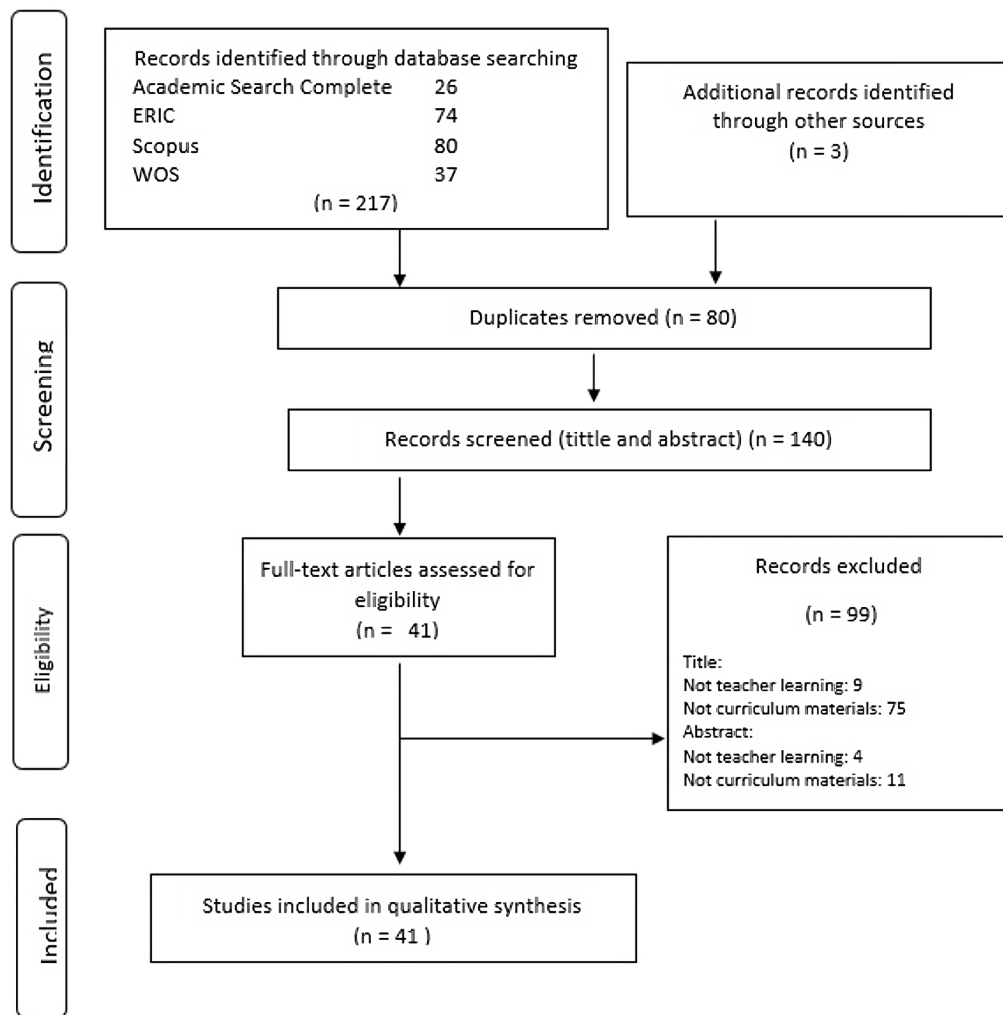
Procedure

The data collection consisted of describing the research questions, defining the inclusion and exclusion criteria, and outlining the databases and the search terms. The electronic databases in which the search was carried out were ERIC, Scopus Web of Science SocINDEX with Full Text, Academic Search Complete, SciELO, and APA PsycArticles. The search included all theoretical or empirical academic publications, dissertations, reports, or book chapters published in English or Spanish, without restriction in years.

We started the first search focusing on teacher learning in general and curricular materials. Search terms were chosen that represented the intention of finding general information about which characteristics curriculum material should have to promote teacher learning and not

necessarily regarding student learning. The term combination was as follows: (“curriculum materials” OR “educational curriculum materials”) AND “teacher learning”. From this search, 140 records were obtained (discarding duplicates); 3 additional records were identified through other sources, and 99 of them were not included because the title or abstract did not refer explicitly to curriculum materials and/or teacher learning. Of the remaining records, 41 were selected. The inclusion criteria for this question were: (1) describe educational curriculum materials (ECMs) and/or propose principles’ criteria/rules for educative curriculum materials, and (2) evaluate or explore how curriculum materials could support teacher learning (see Fig. 1).

Figure. 1. PRISMA flowchart of first question article search

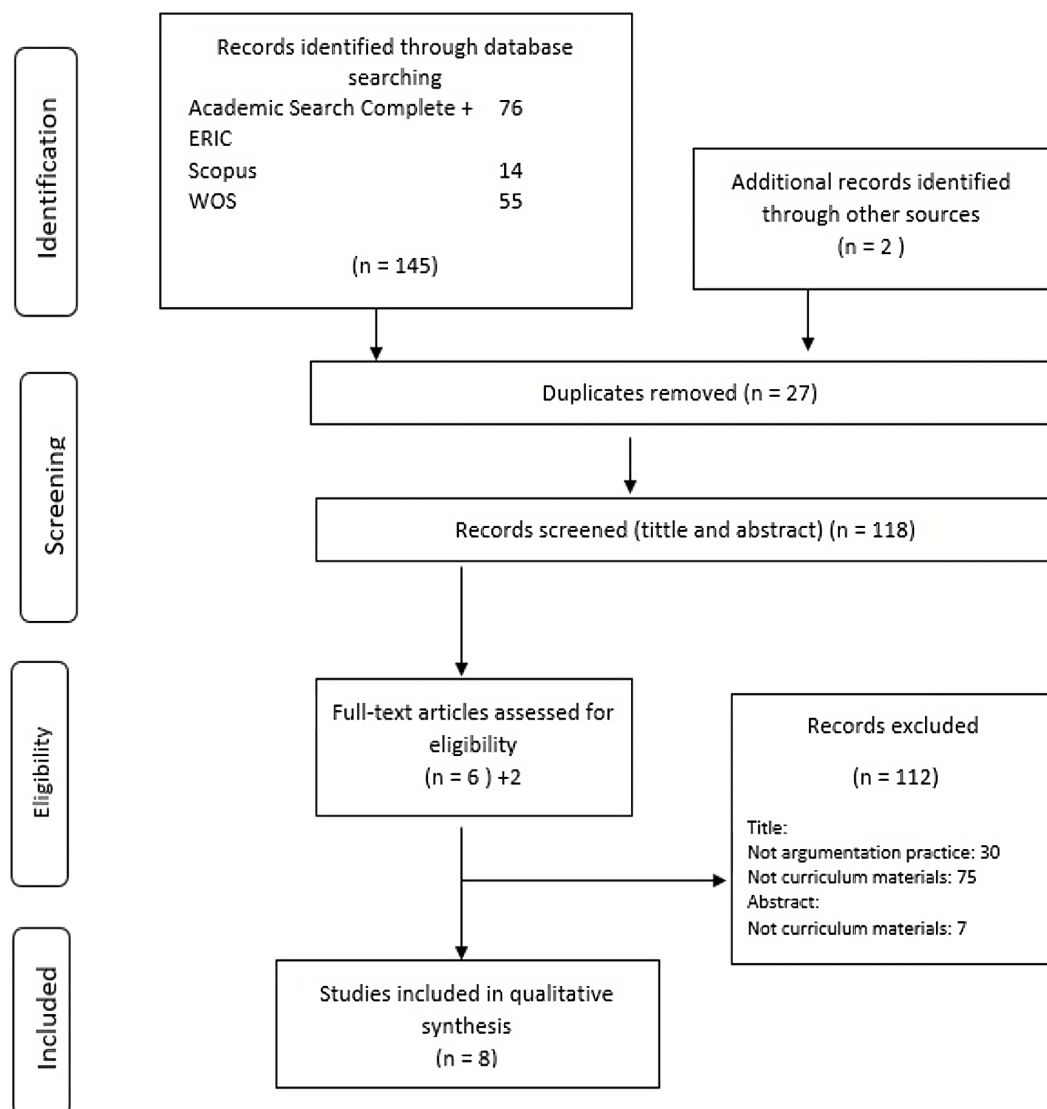


Source: Own elaboration

Then, to explore the deliberative teaching literature and curricular materials, we conducted a second search, in which we found eight papers that met the search criteria. Still, only six were new concerning the previous sample.

The search terms were chosen that represented the intention of finding which characteristics would have curriculum material to promote deliberative practices. We chose the term *argumentation over deliberative teaching* because, as we said, the latter notion comes from a very recent and limited field. The search equation was (“educative curriculum materials” OR “curriculum materials” AND “argumentation”). A total of 145 records were obtained (discarding duplicates); 2 additional records were identified and 112 were excluded because the title or abstract did not explicitly mention the argumentation and/or curricular materials. Of the remaining records, eight were selected because, in their summary, they mentioned or alluded to curriculum materials and the development of argumentation. The inclusion criteria were: (1) describing curriculum materials and/or proposing principles’ criteria/rules for educative curriculum materials, and (2) curricular materials related to promoting argumentation practices in the classroom (see Fig. 2).

Figure. 2. PRISMA flowchart of second question article search



Source: Own elaboration

Sample

Since we found 6 new articles in the second search, the total sample was left at 47 studies. The sample involved studies published in English between 1996 and 2021. Data-collection methods included questionnaires, interviews, and classroom observations. Of the 47 studies that formed the data, 33 were empirical articles in the different disciplinary areas.

Data coding and analysis

Analytical codes were raised inductively from reading the articles' abstracts and the research questions. Each general code gave place to emerging sub-categories that were refined by reading the first 10 papers until saturation. With an expert judge, the first author raised analysis codes with the search objectives in mind that allowed creating a guideline to analyze the articles found. They worked on each dimension, noting emerging themes and codes and considering notions and processes that are considered essential when learning from scaffolding material.

The categories were then formalized, and the entire corpus was systematically reviewed based on these codes. The following minor modifications were made to the initial coding guideline during the coding process: Examples, limitations, and overlapping codes were removed. Initially, there were subcategories regarding the theoretical origin of pedagogical change (cognition or practice). However, it was agreed that these subcategories were already included in the "theoretical perspective of teacher knowledge" category. Also, it was agreed that the educative features code was only marked when the authors of the article explicitly valued or argued its use. Discrepancies were resolved through discussion, and final coding decisions were made through consensus.

Two researchers double-coded 38% of the total sample in six rounds. Once they had reached an agreement, the remaining 72% of the material was coded separately. Cohen's Kappa scores were all at least good: *theoretical perspective on teachers' knowledge construction*: $K = 1$; *how language is embodied in ECM*: $K > .91$; *educative features*: $K > .59$. The final codes are defined in Table 1.

Table 1. Code scheme

Educative features or features that, according to papers, should be included for materials to have an educative potential.	Disciplinary content knowledge	Concept definitions, explanations beyond the level of student understanding and connections between lessons and units.
	Anticipation of students' thinking	Information about students' reasoning: possible ideas or thoughts that students will have during an activity, and recommendations for how a teacher can address them.

Continues

	Evaluative practices	Information about recommendations for various forms of disciplinary practice to assess.
	Literacy practices or disciplinary discourse	Language moves (talk moves) or questions that help teachers to promote the discussion or disciplinary talk.
	Implementation guide	Information that provides concrete guidance on how to manage the activity of teaching.
	Justification or reasons for the recommendations	Information that makes visible the judgement of the developers – speaking to teachers – the reasons behind.
	Narrative feature	Information about specific practices is expressed procedurally (e.g. description of fictional teachers' daily cases).
	Expository feature	Relevant information for teacher knowledge is expressed in a declarative manner.
Theoretical perspective on teachers' knowledge construction: assumptions regarding teacher knowledge construction.	Socio-cognitivist	Emphasis on teacher cognition key to pedagogical change.
	Sociocultural	Emphasis on sociocultural activity mediated by tools as key to pedagogical change.
How language is embodied in ECM: both representation and natural language were coded if present (non-exclusive subcategories).	Not present examples	Studies with no examples of language guide.
	Representational language	Language is guided as "talk moves", with movements that ask pre-defined and fixed answers, but not to develop ideas, justify or counter-argue some position.
	Natural language or living repertoires	Language is guided as "talk moves", with rich representations of how to develop ideas through deepening, stressing, discussing and justifying opinions, and not asking to deliver correct information.

Source: Own elaboration

Results

We found that the 6 papers from the second search (teacher learning and deliberative teaching) had the same trends as the overall sample from the first approach (teacher learning in general). Therefore, the results of the 47 studies are reported as a whole. Supplementary material includes the coding of all the papers included in this review.

1. Which educative features are crucial for teacher learning?

As summarized in Table 2, the findings show that most of the studies (in both samples) add value to the curriculum material as they contain information that helps to clarify the concept of *disciplinary content knowledge* (80.9%). For example, the inclusion of the flow and the connections between concepts, classes, and units was valued for supporting the development of teachers' knowledge of the subjects (Schneider & Krajcik 2002).

Table 2. Percentage of the presence in the papers of each educative feature

Educative features	
Disciplinary content knowledge	80.9%
Implementation guide	76.6%
Justification or reasons for the recommendations	72.3%
Literacy practices or disciplinary discourse	63.8%
Anticipation of students' thinking	61.7%
Evaluative practices	38%
Narrative feature	38.3%
Expository feature	23.4%

Source: Own elaboration

Table 2 reveals that a significant portion of the research emphasizes the importance of educative curriculum materials (ECMs) having an implementation guide (76.6%) and developer justifications (72.3%). Advocates argue that ECMs strike a balance between providing practical instructions and elucidating the underlying design rationale. This approach facilitates dialogue with teachers, enabling them to understand the material designers' pedagogical judgments and foundational ideas. By explicitly articulating recommendations and adaptation strategies, ECMs enhance teachers' pedagogical design capacity.

They suggest that the materials must “speak to the teacher” and not simply guide his or her actions. Both the justification for the recommendations and guidance on how teachers can implement and adapt the recommendations should be included (Davis & Krajcik, 2005; Beyer et al., 2009). In other words, ECMs must include the following: (1) the nature of the scientific practice to be promoted; (2) the rationale for why teachers should engage their students in scientific practices; and (3) suggestions on how to engage students in that practice, including the characteristics of high-quality participation in practice (Davis & Krajcik, 2005).

Albeit less consensually, more than half of the studies agree on the importance of *literacy practices* (63.8%) and *anticipation of students' thinking* (61.7%). For Bopardikar (2021), there is agreement that characteristics are designed to support teachers' understanding of how to help students understand a specific subject.

Finally, we found fewer studies that value evaluative practices (38%), narrative features (38.3%), and *expository features* (23.4%). In general, the expository feature (for example, descriptions and rationales of practice) was considered necessary for adding new ideas or general comprehension about teaching, while narratives would be considered relevant because

they help to add specific teaching moves or implementation practices (Bismarck et al., 2015).

2. Is language scaffolding considered a relevant characteristic for teacher learning?

We found explicit teacher support for language use (disciplinary discourse) in *literacy practices* or *implementation guides* since both are designed to support teachers' orchestration or to manage classroom talk: carrying out a productive discussion, suggesting approaches to structure it, or providing possible initial and follow-up questions to promote interaction and participation (Beyer et al., 2009; Davis & Krajcik, 2005). Similarly, we found explicit recommendations on how to give students feedback (*evaluative practice*) or concrete teacher comments with which to respond during class to the possible thoughts of students (*anticipation of students' ideas*) at that moment (Quebec Fuentes & Ma, 2018). Likewise, in the *narrative feature*, it is possible to identify that the examples of fictitious cases also illustrate specific ways of using the language by other teachers in particular situations.

There is also initial evidence that supports a language guide for teachers as an essential element of materials. A case study carried out by Schneider (2013) concluded that everything in the material presented as a model teacher (in the voice of a teacher) allowed teachers to start activities with their students more effectively. Thus, questions and scenarios in a ready-to-read-aloud format could help teachers create initial discussions and other oral activities (Schneider, 2013).

These results have also been demonstrated by Arias et al. (2016), who highlight that specific language-teaching movements about scientific practices help teachers engage with their students in critical scientific practices, such as making observations and predictions. For example, rubrics (evaluative practice) designed to support teachers' understanding were chosen by participants to use teacher comments directly with their students. These results suggest that if the material adopts specific forms or guides language implementation – intended to be used directly in practice to speak – they seem to be more powerful for teachers when adopting a new teaching approach.

However, the EMC literature also argues that these characteristics (how-to-talk indications or script guides) can constitute a risk or a factor that limits teachers' autonomy if an aspect is not considered. For example, Remillard (2000) argues that, although sample dialogues provide teachers with rich representations of how to speak in the classroom, they run the risk of presenting a finished interaction and not the analysis that gave rise to the teacher's orchestration.

Besides, Grossman (2004) argues that materials can range from the most prescriptive to the most flexible, offering guidance on what and how to teach or leaving many decisions to the teacher. In the same way, Beyer et al. (2009) argues that materials are more than just prescribing what and how to teach; they are designed to talk with teachers. In this way, the justifications would help teachers understand the ideas underlying why specific teaching methods are pedagogically and scientifically appropriate. In other words, ECMs can serve as a guide by delivering initial questions or guidelines to carry out a productive debate in the classroom as

long as the pedagogical purpose is offered (Beyer et al., 2009; Davis & Krajcik, 2005).

3. How is language embodied in educative features?

We also examine how the educative features outlined by the papers included guidelines on how to speak in the classroom. Since we were not reviewing the curriculum materials directly, we relied on examples provided by the authors of each study. Given that our codes of analysis (Table 1) were based on the idea that *the other*, as a scaffold, would support and have the form of a living language typical of a specific social practice (Bakhtin 1982;1986), it follows that the more enriched and elaborate the repertoire of “how to speak”, the more potential support the material will have for scaffolding.

There were 26 studies (55.3%) with examples of educative features. Of that total, only 4 used *representational language*, and 22 used *natural language* or both forms of language. As expected, most of the studies (75%) that promote argumentation (compared with the sample of teacher learning in general) use *natural language* in their materials. In other words, for deliberative pedagogies, where the way that language is used is central, educative features are focused on scaffolds to support the discursive-practice level of ways of thinking and speaking (Larrain et al., 2017; Arias et al., 2016;). In fact, according to research conducted by Larrain et al. (2020), Loper et al. (2017), and Marco-Bujosa et al. (2017), one decisive way to make high-quality collaborative argumentation happen is to design curriculum materials with characteristics that specifically scaffold the pedagogical use of argumentation on curriculum topics.

4. From which theoretical perspective are educative characteristics supported?

Most of the studies understand the construction of teaching knowledge from a *socio-cognitive perspective* (76.6%). From this perspective, the assumption is that teacher learning depends on how teachers *use* the material (Davis & Krajcik, 2005). This *use* could be influenced by three factors: i) the characteristics of the teacher (beliefs, values, and knowledge); ii) how the material is organized (educative features); and iii) the context (for example, the reading time of the text, the institutional support for change, among others). Regarding the role that the characteristics of the material have in the construction of knowledge, it is argued that, depending on how the educative characteristics are organized (the degree of abstraction), a certain type of learning is obtained (Davis et al., 2014).

It is assumed that teaching knowledge requires declarative aspects (conceptual knowledge of the discipline, principles, or reasons underlying the practice) and procedural aspects (teaching practices or situated knowledge). Then, when educative features take a concrete (not abstract) form, they will support the assimilation of specific ideas or the representation of practice. On the other hand, when features take on an abstract form, it is intended to develop a principle that may apply to other situations (for example, the justification for why students need to participate in discussions). These abstract forms would allow teachers to learn the fundamental principles and then apply them to other contexts (Davis et al., 2017). From this perspective, the characteristics of the teacher (values, beliefs, and knowledge) have a central role in determining the possibility of achieving actual learning, to the extent that the teaching

characteristics give meaning to the information in the material.

When teachers read and interpret written materials, a participatory relationship is established between the material and the teachers (Remillard, 2000), in which they draw upon their unique set of personal resources, such as experiences, beliefs, and knowledge, to give meaning to those materials (Beyer, 2009; Collopy, 2003). In this sense, the way in which the material is used depends more heavily on the beliefs and knowledge of each teacher (Remillard, 2000). Therefore, the rejection of the value of new information can be understood in light of the conflict between the teacher's cognition (beliefs or knowledge) and the material's proposal.

Consequently, teachers would follow beliefs that seem to align with traditional instruction and would experience the highest degrees of frustration when using curriculum materials based on new methodologies (Lloyd, 2009). In this sense, although the information comes from curriculum material, teachers' representations, ideas, knowledge, beliefs, or value systems are the starting point for practice change. It is assumed that teacher cognition acts as a filter that mediates decision-making and information from the social context. Teachers' cognition may have influenced how they read and interpret the ideas in the material.

A small number of the studies (23.4%) view teacher knowledge construction from a *sociocultural perspective*. These studies (Grossman & Thompson, 2004, 2008) cite authors such as Cole (1996) or Wertsch (1981) to emphasize the essential relationship between agents and tools. This perspective implies that teacher learning involves a tool-mediated action, and the curriculum materials represent these tools. As Brown (2011) pointed out, "Given the fundamental role of artifacts in human activity, it follows that the nature and composition of a specific tool will have a significant influence on the nature of the tasks that can be accomplished with it" (p.20). However, within these studies, we find a variation regarding how to conceptualize the tool. While some studies explain the tool as an artifact that contains representations that will help teachers learn new ideas (abstract or specific), a few explicitly mention that this tool is understood as a language (Michaels & O'Connor, 2015; Larrain et al., 2017).

In other words, the notion of the tool is understood not as a representation of new ideas (general or specific) for mediating teacher actions but as scaffolds for thought on an *utterance level*, to support real classroom talks. They conceive of the sociocultural tool from a concrete idea of ways of speaking. The assumption is that ways of speaking (enacted in social practice) have an impact on teacher-embodied learning (Michaels & O'Connor 2015). In the same way, Larrain et al. (2017) said: "Following Bakhtin's notion of appropriation (1981), one may say that through the mentioned dialogue between teachers and curriculum materials, teacher's appropriate materials' embodied knowledge by contesting to it and being able to talk about their own version of this new language" (p.535). The use or appropriation of living forms of speech is a scaffold for transformation for teachers (Michaels & O'Connor, 2015). People learn to talk by talking (as a situated and context-based practice) and not by gaining declarative knowledge on how to talk (Larrain et al., 2017).

Discussion

To deal with the social, political, environmental, migratory, health, and gender crises

(to name a few) that the world is currently experiencing, citizens require the ability to speak and reason politically, to think in sustainable modes of organization and reasonable solutions (Larrain et al., 2021). One of the institutions that can play a fundamental role in this type of complex formation is school. Unfortunately, despite great efforts, teaching is still predominantly transmissive (Resnick et al., 2018). In order to perform deliberative speech genres in classrooms, teachers need to learn how to reorganize classroom interactions and speak in new ways. One option that arises as a possible scaffold inside the classroom could be the educative curricular materials (Davis & Krajcik, 2005). For these materials to really be learning agents, they need to be designed with the intention of enabling teachers to perform new ways of using language functionally, while ensuring that this design does not imply a decline in teacher autonomy and control (Wong, 2006). That is, to build scaffolding to perform language activity with a professional design.

An interesting result of this review is that there is broad agreement in the literature that scaffolding language activity through materials (ways of speaking) is a crucial element to consider. Language as a guide on how to talk is present in specific aspects of some of the most valued educative features of the materials. Language, conceptualized as “the other,” manifests through specific educative features (such as implementation guides, literacy practices, and anticipation of students’ ideas). These features assist teachers in employing language for diverse purposes during classes and facilitate their responses to students’ thoughts. Additionally, they enable teachers to manage different perspectives and pose questions to justify ideas.

From the socio-cognitive perspective (the most shared theoretical point of view of this review), it is considered important that the educative features adopt a general form (to support the general ideas behind teaching) and a specific one capable of representing a practical idea or a teaching action (Davis et al., 2014; 2017). From the sociocultural perspective (specifically the one that considers the tool to be language), it is assumed that the appropriation of ways of speaking is the level of focus necessary to learn new teaching, not from the practical ideas contained in the materials but from the activity that is being scaffolded (Michaels & O’Connor, 2015; Larrain et al., 2017).

We also found that scholars believe that there are risks of de-professionalization if these guidelines on how to speak are not accompanied by the reasons or principles that support them (Remillard, 2000). However, the literature tends to agree that it is possible to design a scaffolding capable of supporting the learning of a new speech genre (with living language) as long as teachers are given a context of justification and general principles.

The paradox regarding the importance of scaffolding in detail about what and how to talk is resolved by pointing out that it is necessary to deliver the reasons and judgements of the developers so that teachers can incorporate general principles of practice. Precaution must be taken, especially if teachers are not intended to mechanically acquire the forms of speech without understanding the ideas of why and how these forms are important.

Although warning of this risk is important when designing professionalizing educative curricular materials, it is also possible to reveal an assumption regarding the language that underlies this consideration. We found a broad consensus on how to guide teachers in the

different activities necessary to organize the classroom in its various functions. However, it is possible to notice that language is central, not necessarily in its scaffolding role, but rather in its value as a medium for transmitting ideas to teachers (Vygotsky 1934/1987).

Paying attention to providing a good context of justification for teachers may reveal a notion of language as a vehicle for the transmission of ideas, rather than a scaffold for the collaborative appropriation of a new speech genre. This assumes that teachers may establish an analytical relationship with the curriculum materials rather than a performative one. Following Bakhtin (1981;1986) and Vygotsky (1934/1987), we suggest that for deliberative teaching to come to life and have the possibility of being appropriated and internalized, it is necessary to conceive language theoretically as the medium of collaborative activity.

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